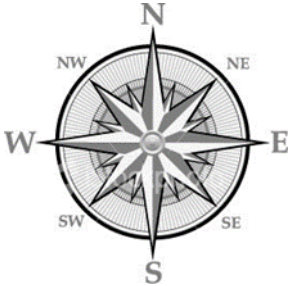




## United Cook Inlet Drift Association

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## COOK INLET FISHERMAN'S FUND

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November 26, 2020

Mr. Simon Kinneen, Chair  
North Pacific Fishery Management Council  
1007 West Third, Suite 400  
Anchorage, Alaska 99501

Re: Comments by United Cook Inlet Drift Association on Agenda Item C2

Dear Mr. Kinneen:

The United Cook Inlet Drift Association (“UCIDA”) and Cook Inlet Fisherman’s Fund (“CIFF”) hereby submit these comments on the Council’s proposal to take final action regarding the Salmon FMP. These comments include a preliminary review of the public review draft of the “Environmental Assessment/Regulatory Impact Review for Proposed Amendment XX to the Fishery Management Plan for the Salmon Fisheries in the EEZ Off Alaska” (the “Draft EA”) posted on the Council’s website on November 10, 2020. UCIDA’s ability to meaningfully review this document, which is 450 pages long, is constrained by the fact that the document was made available only 17 days before comments are due (inclusive of two federal holidays), and the fact that changes from prior versions of the document are not redlined in the final draft. UCIDA’s ability to comment is further hampered by the Council’s unusual decision to decline to identify a preferred alternative in advance of its plans to take final action on the Salmon FMP at its next meeting.

The present amendment process began after the Ninth Circuit in September of 2016 held that Amendment 12 to the Salmon FMP was an improper attempt by the “Council to shirk the statutory command that it ‘shall’ issue an FMP for each fishery within its jurisdiction requiring

conservation and management.”<sup>1</sup> Unfortunately, after more than four years of process, the Council appears no closer to developing an FMP that meets the requirements of the Magnuson Stevens Conservation and Management Act (“MSA”).

UCIDA does not support any of the alternatives presently before the Council. UCIDA promoted an alternative that would ensure the fishery is managed throughout its range in a manner consistent with the MSA. Under UCIDA’s proposed alternative, the FMP would provide management goals and objectives for Cook Inlet salmon stocks for their entire life-cycle and range, and then delegate (if appropriate) implementation of those conservation and management goals and objectives to the State of Alaska. The Council has refused to even *consider* this reasonable alternative, and the Draft EA eliminates UCIDA’s alternative from detailed consideration. Instead, the Council has elected to move forward with alternatives that are themselves seriously flawed and inconsistent with the requirements of the MSA.<sup>2</sup>

The Council’s refusal to consider managing Cook Inlet salmon throughout their range cannot be squared with its obligations under the MSA.<sup>3</sup> NMFS’s regulations explain that “[t]he geographic scope of the fishery, for planning purposes, should cover the entire range of the stock(s) of fish, and not be overly constrained by political boundaries.”<sup>4</sup> In direct derogation of this guidance (and the text of the MSA), this FMP process has been *completely constrained* by political boundaries, and fixated on the notion that the FMP will only manage salmon while they swim through the exclusive economic zone (“EEZ”). This myopic view of the “fishery” as limited to the salmon while they transit through the EEZ defies the MSA and basic common sense, and has infected the development of all the action alternatives before the Council

Rather than considering management of salmon throughout their range, the process for developing this FMP has been far more concerned about protecting the State’s self-proclaimed rights in Cook Inlet salmon than it has been in serving the Congressionally stated interests in the MSA of managing the salmon fishery in the best interests of the Nation. The federal interests in the fishery are supposed to take precedent over local interests. The State of Alaska knows this which is why it pushed Amendment 12 to exempt Cook Inlet in the first place. As the State of Alaska clearly stated, when describing its interests in Amendment 12:

If the FMP applied to salmon fishing in the EEZ waters of Cook Inlet, even though the State could presumably continue to manage the waters within its own boundaries, intense coordination with federal agencies managing the EEZ fishery would be required and to the extent discretionary federal management objectives were

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<sup>1</sup> *United Cook Inlet Drift Ass'n v. Nat'l Marine Fisheries Serv.*, 837 F.3d 1055, 1063 (9th Cir. 2016).

<sup>2</sup> UCIDA has provided extensive legal briefing on why Alternatives 2 and 3 fail to comply with the MSA or the Ninth Circuit’s ruling, and are attaching an incorporating those arguments (attached hereto as Exhibits A and B).

<sup>3</sup> It also violates NEPA, which requires consideration of all reasonable alternatives.

<sup>4</sup> 50 C.F.R. § 600.320(b).

inconsistent with State management, the State would have to adjust and accommodate for those federal actions.<sup>5</sup>

This obvious limitation follows from the MSA itself: “[t]he Act makes plain that federal fisheries are to be governed by federal rules in the national interest, not managed by a state based on parochial concerns.”<sup>6</sup>

After the State lost its bid to uphold the illegal deferral in Amendment 12, the State somehow convinced NMFS and the Council to flip the script. Instead of the State having to “adjust and accommodate” the federal interests, the Council proposed FMP revisions that do the opposite. As the Draft EA explains:

Federal management of the commercial salmon fishery in the Cook Inlet EEZ would have to be responsive to salmon harvests in State waters. In other words, the commercial salmon fishery in the Cook Inlet EEZ would only occur if there was a harvestable surplus after accounting for anticipated removals in State waters . . .<sup>7</sup>

Alternative 2 allows the state to decide if and when fishing occurs in the EEZ, Alternative 3 would allow fishing in the EEZ only if the “State of Alaska manages Cook Inlet salmon resources in State waters such that there is adequate surplus for a fishery in Federal waters,” and Alternative 4 closes the EEZ altogether in favor of fishing only in state waters.<sup>8</sup> All three action alternatives improperly elevate the State’s interest over the federal interest, contrary to the plain intent of the MSA. And these alternatives also ignore the practical reality that fishing in the EEZ occurs *earlier* in time, before the bulk of the fish reach nearshore areas.

Alternative 4 is a transparent attempt to cater to State interests. After four years of attempting to develop a fishery management plan, Alternative 4 would “throw in the towel” and close commercial fishing in the EEZ entirely. This gives the State exactly what it wants – total control of the Cook Inlet Salmon Fishery. This idea was never run by stakeholders, the salmon committee, or the Advisory Panel. It was proposed and unanimously approved for consideration as an alternative without any public input. And then, in a matter of a couple of weeks, NMFS and Council staff purported to hurriedly analyze the economic impacts of this draconian closing without so much as reaching out to a single commercial fisherman, processor or fishing community to inquire as to the consequences of this ill-considered action. This has turned the Council process into a farce. The Council has refused to even *consider* UCIDA’s proposed alternative to manage the fishery throughout its range, but is willing to consider, analyze, and now potentially enact an alternative that will essentially put commercial fishing out of business.

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<sup>5</sup> Motion to Intervene by State of Alaska (attached hereto as Exhibit C).

<sup>6</sup> *United Cook Inlet Drift Ass'n v. Nat'l Marine Fisheries Serv.*, 837 F.3d 1055, 1063 (9th Cir. 2016)

<sup>7</sup> Draft EA at 60.

<sup>8</sup> *See* Draft EA at 94.

The Council has not done its due diligence on Alternative 4. It is well established that the State of Alaska cannot properly manage the commercial salmon fishery in Cook Inlet if the EEZ portion of the fishery is closed.<sup>9</sup> In the State of Alaska’s own words: “keeping the federal waters of the Cook Inlet salmon fishery open will make it easier for state managers to control escapement of salmon through the commercial harvest of Cook Inlet salmon stocks.”<sup>10</sup> Without the EEZ fishery, over-escapement of salmon will increase, the predictability of the salmon harvest will decrease, processors will be unable to distribute the run over time, and both the industry and the resource will suffer. Closing the EEZ, the State explains, will have “severe adverse impact on those who depend on the Cook Inlet salmon fishery.”<sup>11</sup> The Council is entrusted to “exercise sound judgment in the stewardship of fishery resources through the preparation, monitoring, and revision” of FMPs.<sup>12</sup> Alternative 4 throws that all away in favor of the State’s desire to control the fishery. Alternative 4 fails to comply with the MSA and the Ninth Circuit’s instruction, and abdicates federal responsibility of this important fishery.<sup>13</sup>

There are many other fatal flaws with the proposed alternatives and the Draft EA. Many of these concerns have already been raised by UCIDA with the Council in comment letters but remain unaddressed by the Council in the Draft EA. UCIDA relies on and incorporates those prior comments and adds additional observations below.

The Council’s process remains rooted in the misconception that the State of Alaska is managing salmon in Cook Inlet in a manner consistent with the MSA. As part of the Amendment 12 process, the Council concluded that “the State was managing the salmon fisheries within these three areas consistent with the policies and standards of the MSA.”<sup>14</sup> Even assuming that conclusion was supportable at the time it was made, it is not supportable now. UCIDA has already presented the Council with a clear demonstration that the State’s representations in 2012 were based on practices that it either abandoned or never carried out.<sup>15</sup> The State is not managing the Cook Inlet salmon fisheries in a manner consistent with the MSA.<sup>16</sup> The State’s track record in Cook Inlet since 2012 is dismal. The commercial fishery was an outright disaster in 2012, 2018, and 2020, and dismal (if not disastrous) in 2017 and 2019.<sup>17</sup>

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<sup>9</sup> See Declaration of Jeff Fox (attached hereto as Exhibit D).

<sup>10</sup> State of Alaska Memorandum in Opposition to UCIDA’s Motion for Issuance of Final Judgment (attached hereto as Exhibit E).

<sup>11</sup> *Id.*

<sup>12</sup> 16 U.S.C. § 1801(b)(5).

<sup>13</sup> Alternative 3 is not any better. Although Alternative 3 three discusses a separate federal fishery, it is clear that the plan under Alternative 3 would likely result in fishery closure.

<sup>14</sup> Draft EA at 29.

<sup>15</sup> See Letter from UCIDA to Council, May 18, 2020 (attached hereto as Exhibit F).

<sup>16</sup> See Declaration of Jeff Fox (attached hereto as Exhibit D).

<sup>17</sup> See Declaration of Erik Huebsch (attached hereto as Exhibit G); Supplemental Declaration of Erik Huebsch (attached hereto as Exhibit H; Alaska Department of Fish and Game, 2020 Season Summary, November 4, 2020 (attached hereto as Exhibit I); City of Kenai Resolution re 2018 disaster (attached hereto as Exhibit J); Letter from CIFF re 2018 disaster (attached hereto as Exhibit K); Letter from Kenai Peninsula Economic Development District re 2018 disaster (attached hereto as Exhibit L); Kenai Peninsula Borough Resolution 2018-052 re 2018 disaster

This is a track record of failure and disaster, not a track record that is “consistent with the policies and standards of the MSA.”

Indeed, the State’s pattern of chronic over-escapement of salmon stocks continued in 2020, with the State blowing past the 2020 sockeye escapement goals on the Kenai and Kasilof Rivers.<sup>18</sup> This practice frustrates the purpose of the MSA. “The primary purpose of a plan is to establish conservation and management measures which are necessary and appropriate for the conservation and management of the fishery, to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery.”<sup>19</sup> “The ultimate goal, therefore, of any fishery management plan is to establish measures which achieve a rate or level of fishing mortality that allows the fishery to produce the maximum sustainable yield on a continuing basis.”<sup>20</sup> The proposed changes to the Salmon FMP cannot get the fishery to this goal because the State is not managing Cook Inlet salmon fisheries to achieve maximum sustained yield. As UCIDA has repeatedly pointed out, the State is wasting millions of fish every year. This foregone harvest frustrates the purpose and intent of the MSA.<sup>21</sup>

The State’s chronic over escapement of salmon also is causing long-term damage to the Cook Inlet salmon runs. The impact of over escapement is well established and conceded by the State of Alaska: “The danger of over-harvesting is obvious, but under-harvesting salmon can also harm stocks because having too many fish in the spawning areas can overload the areas' capacity and lead to fewer salmon surviving.”<sup>22</sup> Thus, the State explains: “Whether salmon are over or under-harvested, the result is the same: fewer salmon in years to come.”<sup>23</sup>

Despite the State’s concession on this issue, the Draft EA attempts to marginalize this chronic problem. Relying on Appendix 13, the Draft EA concludes it “found limited evidence for overcompensation (the tendency for recruitment to decrease at high levels of spawning abundance) for either stock.” The evidence is “limited” because Appendix 13 only looked at 2 of the 36 stocks of salmon with established escapement goals in Cook Inlet. Nor did Appendix 13 look at the *hundreds* of Cook Inlet salmon stocks that do not even have escapements goals.

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(attached hereto as Exhibit M); Letter from City of Homer re 2018 disaster (attached hereto as Exhibit N); Kenai Peninsula Borough Resolution 2020-073 re 2020 disaster (attached hereto as Exhibit O); UCIDA 2020 request for disaster declarations for sockeye and pink salmon (attached hereto as Exhibits P and Q); CIFF 2020 disaster request for sockeye and pink salmon (attached hereto as Exhibits R and S); Kenai Peninsula Legislative Delegation letter re 2020 disaster (attached hereto as Exhibit T); Secretary of Commerce 2012 Disaster Declaration (attached hereto as Exhibit U); Letter from UCIDA to NMFS re 2012 fishery disaster (Exhibit V).

<sup>18</sup> Alaska Department of Fish and Game, 2020 Season Summary, November 4, 2020 (Exhibit I).

<sup>19</sup> *A.M.L. Int’l, Inc. v. Daley*, 107 F. Supp. 2d 90, 94 (D. Mass. 2000) (citing 6 U.S.C. § 1853(a)(1)(A)).

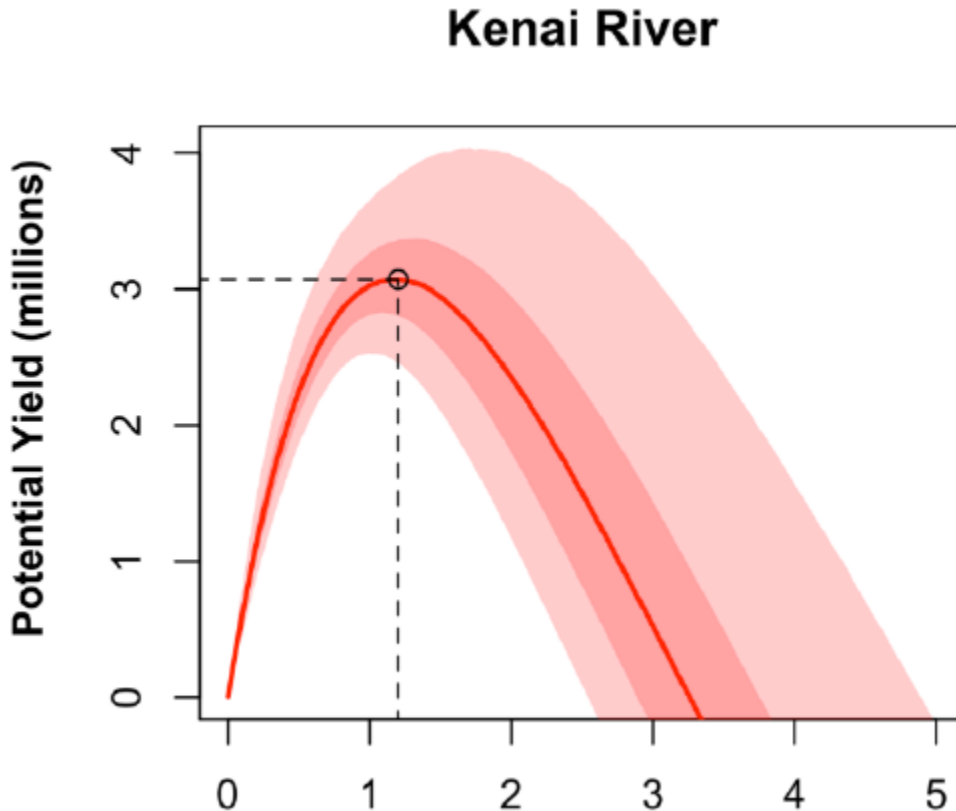
<sup>20</sup> *Id.*

<sup>21</sup> *See* Testimony of Ray Hillborn (attached hereto as Exhibit W) (“precautionary underfishing is causing far more” loss in potential yield than over-fishing).

<sup>22</sup> *See* State of Alaska, Petition of Writ of Certiorari (attached hereto as Exhibit X).

<sup>23</sup> *Id.*

More importantly, even this “limited” evidence *confirms* the problem of over escapement. Every single model evaluated in Appendix 13 shows that productivity tapers off (and in some case rapidly decreases) at certain escapement levels. Thus, for example Appendix 13 identifies the brood year interaction model (Figure 9) as the most accurate for Kenai River sockeye. That table shows that MSY for Kenai River Sockeye is achieved at 1.2 million spawners producing on average 3.2 million recruits. At any escapement above or below 1.2 million spawners (the MSY level) yields drop off significantly as shown in Figure 9 below.



Applied to 2020, the State allowed 1.6 million Kenai River late run sockeyes to reach spawning grounds. Table 9 shows that maximum sustained yields (harvests) for the Kenai River is achieved at 1.2 million. This means that 400,000 sockeye were lost to harvest over the MSY spawner needs (1.2 million) in 2020.

Equally problematic, it does not appear that these models were trued up with actual historical yield results for Kenai River late run sockeye under State of Alaska management. An annual yield of 3.2 million Kenai River later run sockeyes has never been achieved in practice for at least the last 10 years. Instead, as discussed above, the history of the State’s management of salmon in Cook Inlet in the last decade is one of repeated economic disaster, low harvest, and high escapement.

. These are serious present and future losses from State management that are not addressed in the Draft EA, and squarely undermine any notion that the State is managing the fishery in a manner consistent with the MSA. Under all of the Council’s proposed alternatives, these serious problems will continue or get worse.

These serious questions about the State’s management practices and ability to manage consistent with the MSA are further evidenced by ongoing physical changes to the fishery. As UCIDA explained to the Council, a review of Cook Inlet catch history shows that sockeye salmon in Cook Inlet are getting smaller (by about a pound) and returning later.<sup>24</sup> Others in the Scientific community have noted similar changes in the salmon fishery.<sup>25</sup> The Draft EA says nothing about these changes or the ability of the State to manage the fishery in response to these changes.

The proposed FMP amendments have many other factual and legal flaws. Alternative 2 would allow the State to determine how many fish may be caught in the EEZ and how to “allocate” the fishery.<sup>26</sup> But allocation decisions must be made by the Council, consistent with National Standard 4, and MSA Section 303a.<sup>27</sup> The Council is obligated to ensure that any allocation “is fair and equitable to all such fishermen,” and “reasonably calculated to promote conservation.”<sup>28</sup> The Council cannot abdicate this responsibility, especially when the State’s allocation decisions are often not fair and equitable (or transparent), and when the State has historically allocated a large portion of the fishery to state-resident-only permit holders. Similarly, Alternative 2 allows the state to decide “where” fishing may occur.<sup>29</sup> But establishing closed areas is the responsibility of the Council, and must be done in the FMP, and can only be implemented if specific criteria are met.<sup>30</sup> The Council cannot abdicate this to the State either.

Indeed, the vast majority of what the Council proposes to delegate to the State as “Category 2”<sup>31</sup> includes essential fishery management decisions that must be made by the Council, and are core functions that need to be specified in the plan itself: escapement goals, fishing seasons, closed waters, fishing locations, and unspecified “other” measures. The FMP needs to establish these measures, and then (as appropriate), may delegate implementation to the state. Instead, the Council is improperly deferring the substance of the plan to the State’s future discretion.

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<sup>24</sup> UCIDA, *Issues Concerning Salmon Yields in Cook Inlet*, Alaska, September 2019 (attached hereto as Exhibit Y).

<sup>25</sup> See K.G. Oke, *et al.*, *Recent declines in salmon body size impact ecosystems and fisheries*, Nature Communications, 2020 (attached hereto as Exhibit Z).

<sup>26</sup> Draft EA at 8.

<sup>27</sup> 16 U.S.C. §§ 1851(a)(4), 1853a.

<sup>28</sup> 16 U.S.C. § 1851(a)(4).

<sup>29</sup> Draft EA at 8.

<sup>30</sup> 16 U.S.C. § 1853(b)(2). This requirement also precludes Alternative 4. The closure of the EEZ would have zero benefits to the fishery, and as discussed above would negative impact the fishery, fishery conservation, and overall fishing activity.

<sup>31</sup> Draft EA at 71-72.

The Draft EA also subverts the concept of optimum yield. Optimum yield is supposed to mean “the amount of fish” that “will provide the greatest overall benefit to the Nation . . .”<sup>32</sup> and every FMP must achieve “optimum yield from each fishery for the United States fishing industry.”<sup>33</sup> The Draft EA turns this upside down, allowing the State to set optimum yield based on its own interests: “[t]he portion of the annual catch harvested by the commercial salmon fishery in the Cook Inlet EEZ reflects the biological, economic, and social factors considered by the BOF and ADF&G, in accordance with MSA requirements, in determining when to open and close the salmon harvest by the salmon fishery.”<sup>34</sup> This is not consistent with the MSA and does not ensure the greatest overall benefit to the Nation.

At bottom, Alternative 2 just tries to implement the status quo in another guise. Indeed, the Draft EA states that Alternative 2 “is not expected to significantly change the State’s management of the commercial salmon fishery in a way that would result in impacts to the environment that are significantly different from the status quo/no action.”<sup>35</sup> The status quo is a rapidly failing commercial fishery. Assuredly, the Council should aim higher than that.

The Draft EA also does a plainly inadequate job of assessing the economic consequences of any of its alternatives. As UCIDA has repeatedly explained, the State of Alaska is rapidly pushing the commercial fishery in Cook Inlet out of existence. Currently, there are only two salmon processors left in Cook Inlet. The value of commercial salmon permits have fallen 90%. The average commercial drift permit holder grossed about \$4,400 in revenue in 2020. Alternative 2 perpetuates the status quo on the path to the end of commercial fishing. Alternative 3 will accelerate that path by resulting in less fishing or a total closure of the EEZ. Alternative 4 will accelerate that path with a total closure of the fishery in the EEZ.

The drastic economic consequences of preserving this “status quo” under State management are not meaningfully addressed in the Draft EA. These impacts will be disproportionately felt by small fishing communities. As of 2020 there are 1,062 Cook Inlet salmon permits (including drift, setnet and seine permit) owned by residents in the coastal communities of Nanwalek, Port Graham, Seldovia, Halibut Cove, Kachemak Selo, Razdolna, Voznesenka, Fritz Creek, Homer, Anchor Point, Nikolaevsk, Ninilchik, Clam Gulch, Kasilof, Soldotna, Sterling, Kenai, Nikiski, Seward and Tyonek.<sup>36</sup> The Council’s role is to help provide for the “sustained participation” of such communities and to “minimize adverse economic impacts on such communities.”<sup>37</sup> None of the proposed action alternatives achieve this result, and the closures contemplated by Alternatives 3 and 4 would seriously undermine the ongoing viability of commercial salmon industry in the Inlet and coastal communities.

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<sup>32</sup> 16 U.S.C. § 1802(33).

<sup>33</sup> 16 U.S.C. § 1851(a)(1).

<sup>34</sup> Draft EA at 81.

<sup>35</sup> Draft EA at 81.

<sup>36</sup> A conservative estimate of the average capital investment in these fishing businesses would be \$150,000. All together their value is around \$160 million.

<sup>37</sup> 16 U.S.C. § 1851(a)(8).



The Draft EA seriously-under represents these problems. The Draft EA rosily describes exceeded escapement goals as “met” for stocks, when in fact, escapement goals were exceeded resulting in lost harvest.<sup>38</sup> Likewise, the Draft EA rosily assumes that any closure under Alternatives 3 or 4 will simply result in better harvest in state waters, and thus closing the EEZ is not likely to be significant.<sup>39</sup> This is not true at all, and these conclusions were concocted without discussion with the commercial fishing industry or local communities. This is the only area where many Cook Inlet salmon stocks can be significantly harvested. Closing the EEZ portion of Cook Inlet would be fatal to the commercial salmon fishery in Cook Inlet. The statement in the Draft EA that Alternative 4 would “maximize net benefits to the Nation”<sup>40</sup> is completely unsupported and either uninformed or biased.

Lastly, Appendix 12 provides the State’s “answers” on the impacts of its own proposal to close fishing in the EEZ. The State calls the EEZ portion of the Cook Inlet a “small area.” That is not accurate. The area is over 1,000 square miles, and comprises about ½ of the Central District. The area has historically been one of the most productive fishing locations in Cook Inlet. Millions of salmon are harvested in the center of the Inlet. At bottom, the State’s answers concede that closure will result in decreased fishing, but neither the State nor the Draft EA attempts to explain the magnitude of that impact.

The reality is that closing the EEZ salmon fishery will have disastrous economic consequences and unknown (and yet to be evaluated) consequence to the resource. Forcing fishing into state waters shortens the fishing season, increases the significant risks of chronic over-escapement, increases the risk of gear conflicts and decreases the quality of the harvest.<sup>41</sup> None of these concerns are evaluated and analyzed in the Draft EA.

Sincerely,

*Original Signed Document*

David Martin, President  
United Cook Inlet Drift Association

*Original Signed Document*

John McCombs, President  
Cook Inlet Fisherman’s Fund

Enclosures: A-Z

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<sup>38</sup> Draft EA at 120.

<sup>39</sup> Draft EA at 141.

<sup>40</sup> Draft EA at 307.

<sup>41</sup> It also increases safety concerns as vessels in the nearshore areas are at increased risk of vessels and gear hitting “erratic” boulders (large submerged boulders in the nearshore area).

# EXHIBIT A

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IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF ALASKA

UNITED COOK INLET DRIFT  
ASSOCIATION AND COOK INLET  
FISHERMEN'S FUND,

Plaintiffs,

v.

NATIONAL MARINE FISHERIES SERVICE,  
ET AL.,

Defendants,

and

STATE OF ALASKA,

Intervenor-Defendant.

Case. No. 3:13-cv-00104-TMB

**MOTION TO ENFORCE JUDGMENT**

MOTION TO ENFORCE JUDGMENT

*United Cook Inlet Drift Association et al. v. NMFS et al.*, 3:13-cv-00104-TMB

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## I. INTRODUCTION

Plaintiffs United Cook Inlet Drift Association and Cook Inlet Fishermen’s Fund (collectively “UCIDA” or “Plaintiffs”) seek to enforce the mandate of the Ninth Circuit in *United Cook Inlet Drift Ass’n v. National Marine Fisheries Service*, 837 F.3d 1055, 1064 (9th Cir. 2016) (“*United Cook*”), as well as the stipulated judgment entered by this Court at Dkt. 102. In *United Cook*, the Ninth Circuit held that the National Marine Fisheries Service (“NMFS”) violated the Magnuson Stevens Fishery Conservation and Management Act (“Magnuson Act” or “MSA”) by exempting the Cook Inlet salmon fishery from federal management “because the agency is content with State management.”<sup>1</sup> The Ninth Circuit found that NMFS and the North Pacific Fishery Management Council (the “Council”) are **required** to produce a fishery management plan (“FMP”) for the Cook Inlet salmon fishery pursuant to the Magnuson Act.<sup>2</sup> Accordingly, this Court remanded the case back to NMFS to produce an FMP for the fishery, as the Ninth Circuit instructed.

This Court retained jurisdiction to oversee compliance during remand.<sup>3</sup> As part of that supervision, this Court has the authority to issue orders to enforce compliance with

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<sup>1</sup> 837 F.3d at 1057; *see id.* at 1064-65.

<sup>2</sup> 16 U.S.C. §§ 1801-1891d.

<sup>3</sup> Dkt. 102.

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the Ninth Circuit’s mandate and to set reasonable deadlines for compliance.<sup>4</sup> Judicial intervention is urgently needed because the remand process has far outstripped the expected timeframe and now has no apparent end in sight. The remand process has stalled because NMFS, the Council, and UCIDA have reached an “impasse” over the scope of NMFS’s legal obligations under the Magnuson Act and the Ninth Circuit’s decision in this case. In short, NMFS and the Council expressly intend to continue to leave the management of the fishery to the State, whereas UCIDA maintains that the Ninth Circuit’s holding forbids this practice. Judicial intervention is needed to break this logjam and bring the remand to an expeditious conclusion.

Judicial intervention is also urgently needed because UCIDA’s members cannot afford to wait any longer for the required FMP. In the three seasons under State management (2017, 2018, and 2019) since the Ninth Circuit issued its mandate, the commercial fishery has precipitously declined. The 2018 commercial harvest was *the* worst in more than 40 years, and the 2017 and 2019 seasons were amongst the worst in that same period. Compounding that injury, in each of these three seasons, millions of surplus salmon went unharvested. If these circumstances continue, the Cook Inlet commercial salmon fishery will not survive. A judicial ruling issued years from now finding that NMFS and the Council failed to fulfill the express requirements of the Ninth

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<sup>4</sup> *N.C. Fisheries Ass’n, Inc. v. Evans*, 152 F. Supp. 2d 870, 882 (E.D. Va. 2001) (granting plaintiff’s motion to enforce court’s prior order to issue “quotas in a reasonable and timely fashion” after Secretary of Commerce failed to meet the imposed deadlines).

Circuit’s decision (should the present unlawful course be allowed to continue) will be cold comfort to a fishery that has expired under State management in the interim.

To fix this urgent problem, UCIDA requests that this Court (a) issue a declaratory ruling to clarify NMFS and the Council’s obligations on remand under the Ninth Circuit’s holding and the Magnuson Act, (b) set express timelines for the Council and NMFS to complete their work on the FMP consistent with those instructions, and (c) appoint a special master to ensure compliance with those orders.

## II. BACKGROUND

### A. The Magnuson Act Is the National Charter for Fishery Management

The MSA “creates a ‘national program for the conservation and management of the fishery resources of the United States.’”<sup>5</sup> The MSA calls out anadromous stocks like salmon as an important national resource.<sup>6</sup> The “declared” purpose of the MSA is to “take immediate action to conserve and manage the fishery resources found off the coasts of the United States, *and* the anadromous species,” like salmon.<sup>7</sup>

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<sup>5</sup> *United Cook*, 837 F.3d at 1057 (quoting 16 U.S.C. § 1801(a)(6)).

<sup>6</sup> 16 U.S.C. § 1801(a)(1) (“The fish off the coasts of the United States . . . and the anadromous species which spawn in United States rivers or estuaries, constitute valuable and renewable natural resources.”); *id.* § 1802(1) (“The term ‘anadromous species’ means species of fish which spawn in fresh or estuarine waters of the United States and which migrate to ocean waters.”).

<sup>7</sup> *Id.* § 1801(b)(1) (emphasis added).

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The MSA’s purpose is to put these national fishery resources under “sound management” and “to realize the full potential of the Nation’s fishery resources.”<sup>8</sup> This includes both conservation measures to prevent overfishing, as well as a “national program for the development of fisheries which are underutilized or not utilized by the United States fishing industry.”<sup>9</sup>

The primary mechanism for providing that sound management is the development of an FMP “which will achieve and maintain, on a continuing basis, the optimum yield from each fishery.”<sup>10</sup> The MSA defines “fishery” to mean “one or more stocks of fish which can be treated as a unit for purposes of conservation and management” and “any fishing for such stocks.”<sup>11</sup>

The MSA prescribes required elements of every FMP.<sup>12</sup> Among other things, an FMP must include “conservation and management measures, applicable to . . . fishing by vessels of the United States, which are. . . consistent with the national standards.”<sup>13</sup> The FMP must also “assess and specify . . . the maximum sustainable yield and optimum yield from[] the fishery” and “assess and specify . . . the capacity and the extent to which fishing vessels of the United States, on an annual basis, will harvest the optimum

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<sup>8</sup> *Id.* § 1801(a)(5), (7).

<sup>9</sup> *Id.* § 1801(a)(7).

<sup>10</sup> *Id.* § 1801(b)(4).

<sup>11</sup> *Id.* § 1802(13).

<sup>12</sup> *Id.* § 1853(a).

<sup>13</sup> *Id.* § 1853(a)(1).

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yield.”<sup>14</sup> The FMP must also set “annual catch limits” for the fishery that apply to fishing vessels of the United States.<sup>15</sup>

The FMP and its conservation measures must meet 10 national standards set forth by the MSA.<sup>16</sup> So, for example, National Standard 1 requires that the FMP “prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.”<sup>17</sup> National Standard 3 requires that, “[t]o the extent practicable, an individual stock of fish shall be managed *as a unit throughout its range*, and interrelated stocks of fish shall be managed as a unit or in close coordination.”<sup>18</sup> National Standard 4 requires that any allocation of fishing rights be “fair and equitable” to fishermen and “shall not discriminate between residents of different States.”<sup>19</sup>

Although NMFS may “delegate authority over a federal fishery to a state, [it] must do so expressly in an FMP.”<sup>20</sup> This may only occur if, at all times, the “State’s laws and regulations are consistent with such fishery management plan.”<sup>21</sup> And, of course, this may only occur if NMFS has first established an FMP under the *federal* statutory

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<sup>14</sup> *Id.* § 1853(a)(3), (a)(4)(A).

<sup>15</sup> *Id.* § 1851(a)(1)-(10).

<sup>16</sup> *Id.* § 1851.

<sup>17</sup> *Id.* § 1851(a)(1).

<sup>18</sup> *Id.* § 1851(a)(3) (emphasis added).

<sup>19</sup> *Id.* § 1851(a)(4).

<sup>20</sup> *United Cook*, 837 F.3d at 1063.

<sup>21</sup> 16 U.S.C. § 1856(a)(3)(B); *see id.* § 1853(b)(5) (allowing NMFS to incorporate state regulations that it has determined to be consistent with federal law into an FMP).

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principles set forth above (otherwise there would be no point of comparison to determine the consistency of any state regulations).

## **B. The Cook Inlet Commercial Salmon Fishery**

“Cook Inlet is one of the nation’s most productive salmon fisheries.”<sup>22</sup> The Cook Inlet sockeye run in particular has historically been world class, with the potential to produce millions of adult salmon returns annually.

Prior to statehood, the Cook Inlet salmon fishery was managed by the Department of Interior. As a condition of statehood, Alaska was allowed to manage the Cook Inlet salmon fishery provided that “the Alaska State Legislature has made adequate provision for the administration, management, and conservation of said resources in the broad *national interest*.”<sup>23</sup> In 1979, the Council produced an FMP for salmon fisheries in Alaska. For Cook Inlet, the Council admitted that the fishery was “technically” in federal waters, but allowed the State to continue to manage the fishery as a state-water fishery.<sup>24</sup> When this practice was challenged by Plaintiffs in 2010, NMFS amended the FMP to remove the Cook Inlet salmon fishery from the scope of the federal plan.<sup>25</sup>

During the last two decades, the commercial harvest in Cook Inlet has steadily declined. In the 1980s and 1990s, the sockeye harvest alone ranged consistently from 4 -

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<sup>22</sup> *United Cook*, 837 F.3d at 1057.

<sup>23</sup> Alaska Statehood Act, Pub. L. No. 85-508, § 6(e), 72 Stat. 339, 341 (1958) (emphasis added).

<sup>24</sup> *United Cook*, 837 F.3d at 1058.

<sup>25</sup> *Id.* at 1060.

9 million sockeye per year. The 10-year average annual commercial catch from 2008 to 2017 is now down to 2.7 million sockeye.<sup>26</sup> All three seasons since the Ninth Circuit issued its decision have been far below that average.<sup>27</sup> The commercial sockeye harvest was about 1.8 million in 2017 and 2019, and commercial sockeye harvest in 2018 was only 814,516, the worst harvest in over 40 years.<sup>28</sup> The total commercial harvest of all five salmon species in 2018 was approximately 1.3 million salmon, which was 61% less than the recent 10-year average annual harvest of 3.4 million fish.<sup>29</sup>

This period of historically low salmon harvest has coincided with the State's decision to gradually restrict the commercial fishery year after year to the point where most openings are severely geographically limited to a narrow band, which prevents the fishery from targeting areas where salmon congregate.<sup>30</sup> At the same time, the State has continued to increase "escapement" levels to record high (and likely unsustainable) levels.<sup>31</sup> Even with inflated escapement targets, the restrictions on commercial fishing are so significant that the State still regularly exceeds those escapement goals (e.g. the Kenai in-river sockeye goal has been exceeded nine out of the last 10 years).<sup>32</sup> This has resulted in severe financial hardship to the participants in the Cook Inlet salmon fishery,

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<sup>26</sup> Declaration of Erik Huebsch ("Huebsch Decl.") ¶ 30.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> *Id.* at ¶¶13-16; Declaration of Jeff Fox ("Fox Decl.") ¶¶ 7, 9, 12.

<sup>31</sup> Huebsch Decl. ¶ 15; Fox Decl. ¶¶ 15-17.

<sup>32</sup> Huebsch Decl. ¶ 15; Fox Decl. ¶ 10.

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as well as the businesses that rely on the commercial harvest. Twenty years ago, Cook Inlet had 23 major salmon processors; now it is down to four.<sup>33</sup>

**C. The Ninth Circuit Held That an FMP Is Required for the Cook Inlet Salmon Fishery**

Plaintiffs filed their complaint in this action on January 18, 2013, challenging NMFS's decision to remove the Cook Inlet salmon fishery from the Salmon FMP.<sup>34</sup> Plaintiffs alleged that the decision violated NMFS's statutory obligation to prepare an FMP "for each fishery under its authority that requires conservation and management."<sup>35</sup> For its part, NMFS argued, *inter alia*, that the Magnuson Act allows NMFS to "cede regulatory authority to a state over federal waters that require conservation and management simply by declining to issue an FMP" and "does not expressly require an FMP to cover an entire fishery."<sup>36</sup> On September 26, 2016, the Ninth Circuit issued an opinion rejecting NMFS's argument and siding with Plaintiffs.

The Ninth Circuit first disagreed with NMFS's argument that it could simply "defer" management to the State. The Court stated that there is no "deferral" exception to the Magnuson Act's mandate that NMFS must prepare an FMP for any fishery requiring conservation and management.<sup>37</sup> The Court explained that "the federal government cannot delegate management of the fishery to a State without a plan, because a Council is

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<sup>33</sup> Huebsch Decl. ¶ 29.

<sup>34</sup> *United Cook*, 837 F.3d at 1061.

<sup>35</sup> *Id.* (quoting 16 U.S.C. § 1852(h)(1)).

<sup>36</sup> *Id.* at 1062, 1064.

<sup>37</sup> *Id.* at 1062.

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required to develop FMPs for fisheries within its jurisdiction . . . and then to manage those fisheries ‘through’ those plans.”<sup>38</sup> And, the Court was also clear that a purpose of the FMP requirement was to ensure “that federal fisheries are to be governed by federal rules in the national interest, not managed by a state based on parochial concerns.”<sup>39</sup>

Next, the Court disagreed with NMFS’s argument that an FMP need not cover an entire fishery. The Court explained that “fishery is a defined term” and that NMFS’s view, if accepted, would allow it to “fulfill its statutory obligation by issuing an FMP applying to only a single ounce of water in that fishery.”<sup>40</sup> The Court stated that Congress “did not suggest that [the] Council could wriggle out of this requirement by creating FMPs only for selected parts of those fisheries, excluding other areas that required conservation and management.”<sup>41</sup> In short, the Ninth Circuit instructed that (1) NMFS must prepare an FMP consistent with the federal standards set forth in the Magnuson Act that reflect the national interest, and (2) the FMP must address the entire Cook Inlet fishery.

On remand to this Court, the parties agreed to entry of judgment that remanded the case to NMFS, with the Court retaining jurisdiction.<sup>42</sup> The parties ultimately agreed to allow state management to continue while NMFS and the Council developed a new FMP.

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<sup>38</sup> *Id.* at 1063.

<sup>39</sup> *Id.*

<sup>40</sup> *Id.* at 1064.

<sup>41</sup> *Id.*

<sup>42</sup> Dkt. 102.



This agreement was driven, in part, by NMFS's express threat that it would close the fishery entirely in federal waters if state management did not continue during remand.<sup>43</sup>

NMFS estimated that it would take the Council "approximately two years to develop and take final action on a new amendment to the Salmon FMP that addresses the Cook Inlet Area."<sup>44</sup>

#### **D. Actions on Remand Have Reached an Impasse**

Nearly three years have passed since the Ninth Circuit issued its ruling, and NMFS and the Council have made little progress toward the development of an FMP. There is now no prospect of moving the remand to a timely resolution that adheres to the Ninth Circuit's instructions.<sup>45</sup>

The problem is that NMFS and the Council are considering three proposals on remand, and *none* of those three proposals comply with the Ninth Circuit's holding or the MSA. These three proposals are summarized as follows and are addressed in more detail in Section IV.A *infra*.

**Alternative One** is to produce no FMP.<sup>46</sup> This is obviously not permissible under the Ninth Circuit's holding that an FMP is required.

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<sup>43</sup> See Declaration of James Balsiger (Dkt. 88) ¶¶ 18, 20.

<sup>44</sup> *Id.* at ¶ 21.

<sup>45</sup> Huebsch Decl. ¶¶ 26-27.

<sup>46</sup> Declaration of Jason Morgan ("Morgan Decl."), Ex. A at 35 (Discussion Paper by Council and NMFS).

**Alternative Two** would require NMFS to develop an FMP that defers to the State for the determination of essential federal requirements for the FMP, such as setting optimum yield (“OY”) for the Cook Inlet salmon fishery, setting annual catch limits, and making allocation decisions. For example, whereas the MSA requires the Council to set OY at the level that “will provide the greatest overall benefit to the Nation,”<sup>47</sup> under Alternative Two, the Council proposes to set OY at the level that reflects “the biological, economic, and social factors considered by” Alaska Board of Fish (the “Board”) and the Alaska Department of Fish and Game (“ADF&G”).<sup>48</sup> This contradicts the Ninth Circuit’s instruction that NMFS and the Council must develop an FMP according to “federal rules in the national interest[.]” so that the fishery is “not managed by a state based on parochial concerns.”<sup>49</sup>

**Alternative Three** would require NMFS to carve out and establish a separate federal fishery within the EEZ, and then create an FMP that would address only the federal part of the fishery. This federal fishery would occur if, and only if, the state allows it; if the state decides to “allocate” the entire harvestable surplus in state waters, Alternative Three closes the separate federal fishery.<sup>50</sup> This subservient approach plainly

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<sup>47</sup> 16 U.S.C. § 1802(33)(A).

<sup>48</sup> Morgan Decl., Ex. A at 35, 68.

<sup>49</sup> *United Cook*, 837 F.3d at 1063.

<sup>50</sup> Morgan Decl., Ex. A at 34, 58.

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elevates parochial concerns over national interests, and does not comply with the letter or spirit of the MSA or Ninth Circuit's instructions.

The Council created a stakeholder group (the "Salmon Committee") composed of commercial fishing interests and tasked the Salmon Committee with developing recommendations for the Salmon FMP to implement one of the three alternatives outlined above.<sup>51</sup> But many of the members of the Salmon Committee (including UCIDA members) expressed a fundamental disagreement over the scope of the FMP, as limited by the three alternatives.<sup>52</sup>

Specifically, UCIDA believes that, under the Ninth Circuit's order, the Council and NMFS are required to manage Cook Inlet salmon stocks as a unit throughout their range, subject to the requirements of the Magnuson Act and its national standards, not the parochial interest of the State.<sup>53</sup> The Council and NMFS disagree, stating that "[t]hese concepts are not supported by the Council," and instructed the Salmon Committee to focus on the federal portion of the fishery and accept one of the three alternatives above.<sup>54</sup> One Council member directed UCIDA members to stop "debating those kinds of issues," and "to play within the boundaries of the ballfield that is the Magnuson-

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<sup>51</sup> Huebsch Decl. ¶ 25.

<sup>52</sup> *Id.* ¶ 26.; *see also* Morgan Decl., Ex. B at 5-6 (transcript of Council proceedings).

<sup>53</sup> Huebsch Decl. ¶ 26.

<sup>54</sup> Morgan Decl., Ex. C at 4 (Meeting Summary, April 1, 2019).

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Stevens Act.”<sup>55</sup> UCIDA brought this issue to the Court’s attention when it first arose almost two years ago,<sup>56</sup> and has endeavored through written comments and testimony to affect change through the administrative process.<sup>57</sup> NMFS has only become more entrenched with its narrow reading of the MSA and the Ninth Circuit’s opinion, issuing a legal “memorandum” to the Council on the scope of the FMP.<sup>58</sup>

There is a clear and distinct “impasse” between UCIDA, on one hand, and NMFS and the Council, on the other hand, regarding the “boundaries of the ballfield.”<sup>59</sup> And NMFS and the Council are dead wrong. The “boundaries of the ballfield”—as established by the Ninth Circuit and the Magnuson Act—plainly do not allow NMFS to produce (1) no FMP, (2) a shell FMP that allows the State to “fill in the blanks” for certain statutorily mandated federal FMP requirements, or (3) an FMP that provides manage guidance only the portion of the fishery that occurs in the EEZ. Yet NMFS and the Council are indisputably pursuing *only* these three alternatives, and accordingly, the end result will *inevitably* violate the Ninth Circuit’s order, unless this Court intervenes now.

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<sup>55</sup> *Id.*, Ex. B at 17.

<sup>56</sup> *See* Dkt 112 (letter to Judge Burgess).

<sup>57</sup> *See* Morgan Decl., Ex. D at 10, 28 (comment letters).

<sup>58</sup> *Id.* Ex. D at 1 (NMFS memorandum).

<sup>59</sup> Huebsch Decl. ¶ 27.

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### III. AUTHORITY TO GRANT RELIEF

A federal court has jurisdiction to “manage its proceedings, vindicate its authority, and effectuate its decrees.”<sup>60</sup> This general rule also extends to mandates issued to a federal agency,<sup>61</sup> and the agencies must comply with both the “letter and spirit” of the Court’s order.<sup>62</sup> Thus, “an administrative agency is bound on remand to apply the legal principles laid down by the reviewing court.”<sup>63</sup> “Should an agency neglect the orders of a federal court, an order enforcing the original mandate is in fact ‘particularly appropriate.’”<sup>64</sup>

### IV. ARGUMENT

#### A. NMFS and the Council Are Not Complying with the Ninth Circuit’s Holding

The remand process has stalled because NMFS and the Council are not following the Ninth Circuit’s instructions or the requirements of the MSA. There are two basic problems with the Council’s approach to the FMP. *First*, it improperly defers essential decision-making to the State of Alaska. *Second*, it improperly narrows the scope of the Council’s obligations to federal waters rather than providing management goals and

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<sup>60</sup> *Kelly v. Wengler*, 822 F.3d 1085, 1094 (9th Cir. 2016) (quoting *Kokkonen v. Guardian Life Ins. Co. of Am.*, 511 U.S. 375, 378 (1994)).

<sup>61</sup> *California v. U.S. Dep’t of Labor*, 155 F. Supp. 3d 1089, 1095-96 (E.D. Cal. 2016) (citing *Flaherty v. Pritzker*, 17 F. Supp. 3d 52, 55 (D.D.C. 2014)).

<sup>62</sup> *Ischay v. Barnhart*, 383 F. Supp. 2d 1199, 1214 (C.D. Cal. 2005), [Cite].

<sup>63</sup> *Id.* at 1213 (citing *Sullivan v. Hudson*, 490 U.S. 877, 886 (1989)).

<sup>64</sup> *California*, 155 F. Supp. 3d at 1096 (citation omitted); *see also N.C. Fisheries*, 152 F. Supp. 2d at 882.

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objectives for the entire fishery. Without instruction from this Court, the remand will ultimately produce an FMP that does not comply with the requirements of the MSA.

Starting with improper deferral, the Ninth Circuit made clear that NMFS could not defer its statutory obligations to the State. NMFS is required to produce a plan to manage the Cook Inlet salmon fishery subject to *national standards*, not state parochial concerns, and NMFS cannot “shirk” those duties by deferring to the State.<sup>65</sup> The MSA allows NMFS and the Council to delegate implementation of an FMP to a state under the auspices of a compliant FMP, but requires the Council and NMFS—not the State—to establish the conservation and management measures for that FMP, specify the OY and maximum sustained yield for the fishery, establish the annual catch limits for that fishery, ensure that the allocation decision is fair and equitable, and otherwise provide instruction as to how to manage the fishery consistent with national standards.<sup>66</sup>

However, Alternative Two simply defers these essential decisions to the State. As to the core obligation to set OY and maximum sustained yield for the fishery (*see* National Standard 1 and 16 U.S.C. § 1853(a)(1)), under Alternative Two, NMFS and the Council would let the Board determine OY to “reflect[] the biological, economic, and social factors considered by the [Alaska] Board [of Fish] and ADF&G.”<sup>67</sup> Similarly,

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<sup>65</sup> *United Cook*, 837 F.3d at 1063.

<sup>66</sup> *See, e.g.*, 50 C.F.R. § 600.310(f)(4)(iii); *supra* Section II.A; *United Cook*, 837 F.3d at 1062-64.

<sup>67</sup> Morgan Decl., Ex. A at 68.

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Alternative Two defers the determination about a fair and equitable allocation of the fishery (National Standard 4) to the State by establishing fishing seasons to meet the State’s “economic and social objectives.”<sup>68</sup> As to the mandatory obligation to set “annual catch limits” (*see* 16 U.S.C. § 1853(a)(15)), Alternative Two would require NMFS and the Council to use “escapement goals and management plan objectives established by the state,” which in turn are based on the State’s assessment (not NMFS’s assessment) of policy objectives, OY, and allocation decisions.<sup>69</sup> Accordingly, under Alternative Two, the fishery will be governed by state “parochial concerns,” which is directly contrary to the Ninth Circuit’s holding and to the Magnuson Act.<sup>70</sup>

As to the scope of the FMP, the Magnuson Act requires NMFS to establish conservation and management measures for a “fishery” that are “applicable to foreign fishing and fishing by vessels of the United States.”<sup>71</sup> The “United States” means “all the States thereof.”<sup>72</sup> The term “fishery,” as the Ninth Circuit explained, is “a defined term”<sup>73</sup> that means “one or more stocks of fish which can be treated as a unit for purposes of conservation and management.”<sup>74</sup> National Standard 3 expressly states that NMFS has an obligation to manage each fishery (including the salmon stocks in Cook Inlet) “as a

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<sup>68</sup> *Id.* at 42.

<sup>69</sup> *Id.* at 43.

<sup>70</sup> *United Cook*, 837 F.3d at 1063.

<sup>71</sup> 16 U.S.C. § 1853(a)(1).

<sup>72</sup> *Id.* § 1802(45).

<sup>73</sup> *United Cook*, 837 F.3d at 1064.

<sup>74</sup> 16 U.S.C. § 1802(13).

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unit throughout its range.”<sup>75</sup> And, NMFS’s interpretive regulations confirm that “[t]he geographic scope of the fishery, for planning purposes, should cover the entire range of the stock(s) of fish, and not be overly constrained by political boundaries.”<sup>76</sup> As one court explained, “[w]hen a stock of fish is managed in the same manner throughout its geographical range, National Standard No. 3 is satisfied.”<sup>77</sup>

Consistent with these legal requirements, the Ninth Circuit instructed:

When Congress directed each Council to create an FMP “for each fishery under its authority that requires conservation and management,” *id.* § 1852(h)(1), it did not suggest that a Council could wriggle out of this requirement by creating FMPs only for selected parts of those fisheries, excluding other areas that required conservation and management.<sup>[78]</sup>

In so instructing, the Ninth Circuit disapproved the piecemeal management of a fishery in which some parts of the fishery would be managed under the national standards and other parts would not.

However, this is precisely what NMFS and the Council are attempting to do. Alternative Three would carve out a federal-only portion of the fishery, manage the fishery only while the salmon are in federal waters, and give the state *carte blanche* with respect to those same fish in state waters, *including authority to allocate the entire harvestable surplus to state interests*. Both Alternatives Two and Three improperly

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<sup>75</sup> *Id.* § 1851(a)(3).

<sup>76</sup> 50 C.F.R. § 600.320(b).

<sup>77</sup> *Or. Trollers Ass’n v. Gutierrez*, 452 F.3d 1104, 1121 (9th Cir. 2006).

<sup>78</sup> *United Cook*, 837 F.3d at 1064.

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narrow the scope of inquiry for conservation and management measures in the FMP. NMFS and the Council are clear that the FMP will only provide conservation and management measures (if at all) for fishing in the EEZ.<sup>79</sup> NMFS and the Council further contend that fishing in federal waters must be subservient to the State's fishery management decisions, and that "the EEZ portion of the fishery would only occur if there was a harvestable surplus after accounting for removals in State waters."<sup>80</sup>

NMFS and the Council's position is that they cannot control, restrict, or even influence the state management in state waters.<sup>81</sup> But that is precisely what National Standard 3 requires: management of a stock "as a unit . . . throughout its range."<sup>82</sup> The plan sets the standard for the entire fishery, and NMFS can delegate management of implementation of that plan to the state (under appropriate conditions). NMFS's position overlooks its obligations to both (1) develop an FMP that provides management goals, objectives, and measures for a stock *throughout its range* and (2) *enforce* the measures of that FMP *in state waters*.<sup>83</sup> It may well be that NMFS needs the State's cooperation in

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<sup>79</sup> Morgan Decl., Ex. A at 40 (Alternative 2); *id.* at 55 (Alternative 3).

<sup>80</sup> *Id.* at 34.

<sup>81</sup> *Id.*

<sup>82</sup> 16 U.S.C. § 1851(a)(3).

<sup>83</sup> For example, regulations for setting "annual catch limits" ("ACLs") through FMPs under the MSA, while "recogniz[ing] that Federal management is limited to the portion of the fishery under Federal authority," state that "[f]or stocks or stock complexes that have harvest in state or territorial waters, FMPs and FMP amendments *should include an ACL for the overall stock* that may be further divided. For example, the overall ACL could be divided into a Federal-ACL and state-ACL." 50 C.F.R. § 600.310(f)(4)(iii) (emphasis added).

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State waters to carry out an FMP (just as it may need cooperation from foreign nations in international waters), and the MSA provides NMFS with authority to encourage state cooperation and, in certain circumstances, supersede state authority when cooperation is not forthcoming.<sup>84</sup> But the fact that NMFS may need cooperation to *enforce* an FMP does not excuse NMFS or the Council from producing an FMP that contains the required measures to manage the stock “throughout its range.” Without those measures, there is nothing for which NMFS can seek the State’s cooperation.

NMFS is heading down the opposite path. By disclaiming any ability to provide management objectives or measures beyond the borders of the EEZ, NMFS has made clear that any result (whether Alternative One, Two, or Three) will result in the State developing the standards for, and managing, the portions of the fishery that occur in State waters and federal management of the fishery in federal waters only, with the federal fishery occurring if, and only if, the State allows fishing in federal waters.<sup>85</sup> This would result in a situation that is virtually no different than when this litigation began and is fundamentally unworkable.<sup>86</sup> NMFS’s plan for the remand is contrary to both the letter and spirit of the Ninth Circuit’s ruling, and accordingly, UCIDA asks the Court to issue a declaratory ruling to get this remand back on track.

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<sup>84</sup> 16 U.S.C. § 1856(b)(1).

<sup>85</sup> *See supra* Section II.D.

<sup>86</sup> Fox Decl. ¶ 14.

**B. Interim Relief Is Necessary to Ensure Compliance with the Prior Holding in This Case and to Prevent Further Impairment to the Fishery and Commercial Fishing Interests**

In light of the above failures, an order “enforcing the original mandate is in fact ‘particularly appropriate.’”<sup>87</sup> Specifically, UCIDA asks the Court to issue an order declaring that (1) the FMP must provide management goals, objectives, and measures throughout the entire range of the Cook Inlet salmon stocks, including state waters, as required by the Magnuson Act; and (2) NMFS and the Council may not create an FMP that is subservient to or defers to state management goals and objectives for the Cook Inlet salmon fishery, but instead must ensure the entire fishery is managed to meet the MSA’s national standards.

In addition to declaratory relief, UCIDA requests that the Court set a hard deadline on NMFS and the Council to complete the FMP. “Ninth Circuit precedent expressly permits imposition of deadlines on the remand process.”<sup>88</sup> A deadline here is urgently needed because Plaintiffs’ members are suffering significant financial injury under the State’s continued management of the fishery without the necessary guidance of an

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<sup>87</sup> *California*, 155 F. Supp. 3d at 1096 (citation omitted).

<sup>88</sup> *Intertribal Sinkyone Wilderness Council v. Nat’l Marine Fisheries Serv.*, No. 1:12-CV-00420 NJV, 2013 WL 8374150, at \*2 (N.D. Cal. Nov. 26, 2013); *see also Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 937 (9th Cir. 2008) (it is “clearly permissible” to “impose a deadline for the remand proceedings”). Under both Federal Rule of Civil Procedure 65 and the All Writs Act, this Court also has the derivative authority to enforce its orders on the Council, even though it is not a party. *See Fed. R. Civ. P. 65(d)(2); All Writs Act*, 28 U.S.C. § 1651(a).

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FMP.<sup>89</sup> In the three seasons that the state has managed the fishery since the Ninth Circuit's mandate, Plaintiffs' members have suffered serious financial harms due to (1) restrictions by the state on fishing in the EEZ (and elsewhere in the Cook Inlet); and (2) reduced salmon run sizes precipitated by the State's management measures that do not comply with the Magnuson Act.<sup>90</sup> These injuries will continue unless and until NMFS approves an FMP that requires management of the fishery consistent with the Magnuson Act. Plaintiffs' members cannot afford further delays or wait indefinitely for NMFS to issue an FMP only to have to challenge the FMP for failure to comply with the Ninth Circuit's instructions in 2016.<sup>91</sup>

Accordingly, UCIDA asks for an order compelling the Council to complete production of the FMP within six months and NMFS to issue final regulations implementing the FMP prior to the start of the 2020 fishing season (late June 2020). This deadline places no substantial burden on NMFS or the Council. By statute, NMFS should have had its plan completed decades ago.<sup>92</sup> Any burden on NMFS in completing this long overdue task is outweighed by hardships the fishing community has suffered, and will continue to suffer, without management of the Cook Inlet salmon fishery in a

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<sup>89</sup> Huebsch Decl. ¶¶ 29-33.

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> *United Cook*, 837 F.3d at 1059.

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manner consistent with the MSA’s national standards under an FMP.<sup>93</sup> In the alternative, if NMFS cannot complete the FMP process by the beginning of the 2020 salmon fishing season, UCIDA requests that the Court order the parties (including intervenor State of Alaska) to negotiate an orderly execution of the 2020 fishing season as an interim measure that will ensure an orderly fishery and reasonable fishing opportunities for Plaintiffs’ members until an FMP is put in place.

Furthermore, UCIDA requests that the Court appoint a special master to oversee compliance with the remand and, if necessary, to oversee negotiation of an orderly fishery for 2020 if no FMP is completed. Federal Rule of Civil Procedure 53(a)(1)(C) permits a court to appoint a master to “address . . . posttrial matters that cannot be effectively and timely addressed by an available . . . judge of the district.” Once appointed, a master may “regulate . . . proceedings,” and “take all appropriate measures to perform the assigned duties fairly and efficiently,” including the authority to issue a “report” or “order” if so directed by the court.<sup>94</sup> This inherent authority, too, is codified in the All Writs Act.<sup>95</sup> With respect to post-remand administrative proceedings, a master,

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<sup>93</sup> Huebsch Decl. ¶¶ 29-33.

<sup>94</sup> Fed. R. Civ. P. 53(c)-(e).

<sup>95</sup> *See Nat’l Org. for the Reform of Marijuana Laws v. Mullen*, 828 F.2d 536, 544 (9th Cir. 1987) (“The appointment of a master to monitor compliance with the preliminary injunction . . . validly applies the All Writs Act.”).

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in such context often termed a “special master,” may be appointed “to oversee [agency] compliance with continuing court orders” and “implement the decree.”<sup>96</sup>

The Court’s prior order sought to ensure compliance with periodic status updates.<sup>97</sup> Those status updates have proven insufficient to keep the remand on track, and the current Council process is presently going nowhere. Members of the Council have indicated that they are willing to drag out the process until Plaintiffs “stop debating those kinds of issues” and simply acquiesce to the Council’s (erroneous) position on the scope and function of the FMP.<sup>98</sup> Accordingly, a special master is appropriate to “observe” NMFS and the Council, and “report to the court any policies or practices [he or she] believes may violate the letter or spirit of any term of the” order.<sup>99</sup>

## V. CONCLUSION

For the foregoing reasons, UCIDA’s motion should be granted. The current remand is now nearly three years in the making with no end in sight. In the interim, the commercial fishing industry has suffered through disastrous fishing seasons under

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<sup>96</sup> *Ruiz v. Estelle*, 679 F.2d 1115, 1161 (5th Cir. 1982); *see, e.g., Hook v. Ariz. Dep’t of Corr.*, 107 F.3d 1397, 1403 (9th Cir.) (special master to oversee compliance with court-ordered prison reforms “after court monitoring alone had been demonstrated to be inadequate”), *as amended on reh’g and reh’g en banc* (Apr. 22, 1997); *Halderman v. Pennhurst State Sch. & Hosp.*, 446 F. Supp. 1295, 1307-11 (E.D. Pa. 1977) (special master to monitor compliance with injunction ordering state hospital reforms).

<sup>97</sup> Dkt. 102 ¶ 2.

<sup>98</sup> Morgan Decl., Ex. B at 17.

<sup>99</sup> *Mullen*, 828 F.2d at 539, 545.

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continued state management. Judicial intervention is urgently needed to get the remand on track and moving toward a fully compliant FMP.

*I certify that this motion contains 5,686 words, and is in compliance with LCR 7.4(a).*

Respectfully submitted, September 4, 2019.

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**CERTIFICATE OF SERVICE**

I hereby certify that on September 4, 2019 I filed a copy of the foregoing document, *Motion to Enforce Judgment*, was served electronically on the below parties.

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\_\_\_\_\_  
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# EXHIBIT B

Case No. 20-35029

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**IN THE UNITED STATES COURT OF APPEALS  
FOR THE NINTH CIRCUIT**

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UNITED COOK INLET DRIFT ASSOCIATION, *et al.*,  
Plaintiffs-Appellees,

v.

NATIONAL MARINE FISHERIES SERVICE; REBECCA BLANK, *et al.*,  
Defendants-Appellants,

and

STATE OF ALASKA,  
Intervenor-Defendant-Appellant.

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Appeal from the United States District Court, District of Alaska, District Court  
No. 3:13-cv-00104-TMB

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**OPENING BRIEF FOR UNITED COOK INLET DRIFT ASSOCIATION  
AND COOK INLET FISHERMAN'S FUND**

---

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**CORPORATE DISCLOSURE STATEMENT**

Pursuant to Federal Rule of Appellate Procedure 26.1, the undersigned counsel states that Appellant United Cook Inlet Drift Association has no parent corporation and no publicly held entity owns 10% or more of its stock.

Pursuant to Federal Rule of Appellate Procedure 26.1, the undersigned counsel states that Appellant Cook Inlet Fisherman's Fund has no parent corporation and no publicly held entity owns 10% or more of its stock.

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## I. INTRODUCTION

Plaintiffs-Appellants (collectively “UCIDA”) seek to enforce this Court’s decision in *United Cook Inlet Drift Ass’n v. Nat’l Marine Fisheries Serv.*, 837 F.3d 1055 (9th Cir. 2016) (“*United Cook*”).<sup>1</sup> In 2012, the National Marine Fisheries Service (“NMFS”) and its advisory body, the North Pacific Fishery Management Council (the “Council”), decided that they wanted nothing to do with managing the salmon fishery in Cook Inlet. Although the Magnuson-Stevens Fishery Conservation and Management Act (the “Magnuson Act” or “MSA”) expressly requires NMFS to prepare a fishery management plan (“FMP”) for “each fishery under its authority that requires conservation and management” (16 U.S.C. § 1852(h)(1)), NMFS decided to carve out three salmon fisheries (including Cook Inlet) from the existing salmon FMP and turn over their management to the State of Alaska (“State”). NMFS justified its actions by reading the word “federal” into § 1852(h)(1), just before “conservation and management,” reasoning that if state management was good enough, there was no need for “federal” conservation and management.

In 2016, this Court rejected that reading in *United Cook*, refusing NMFS’s request to “insert the word ‘federal’ into § 1852(h)(1) before the phrase

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<sup>1</sup> See Excerpts of Record (“ER”) 17.

‘conservation and management.’” *United Cook*, 837 F.3d at 1062. The Court further rejected NMFS’s argument that the Magnuson Act “does not expressly require an FMP to cover an entire fishery,” because “fishery” is a “defined term.” *Id.* at 1064. As this Court explained, Congress “did not suggest that a Council could wriggle out of this requirement by creating FMPs only for selected parts of those fisheries, excluding other areas that required conservation and management.” *Id.* The Court reversed the judgment of the district court, and the district court remanded the decision to NMFS. ER 13, 36.

It has been more than three years since this Court’s decision in *United Cook*, and there is still no FMP in sight for the Cook Inlet salmon fishery. Worse still, NMFS and the Council are right back to the same bag of tricks this Court already rejected. As before, they are trying to carve up the “fishery” into smaller parts, and provide conservation and management for only selected parts of the fishery. And as before, they employ the same ruse, attempting to insert “federal” into § 1852(h)(1), this time in front of the word “fishery.”

Based on their statutory re-write, NMFS and the Council are producing an FMP that addresses only the “federal” fishery, and makes that federal fishery subservient to the “state” fishing interests. This is unlawful, just as it was before. “Fishery” is a “defined term.” *United Cook*, 837 F.3d at 1064. A “fishery” is “one or more stock of fish which can be treated as a unit for purposes of conservation

and management.” 16 U.S.C. § 1802(13). There are no separate “federal” and “state” stocks of salmon in Cook Inlet; they are quite literally the same salmon that naturally swim across jurisdictional boundaries.

In addition to impermissibly divvying up the fishery, NMFS also ignores *United Cook* by attempting to cede its obligation to regulate the fishery to the State. This Court rejected NMFS’s attempt to “defer” to State management, explaining that Congress wanted fisheries under federal jurisdiction to be “governed by federal rules in the national interest, not managed by a state based on parochial concerns.” *United Cook*, 837 F.3d at 1063. But as detailed below, *all of the alternatives* under consideration on remand do precisely that. They once again are attempting to allow the State, rather the Magnuson Act, to decide and dictate the key components of fishery management: how many fish may be caught; who gets to catch the fish; and where, when, and how fishing may occur.

UCIDA spent the last three years embroiled in the administrative process trying to steer NMFS and the Council in the lawful direction ordered by this Court, to no avail. NMFS went so far as to issue a written legal opinion to the Council stating (incorrectly) that this Court’s decision in *United Cook* does *not* require an FMP for the entire fishery. ER 311. The Council has explicitly stated that it will follow NMFS’s flawed advice and not issue an FMP for the entire fishery. ER 310. In other words, without judicial intervention, *any result* of the ongoing

remand process will produce an FMP amendment that violates *United Cook* and the Magnuson Act. Equally troubling, it will take *at least* two more years of administrative process for this unlawful result to be achieved.

While this futile process continues, the commercial fishery will be driven to extinction by the State as it continues to mismanage the fishery with no federal input or oversight. In the first three years after the decision in *United Cook* (2017, 2018, and 2019), UCIDA's members experienced three disastrous commercial fishing seasons, including the single worst commercial fishing season in nearly 50 years. ER 362-64. Fishing season 2020 projects to be as bad or worse. ER 364. Many of UCIDA's members face insolvency because they are not being allowed to catch enough salmon to even meet their fishing expenses (ER 357, 363-64), forced to sit idle while they watch State allow *millions* of surplus salmon go unharvested every year. *See* ER 321-24, 344, 438. Seafood processors are pulling out of Cook Inlet (or going bankrupt) at an alarming rate. ER 361-62. UCIDA cannot wait two more years (or longer) only to get an FMP that violates *United Cook*, and then start anew with another judicial review and another remanded administrative process all over again. The Cook Inlet commercial salmon fishing industry will collapse long before that Sisyphean process resets.

With no other options, UCIDA went back to the district court for help. The district court's remand order retained jurisdiction, and, accordingly, UCIDA

sought to enforce the judgment. Specifically, UCIDA explained that NMFS and the Council were not complying with this Court's holding in *United Cook*, and that NMFS and the Council were dragging their feet in developing an FMP. UCIDA requested, *inter alia*, a judicial instruction that the FMP must cover the entire fishery (consistent with *United Cook*) and a deadline for completion of the FMP prior to fishing season 2020. ER 4. If such an FMP could not be timely produced, UCIDA alternatively asked for an order requiring the parties to negotiate interim relief for 2020, and as appropriate, a special master to aid in those negotiations. *Id.*

The district court agreed that the Ninth Circuit's decision requires NMFS and the Council "to create an FMP for each, **entire** fishery under its authority." ER 2 (emphasis added). The district court also agreed that the new salmon FMP had to be "compliant with the Ninth Circuit's decision" in *United Cook*. ER 12. The district court, however, declined to order NMFS to produce an FMP that covers the **entire** fishery (even though it acknowledged that is what the Ninth Circuit required) because that was not one of the "terms of the Judgment" issued by the district court. ER 12. In other words, because the Ninth Circuit's "entire fishery" requirement did not appear in the four corners of the *district court's judgment*, the district court refused to enforce this Court's explicit holding. Furthermore, the district court erroneously concluded that it had no authority to grant relief to UCIDA until NMFS completes its remand and there is *an additional*



final action to review. ER 12. The only relief the district court was willing to grant is to give NMFS *another* two years (until fishing season 2022) to have an FMP in place. That is no relief at all given the ongoing irreparable injuries that UCIDA's members face in the absence of a compliant FMP.

The decision below should be reversed and the relief requested by UCIDA should be granted. The decision in *United Cook* is binding law of the case and the mandate of this Court, and the district court was required to enforce that holding. It would be completely inequitable to require UCIDA to undertake another multi-year litigation campaign to obtain the relief this Court already granted—all because NMFS and the Council refuse to comply with this Court's order. UCIDA respectfully asks that the Court set forth appropriate remedial orders, as detailed below, to get the remand on track and minimize ongoing harm to UCIDA's members in the interim.

## II. JURISDICTIONAL STATEMENT

The district court below had subject matter jurisdiction pursuant to 28 U.S.C. § 1331, and jurisdiction over the Federal Defendants-Appellees under 16 U.S.C. § 1855(f) and chapter 7 of title 5 of the United States Code.

The district court issued its order on UCIDA's Motion to Enforce on January 6, 2020. UCIDA timely filed a notice of appeal on January 14, 2020. This Court has jurisdiction over that appeal under 28 U.S.C. § 1291. *See Armstrong v.*

*Schwarzenegger*, 622 F.3d 1058, 1064-65 (9th Cir. 2010) (invoking appellate “jurisdiction over post-judgment orders, such as a district court might enter pursuant to the jurisdiction it has retained to enforce a prior order”); *see, e.g., Thompson v. Potashnick Constr. Co.*, 812 F.2d 574, 575-76 (9th Cir. 1987) (holding order dismissing petition to enforce was final and appealable); *Americana Fabrics, Inc. v. L & L Textiles, Inc.*, 754 F.2d 1524, 1528 (9th Cir. 1985) (same). In addition, or in the alternative, to the extent the present appeal stems from an order granting or declining to grant injunctive relief, this Court has jurisdiction under 28 U.S.C. § 1292(a)(1). *See, e.g., United States v. Gila Valley Irrigation Dist.*, 31 F.3d 1428, 1441-42 (9th Cir. 1994) (reviewing order that granted interim injunction).

### **III. STATEMENT OF ISSUES PRESENTED FOR REVIEW**

**Issue No. 1:** Whether NMFS and the Council are violating the express requirements of the Ninth Circuit’s Decision in *United Cook*?

**Issue No. 2:** Whether the district court erred in refusing to require NMFS and the Council to comply with the mandate in *United Cook*?

**Issue No. 3:** Whether, under these circumstances, interim relief is appropriate pending issuance of a FMP for the Cook Inlet salmon fishery?

Relevant statutory and regulatory provisions are reproduced in the Addendum.

#### IV. STATEMENT OF THE CASE

##### A. **The Magnuson-Stevens Fishery Conservation Act Provides the Nation’s Statutory Fishery Management Framework.**

The MSA “creates a ‘national program for the conservation and management of the fishery resources of the United States.’” *United Cook*, 837 F.3d at 1057 (quoting 16 U.S.C. § 1801(a)(6)). The MSA calls out anadromous stocks like salmon as an important national resource. 16 U.S.C. § 1801(a)(1) (“The fish off the coasts of the United States . . . and the anadromous species which spawn in United States rivers or estuaries, constitute valuable and renewable natural resources.”); *id.* § 1802(1) (“The term ‘anadromous species’ means species of fish which spawn in fresh or estuarine waters of the United States and which migrate to ocean waters.”). The “declared” purpose of the MSA is to “take immediate action to conserve and manage the fishery resources found off the coasts of the United States, *and* the anadromous species,” like salmon. *Id.* § 1801(b)(1) (emphasis added).

The MSA’s purpose is to put these national fishery resources under “sound management” and “to realize the full potential of the Nation’s fishery resources.” *Id.* § 1801(a)(5)-(7). This includes both conservation measures to prevent overfishing, as well as a “national program for the development of fisheries which are underutilized or not utilized by the United States fishing industry.” *Id.* § 1801(a)(7).

The primary mechanism for providing that sound management is the development of an FMP “which will achieve and maintain, on a continuing basis, the optimum yield from each fishery.” *Id.* § 1801(b)(4). The MSA defines “fishery” to mean “one or more stocks of fish which can be treated as a unit for purposes of conservation and management” and “any fishing for such stocks.” *Id.* § 1802(13).

The MSA prescribes required elements of every FMP. *Id.* § 1853(a). Among other things, an FMP must include “conservation and management measures, applicable to . . . fishing by vessels of the United States, which are . . . consistent with the national standards.” *Id.* § 1853(a)(1). The FMP must also “assess and specify . . . the maximum sustainable yield and optimum yield from[] the fishery” and “assess and specify . . . the capacity and the extent to which fishing vessels of the United States, on an annual basis, will harvest the optimum yield.” *Id.* § 1853(a)(3), (a)(4)(A). The FMP must also set “annual catch limits” for the fishery that apply to fishing vessels of the United States. *Id.* § 1853(a)(15).

The FMP and its conservation measures must meet 10 national standards (each a “National Standard”) set forth by the MSA. *Id.* § 1851(a)(1)-(10). So, for example, National Standard 1 requires that the FMP “prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.” *Id.* § 1851(a)(1). National Standard 3 requires

that, “[t]o the extent practicable, an individual stock of fish shall be managed *as a unit throughout its range*, and interrelated stocks of fish shall be managed as a unit or in close coordination.” *Id.* § 1851(a)(3) (emphasis added). National Standard 4 requires that any allocation of fishing rights be “fair and equitable” to fishermen and “shall not discriminate between residents of different [s]tates.” *Id.* § 1851(a)(4).

The MSA gives NMFS “exclusive fishery management authority” over “all fish” within the exclusive economic zone (“EEZ”). *Id.* § 1811(a). The MSA also gives NMFS “exclusive fishery management authority” over “[a]ll anadromous species throughout the migratory range of such species beyond the exclusive economic zone.” *Id.* § 1811(b). States typically retain concurrent “jurisdiction” over fishing activities within the state, so long as the state fishing program does not “substantially and adversely affect” the implementation of the FMP for that fishery. *Id.* § 1856(a)(1), (b).<sup>2</sup>

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<sup>2</sup> The State often claims sovereign “ownership” of salmon returning to State rivers and streams. But this is “a fiction” that has been put to rest by the Supreme Court. *Hughes v. Oklahoma*, 441 U.S. 322, 334 (1979) (internal quotations omitted). The State has no more property interest in salmon than “a hopeful fisherman” does, and the proper inquiry is whether a state is exercising its police powers “in conformity with the federal laws and Constitution.” *Id.* (internal quotations omitted); *see also Idaho ex rel. Evans v. Oregon*, 462 U.S. 1017, 1025, (1983) (“no State has a pre-existing legal right of ownership in the fish”).

The MSA expressly constrains the authority of a state to manage fisheries in the EEZ. Although NMFS may “delegate” the implementation of a FMP to a state, it “must do so expressly in an FMP.” *United Cook*, 837 F.3d at 1063. This may occur only if, at all times, the “[s]tate’s laws and regulations are consistent with such fishery management plan.” *Id.* § 1856(a)(3)(B); *see id.* § 1853(b)(5) (allowing NMFS to incorporate state regulations that it has determined to be consistent with federal law into an FMP); *see also Hughes*, 441 U.S. at 334 (state regulatory authority over fish must be “in conformity with the federal laws”). And, of course, this may occur only once NMFS has first established an FMP under the *federal* statutory principles set forth above (otherwise there would be no point of comparison to determine the consistency of any state regulations).

**B. Once Famed for Its Productivity, the Cook Inlet Commercial Salmon Fishery Now Withers Under State Mismanagement.**

“Cook Inlet is one of the nation’s most productive salmon fisheries.” *United Cook*, 837 F.3d at 1057. Cook Inlet’s sockeye run in particular has historically been world class, producing millions of adult salmon returns annually. ER 378-379 (*e.g.*, 9.1 million sockeye harvested in 1992; 9.4 million sockeye harvested in 1987). And unlike many of our nation’s fisheries that are fully utilized (or even overutilized), Cook Inlet salmon stocks are largely underutilized. *See, e.g.*, ER 334 (figure showing 20,000,000 return of pink salmon, with a commercial catch of only 642,754 fish, and 15,280,450 *pink salmon not utilized*, and not needed for

biological purposes); ER 333 (1.5 million coho salmon not utilized); ER 334 (showing nearly 1 million chum not utilized).

Prior to statehood, the Cook Inlet salmon fishery was managed by the Department of the Interior. As a condition of statehood, Alaska was allowed to manage the Cook Inlet salmon fishery provided that “the Alaska State Legislature has made adequate provision for the administration, management, and conservation of said resources in the broad *national interest*.” Alaska Statehood Act, Pub. L. No. 85-508, § 6(e), 72 Stat. 339, 341 (1958) (emphasis added). In 1979, the Council produced an FMP for salmon fisheries in Alaska. For Cook Inlet, the Council admitted that the fishery was “technically” in federal waters, but allowed the State to continue to manage the fishery as a state-water fishery. *United Cook*, 837 F.3d at 1058. When this practice was questioned by UCIDA in 2010, NMFS dodged its obligations by amending the FMP to remove the Cook Inlet salmon fishery from the scope of the federal plan altogether. *Id.* at 1060; ER 357-59.

During the last two decades, the commercial harvest in Cook Inlet has steadily—and more recently, precipitously—declined. In the 1980s and 1990s, the *sockeye* salmon harvest alone ranged consistently from four to nine million sockeye per year. ER 378-79. The 10-year average annual commercial catch from 2008 to 2017 is now down to just 2.7 million sockeye. ER 362. All three seasons since the Ninth Circuit issued its decision have been far below that average. *Id.*

The commercial sockeye harvest was about 1.8 million in 2017 and 2019, and commercial sockeye harvest in 2018 was only 814,516—the worst harvest in over 40 years. *Id.* The 2018 total commercial harvest of *all five* salmon species was approximately 1.3 million salmon: 61% less than the most recent 10-year average (already reduced) annual harvest of 3.4 million fish. *Id.*

Accompanying this period of historically low salmon harvest is the State’s decision to gradually restrict the commercial fishery year after year, with most openings now being severely geographically limited to only a narrow band, preventing the fishery from targeting areas where salmon congregate. ER 351-54, 433-35. At the same time, the State has continued to increase “escapement” levels to record high (and likely unsustainable) levels in order to guarantee more than enough fish for the sport fishers to catch and to stock the State resident-only personal use fishery with hundreds of thousands of fish. ER 356-57, 396, 435-38.<sup>3</sup> Even with inflated escapement targets, the restrictions on commercial fishing are so significant that the State still regularly exceeds those escapement goals (e.g., the Kenai in-river sockeye goal has been exceeded nine out of the last 10 years). ER 356-56, 434-35. The State restrictions have resulted in severe financial hardship to

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<sup>3</sup> For example, the in-river escapement goal for sockeye in the 1980s and early 1990s (when the fishery was doing very well) was 400,000 – 700,000. ER 384. By 2011, the State ratcheted that goal to 1,100,000 – 1,350,000, with no underlying biological basis for the change. *Id.*



the participants in the Cook Inlet commercial salmon fishery, as well as the businesses that rely on the commercial harvest. Twenty years ago, Cook Inlet had 23 major salmon processors; now, it is down to four. ER 361-62.

Importantly, these State restrictions are based not on science or sound principles of species conservation and fishery management, ER 353-54, 438-39, but rather on other “allocative purposes,” like “mak[ing] sport fisheries more enjoyable,” ER 435-39. In fact, as a result of the State’s over-escapement approach, the increasing *sport* fishery (and the resident-only personal use fishery) has harmed Cook Inlet salmon by causing “serious in-river habitat degradation problems such as hydrocarbon pollution and turbidity levels that exceed clean water standards, and miles of trampled riverbanks.” ER 435. Moreover, by limiting the commercial drift fleet, the State has effectively “removed [it]s most important tool for assessing salmon run strength and timing.” ER 435. The result is that millions of salmon go unharvested every year while the commercial fleet is sidelined, to the detriment of UCIDA’s members, local fishing communities, and the national interest in this important food source as expressed by the Magnuson Act. ER 324, 331-335.

**C. The Ninth Circuit Held That NMFS Cannot Delegate Federal Management of the Fishery to the State and That an FMP Is Required for the Entire Cook Inlet Salmon Fishery.**

In 2013, UCIDA filed its initial complaint in this action with the district court, challenging NMFS's decision to remove the Cook Inlet salmon fishery from the salmon FMP. *United Cook*, 837 F.3d at 1061. UCIDA alleged that the decision violated NMFS's statutory obligation to prepare an FMP "for each fishery under its authority that requires conservation and management." *Id.* (quoting 16 U.S.C. § 1852(h)(1)). For its part, NMFS argued, *inter alia*, that the Magnuson Act allows NMFS to "cede regulatory authority to a state over federal waters that require conservation and management simply by declining to issue an FMP" and "does not expressly require an FMP to cover an entire fishery." *Id.* at 1062, 1064. In September 2016, the Ninth Circuit issued an opinion rejecting NMFS's argument and siding with UCIDA.

This Court first disagreed with NMFS's argument that it could simply "defer" management to the State by "insert[ing] the word 'federal' into § 1852(h)(1) before the phrase "conservation and management." *Id.* at 1062. The Court rejected NMFS's attempt to add words to the statute and held there is no "deferral" exception to the Magnuson Act's mandate that NMFS must prepare an FMP for each fishery requiring conservation and management. *Id.* The Court explained that "the federal government cannot delegate management of the fishery

to a State without a plan, because a Council is required to develop FMPs for fisheries within its jurisdiction . . . *and then to manage those fisheries ‘through’ those plans.*” *Id.* at 1063 (emphasis added). The Court also made clear that a purpose of the FMP requirement was to ensure “that federal fisheries are to be governed by federal rules in the national interest, not managed by a state based on parochial concerns.” *Id.*

Next, the Court rejected NMFS’s argument that an FMP need not cover an entire fishery. The Court explained that “fishery is a defined term” and that NMFS’s view, if accepted, would allow it to “fulfill its statutory obligation by issuing an FMP applying to only a single ounce of water in that fishery.” *Id.* at 1064. The Court stated that Congress “did not suggest that [the] Council could wriggle out of this requirement by creating FMPs only for selected parts of those fisheries, excluding other areas that required conservation and management.” *Id.* In short, the Ninth Circuit instructed that (1) NMFS must prepare an FMP consistent with the federal standards set forth in the Magnuson Act that reflect the national interest, and (2) the FMP must address the entire Cook Inlet fishery.

On remand to the district court, the parties agreed to entry of judgment that remanded the case to NMFS, with the district court retaining jurisdiction. ER 13. The parties ultimately agreed to allow State management to continue while NMFS and the Council developed a new FMP. UCIDA’s agreement to such terms was

driven primarily by NMFS’s express threat that it would close the fishery entirely in federal waters if State management did not continue during remand. *See* ER 359-360, 456-57. NMFS estimated it would take the Council “approximately two years to develop and take final action on a new amendment to the Salmon FMP that addresses the Cook Inlet Area.” ER 458.

**D. On Remand and Long Overdue, NMFS and the Council Continue to Defy the Requirements of *United Cook* in Developing the Amendment.**

Despite NMFS’s two-year promise, nearly *three years* have passed since this Court issued its ruling, and NMFS and the Council have made little progress toward the development of an amended FMP. What progress has occurred is in direct violation of the Ninth Circuit’s instructions in *United Cook*. Namely, NMFS and the Council are considering three proposals on remand—*none* of which comply with the Ninth Circuit’s holding or the MSA. The three proposals are summarized as follows:

**Alternative One** is to produce no FMP. ER 185. This is “not a viable alternative given the Ninth Circuit’s decision.” *Id.*

**Alternative Two** would parse the fishery into separate “state” and “federal” components, and then manages the fish only when they are in federal waters. ER 185. But the Court already rejected the argument “that § 1851(h)(1) does not expressly require an FMP to cover an entire fishery,” explaining that “fishery” is a “defined term” and that NMFS could not provide “FMPs only for selected parts of

those fisheries.” *United Cook*, 837 F.3d at 1064. Alternative Two also proposes to defer to the State as to what management is needed in federal waters, allowing the State to decide how many fish are caught, who gets to fish, and where, when, and how fishing will occur. ER 185, 191. This violates both the Magnuson Act, which requires these elements to be decided by NMFS, and this Court’s instruction that NMFS and the Council must develop an FMP according to “federal rules in the national interest” so that the fishery is “not managed by a state based on parochial concerns.” *United Cook*, 837 F.3d at 1063.

**Alternative Three** would also parse the fishery into separate “state” and “federal” components, and manage the fish only when in federal waters. ER 186. This alternative would set its own federal standards for fish while in federal waters, but makes that federal management plan entirely subservient to the State segment of the fishery. Fishing would occur in federal waters *if, and only if*, the State allows it. ER 184, 206. If the State decides to “allocate” the entire harvestable surplus to State needs (like having more than enough fish for sport fishers or for State resident-only personal use fishers), then Alternative Three simply closes the separate federal fishery. ER 184, 206, 208. This subservient approach plainly elevates parochial concerns over national interests and defies this Court’s instruction that the FMP must cover the entire “fishery” as defined in the MSA.

The Council created a stakeholder group, termed the “Salmon Committee,” composed of commercial fishing interests and tasked the Salmon Committee with developing recommendations for the salmon FMP to implement one of the three alternatives outlined above. ER 360. Understandably, many of the members of the Salmon Committee (including UCIDA members) expressed a fundamental disagreement over the scope of the FMP, as limited by the three alternatives. ER 360-61; *see also* ER 293-94.

Principally, UCIDA maintains that this Court’s prior order requires NMFS and the Council to manage Cook Inlet salmon stocks as a unit throughout their range, subject to the requirements of the Magnuson Act and its National Standards, not the parochial interest of the State. ER 360-61. The Council and NMFS disagree, stating that “[t]hese concepts are not supported by the Council,” and instructed the Salmon Committee to focus on the federal portion of the fishery and accept one of the three alternatives above. ER 310. One Council member directed UCIDA members to stop “debating those kinds of issues,” and “to play within the boundaries of the ballfield” as erroneously laid out by NMFS. ER 305.

UCIDA brought this issue to the district court’s attention when it first arose over two years ago, *see* ER 441 (UCIDA Letter to District Judge Burgess, Nov. 21, 2017), and has endeavored through written comments and testimony to effect change through the administrative process, *see* ER 320, 338 (comment letters).

But NMFS has grown only more entrenched with its narrow reading of the MSA and the Ninth Circuit's opinion, issuing a legal "memorandum" to the Council (erroneously) stating that the action alternatives "are consistent with the holding in *UCIDA v. NMFS*." ER 311, 315 (NMFS memorandum). Thus, a clear and distinct "impasse" has emerged between UCIDA, on one hand, and NMFS and the Council, on the other. ER 361.

**E. The District Court Refuses to Enforce the *United Cook* Mandate.**

After three disastrous fishing seasons under continued State management, and faced with an impasse in the remand process, UCIDA returned to the district court seeking enforcement of the decision in *United Cook*. UCIDA filed its motion in the district court on September 4, 2019, shortly after the conclusion of the disastrous 2019 fishing season, hoping to secure relief prior to the 2020 fishing season. ER 475. UCIDA specifically argued that "NMFS is not complying with the 'letter or spirit' of the Ninth Circuit's decision." ER 3.

UCIDA sought three kinds of relief. First, UCIDA asked for instructions from the district court that the FMP (a) must address the entire Cook Inlet salmon fishery (not just the federal segment of the fishery) and (b) may not create a separate federal fishery that is subservient to State interests. ER 4. Second, UCIDA asked the district to order completion of the FMP prior to fishing season 2020, or if that could not be accomplished, to require the parties to negotiate

measures to minimize injury to commercial fishers in the 2020 fishing season.

ER 4. Third, UCIDA asked for the appointment of a special master to oversee compliance on remand, including, if necessary, negotiations affecting the 2020 salmon fishing season. ER 4.

On January 6, 2020, the district court denied UCIDA's motion, in part, agreeing only to impose a deadline (fishing season 2022) by which the Council and NMFS must have an FMP in place. ER 12. This timely appeal followed.

## V. SUMMARY OF ARGUMENT

Enforcement of this Court's prior opinion in *United Cook* is both legally warranted and urgently needed to save the Cook Inlet commercial salmon fishery. Courts are endowed with the inherent authority to manage their proceedings and enforce their judgments. That authority includes broad latitude to fashion the relief necessary to remedy an established wrong. Under the well-established doctrines of the law of the case and rule of mandate, a district court carrying an appellate decision into execution during a remand period must follow the appellate instructions in all subsequent proceedings in the case. In so doing, the district court must consider both the letter and spirit of the appellate instructions.

NMFS is violating both the letter and spirit of the decision in *United Cook*. Despite this Court's 2016 admonishment in *United Cook* that the NMFS and the Council cannot "wriggle out" of their statutory requirements under the MSA "by



creating FMPs only for selected parts of” the fishery or by impermissibly “defer[ring]” certain aspects of the fishery’s management to the State, this is precisely what NMFS and the Council are again doing on remand. With the FMP amendment already overdue, none of the three FMP amendment proposals comply with *United Cook* or the Magnuson Act.

Under these circumstances, an order requiring NMFS to comply with *United Cook* is both necessary and appropriate. Moreover, additional equitable relief is necessary and appropriate in the interim to reduce the ongoing injury to the commercial fishery. While NMFS heads stubbornly down the wrong administrative path, the commercial fishing industry is facing economic collapse. Interim action is necessary to avoid making the entire remand process a wasted exercise.

The district court erred in declining to enforce *United Cook*. Its denial suffered from two fundamental flaws, as outlined in Section VII.C. *First*, the district court erroneously limited its authority to enforce the judgment to the four corners of its own judgment, rather than including the requirements set forth in *United Cook*. The district court was required to consider NMFS’s compliance with the Ninth Circuit’s mandate, and its failure to do so was error. *Second*, the district court erroneously concluded that it had no jurisdiction to grant interim relief. Controlling case law confirms that a court has jurisdiction to compel compliance

with the appellate mandate, and to provide interim relief as necessary until that mandate is satisfied. The district court's decision to the contrary should be reversed.

In light of NMFS's and the Council's repeated and ongoing failure to comply with the MSA as interpreted by this Court in *United Cook*, and the district court's compounding errors in its refusal to enforce that judgment, UCIDA now respectfully requests that this Court vacate the district court's denial and order the interim relief (outlined *infra* in Sections VI.3, VII) that UCIDA and the rest of the Cook Inlet commercial fishing community so desperately need.

## VI. ARGUMENT

### A. Standard of Review

This Court generally reviews the grant or denial of a motion to enforce a judgment for abuse of discretion. *See Cal. Dep't of Soc. Servs. v. Leavitt*, 523 F.3d 1025, 1032-33 (9th Cir. 2008). However, to the extent the conclusions supporting that grant or denial are those of law, they are reviewed de novo. *See Mull for Mull v. Motion Picture Indus. Health Plan*, 865 F.3d 1207, 1209 (9th Cir. 2017); *Stetson v. Grisson*, 821 F.3d 1157, 1163 (9th Cir. 2016); *Husain v. Olympic Airways*, 316 F.3d 829, 835 (9th Cir. 2002). Mixed questions of law and fact are also reviewed de novo. *See Lim v. City of Long Beach*, 217 F.3d 1050, 1054 (9th Cir. 2000). Similarly, the court of appeals "review[s] de novo a district court's

compliance with the mandate of an appellate court.” *United States v. Kellington*, 217 F.3d 1084, 1092 (9th Cir. 2000); *see also E.M. ex rel. E.M. v. Pajaro Valley Unified Sch. Dist. Office of Admin. Hearings*, 758 F.3d 1162, 1170 (9th Cir. 2014); *Pit River Tribe v. United States Forest Serv.*, 615 F.3d 1069, 1080 (9th Cir. 2010); *Snow-Erlin v. United States*, 470 F.3d 804, 807 (9th Cir. 2006); *Krug v. Lutz*, 329 F.3d 692, 695 (9th Cir. 2003).

Whether a district court possesses the authority to issue an injunction is also a question of law reviewed de novo. *See United States v. Hovsepien*, 359 F.3d 1144, 1155 (9th Cir. 2004) (en banc). The *scope* of injunctive relief, however, is reviewed for an abuse of discretion or application of erroneous legal principles. *See Melendres v. Arpaio*, 784 F.3d 1254, 1260 (9th Cir. 2015); *see also Aircraft Serv. Int’l, Inc. v. Int’l Bhd. of Teamsters*, 779 F.3d 1069, 1072 (9th Cir. 2015) (“We review the legal determination of whether the district court had the power to issue an injunction de novo, but review the district court’s exercise of that power for abuse of discretion.”).

**B. Enforcement Is Warranted Because NMFS and the Council Are Not Complying with This Court’s Instructions in *United Cook*.**

**1. Courts Have the Inherent Authority to Enforce a Prior Judgment When a Party Is Not Complying with That Judgment.**

A federal court has jurisdiction to “manage its proceedings, vindicate its authority, and effectuate its decrees.” *Kelly v. Wengler*, 822 F.3d 1085, 1094 (9th

Cir. 2016) (citation omitted); *Peacock v. Thomas*, 516 U.S. 349, 356 (1996) (describing a “federal court’s inherent power to enforce its judgments”); *Sukumar v. Direct Focus Inc.*, 224 F. App’x 556, 559 (9th Cir. 2007) (“Just as the district court had jurisdiction to decide the dispute, it also had jurisdiction to enforce its judgment.”). The jurisdiction and authority to enforce a judgment “is not exhausted by the rendition of the judgment, but continues until that judgment [is] satisfied.” *Sukumar*, 224 F. App’x at 559 (quoting *Riggs v. Johnson Cty.*, 73 U.S. (6 Wall.) 166, 187 (1868)). This authority to enforce prior orders includes the appellate court’s mandate and “the decision of an appellate court on a legal issue must be followed in all subsequent proceedings in the same case.” *United States v. Cote*, 51 F.3d 178, 181 (9th Cir. 1995) (quoting *Herrington v. Cty. of Sonoma*, 12 F.3d 901, 904 (9th Cir. 1993)), *as amended on denial of reh’g* (June 2, 1995). Indeed, it is “indisputable” that the lower court must “carry the mandate of the upper court into execution.” *Sprague v. Ticonic Nat’l Bank*, 307 U.S. 161, 168 (1939).

Judicial enforcement of a prior order is appropriate when the prevailing party demonstrates its opponent has not complied with the judgment’s terms. *State of Cal. v. United States Dep’t of Labor*, 155 F. Supp. 3d 1089, 1096 (E.D. Cal. 2016); *see, e.g., Leavitt*, 523 F.3d 1025. This general rule also extends to mandates issued to a federal agency, *State of California*, 155 F. Supp. at 1095-96 (citing

*Flaherty v. Pritzker*, 17 F. Supp. 3d 52, 55 (D.D.C. 2014)), including cases involving the Magnuson Act, *N.C. Fisheries Ass’n, Inc. v. Evans*, 152 F. Supp. 2d 870, 880, 882 (E.D. Va. 2001) (granting motion to enforce prior order). In fact, an “order enforcing [an] original mandate is . . . ‘particularly appropriate’” when “an agency neglect[s] the orders of a federal court.” *State of Cal.*, 155 F. Supp. 3d at 1096 (quoting *Int’l Ladies’ Garment Workers’ Union v. Donovan*, 733 F.2d 920, 922 (D.C. Cir. 1984)).

**2. NMFS and the Council Are Actively Violating *United Cook* and the MSA in Developing the Amended FMP.**

Enforcement of the decision in *United Cook* is necessary because NMFS and the Council are actively violating both the Ninth Circuit’s instructions in *United Cook* and the requirements of the MSA. The instructions from the Ninth Circuit in *United Cook* were straightforward and unambiguous. “Section 1852(h)(1) of the Act provides that a Council ‘shall’ prepare an FMP for each fishery (1) ‘under its authority’ that (2) requires ‘conservation and management.’” *United Cook*, 837 F.3d at 1062. NMFS cannot avoid that responsibility by inserting “federal” into Section 1852(h)(1) and deferring to the State. *Id.* at 1062. Furthermore, “fishery” is a “defined term,” and NMFS cannot “wriggle out of” its statutory duty by parsing the fishery into smaller units and then “by creating FMPs only for selected parts of those fisheries, excluding other areas that required conservation and management.” *Id.* at 1064.

Despite the clarity of these instructions, NMFS and the Council on remand are still trying to wriggle out of their duties under the MSA. This time, NMFS effectively attempts to insert the word “federal” in front of “fishery” in Section 1852(h)(1). ER 185. Based on that view, NMFS claims that *United Cook* only requires an FMP for the “federal” portion of the fishery and that the “state” portion of the fishery (which catches the exact same stock of fish) is beyond NMFS’s purview. ER 184-185 (“FMP management would not be able to control harvests in state waters”). After parsing the fishery into artificial “state” and “federal” components, NMFS proposes an FMP (either Alternative Two or Alternative Three) that will provide conservation and management for only the federal portion. ER83, 185-186.<sup>4</sup>

NMFS’s efforts to parse the fishery defy the decision in *United Cook* and the plain statutory text of the MSA. As this Court explained, “the statute requires an FMP for a fishery, a defined term.” *United Cook*, 837 F.3d at 1064. “Fishery” means:

(A) one or more **stocks of fish** which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical,

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<sup>4</sup> Again, under Alternative One, NMFS proposes to produce no FMP at all. ER 185. The Council concedes that this alternative “is not viable given the Ninth Circuit’s decision” so no further discussion is needed. ER 83, 185.

scientific, technical, recreational, and economic characteristics; and (B) **any fishing for such stocks**.

16 U.S.C. § 1802(13) (emphases added). Simply put, a fishery is a “stock of fish” and “any fishing” on that stock. The obligation to produce an FMP for “each fishery” under Section 1852(h)(1), thus, extends to each “stock of fish” and “any fishing for such stocks.”

There are multiple biologically distinct salmon stocks in Cook Inlet (*e.g.*, the Kenai River sockeye salmon stock, the Kenai River chinook stock, the Kasiliof River sockeye stock, etc.). ER 384-85. But there are *no* separate state and federal stocks, and the fish, of course, are unaware of political boundaries. ER 436. The Kenai River sockeye “stock,” which spends most of its life *outside* of State waters (in the EEZ and international waters) and is harvested in federal waters in Cook Inlet, is the exact same “stock of fish” that returns to the Kenai River and is harvested in State waters.

NMFS’s statutory obligation under Section 1852(h)(1) to produce an FMP for “each fishery” necessarily applies to each Cook Inlet “stock of fish” and “any fishing” on that stock. 16 U.S.C. § 1802(13). It is undisputed that *none* of NMFS’s proposed alternatives will do this. Instead, NMFS proposes only to provide an FMP that addresses *some of* the “fishing for [Cook Inlet] salmon stocks,” *Id.*; NMFS’s FMP will not provide conservation or management for fishing for that stock while in state waters. But, the definition of “fishery” plainly

includes “any fishing for such stocks,” not just the fishing on the selected parts of the stock NMFS would (begrudgingly) choose to address. *Id.*

NMFS is thus doing precisely what this Court in *United Cook* said it may not do:

When Congress directed each Council to create an FMP “for each fishery under its authority that requires conservation and management,” (*id.* § 1852(h)(1)), it did not suggest that a Council could wriggle out of this requirement by creating FMPs only for selected parts of those fisheries, excluding other areas that required conservation and management.

*United Cook*, 837 F.3d at 1064. This Court disapproved the piecemeal management of a single “fishery” in which some parts of the fishery would be managed under the National Standards and other parts would not. NMFS is disregarding that clear instruction, and an order requiring compliance is “particularly appropriate” in this instance. *State of Cal.*, 155 F. Supp. 3d at 1096 (“order enforcing [an] original mandate is . . . ‘particularly appropriate’” when “an agency neglect[s] the orders of a federal court.”) (quoting *Int’l Ladies’ Garment Workers’ Union*, 733 F.2d at 922).

NMFS’s steadfast position that “fishery” does not include fishing for the same stock in State waters is even more egregious because it violates NMFS’s own interpretive regulations. National Standard 3 expressly states that NMFS has an obligation to manage each fishery “as a unit throughout its range.” 16 U.S.C. § 1851(a)(3). And, NMFS’s interpretive regulations on National Standard 3



confirm that “[t]he geographic scope of the fishery, for planning purposes, should cover the entire range of the stock(s) of fish, and not be overly constrained by political boundaries.” 50 C.F.R. § 600.320(b). As this Court explained, National Standard 3 is satisfied “[w]hen a stock of fish is managed in the same manner throughout its geographical range.” *Or. Trollers Ass’n v. Gutierrez*, 452 F.3d 1104, 1121 (9th Cir. 2006). NMFS clearly knows better than to pretend that it can just segment the so-called federal salmon fishery from the state salmon fishery. An order giving NMFS “specific instructions” is therefore both necessary and appropriate. *Earth Island Inst. v. Hogarth*, 494 F.3d 757, 770 (9th Cir. 2007) (“specific instructions” to agency appropriate based on “government’s intransigence in following Congress’s mandate”).

NMFS’s noncompliance with this Court’s clear instructions does not end there. This Court in *United Cook* also explained that the purpose of an FMP is to ensure “that federal fisheries are to be governed by federal rules in the national interest, not managed by a state based on parochial concerns.” *United Cook*, 837 F.3d at 1063. The Court explained that though NMFS could delegate management “through” the FMP, the FMP itself must be guided by the National Standards and the national interests. *Id.*

Again, none of NMFS’s FMP alternatives comply with that instruction. Alternative Two purports to delegate management to the State for the federal

segment of the fishery. But it goes even further; it actually substitutes State “parochial concerns” for the required National Standards. An FMP must set guidelines on basic fishery management decisions like (a) how many fish can be caught (optimum yield under National Standard 1, Section 1851(a)(1), and annual catch limits under Section 1853(a)(15)); and (b) who gets to catch the fish (a fair and non-discriminatory allocation under National Standard 4, Section 1851(a)(4)). Under Alternative 2, NMFS defers *to the State* to make all of those federal decisions based on *State interests*.

For example, the Council would let the State set optimum yield to “reflect[] the biological, economic, and social factors considered by the [Alaska] Board [of Fish] and ADF&G.” ER 218. Similarly, Alternative Two defers the determination about a fair and equitable allocation of the fishery (National Standard 4) to the State by establishing fishing seasons to meet the State’s “economic and social objectives.” ER 192. As to the mandatory obligation to set “annual catch limits” (*see* 16 U.S.C. § 1853(a)(15)), Alternative Two would require NMFS and the Council to use “escapement goals and management plan objectives established by the state,” which in turn are based on the State’s assessment (not NMFS’s assessment) of policy objectives, optimum yield, and allocation decisions. ER 193. Accordingly, under Alternative Two, the fishery’s optimum yield, allocation scheme, escapement goals, and even overall management objectives—all

fundamental, substantive, and nationally prescribed aspects of fishery governance—will be governed by State “parochial concerns,” which is directly contrary to the Ninth Circuit’s holding and the Magnuson Act. *United Cook*, 837 F.3d at 1063.

The MSA allows NMFS to create an FMP that delegates “management” of the fishery to a State. 16 U.S.C. § 1856(a)(3). But it still requires that NMFS develop a plan that ensures the fishery is “governed by federal rules in the national interest.” *United Cook*, 837 F.3d at 1063. Alternative 2, by contrast, plainly elevates State interests over federal interests.

Alternative 3 likewise elevates parochial concerns over the national interests. Alternative 3 keeps federal control over the federal segment of the fishery, but makes the federal segment’s existence completely subservient to the State segment of the fishery. Specifically, NMFS explains that “the EEZ portion of the fishery would only occur *if* there was a harvestable surplus after accounting for removals in State waters.” ER 184 (emphasis added). *If* the State does not allow for a surplus in federal waters, NMFS would simply close that fishery. ER 206, 208. In other words, Alternative 3 defers the decision of how to allocate the fishery in a fair and reasonable way entirely to the State’s discretion. If the State decides to allocate harvest that has long occurred in federal waters to other State interests (like the State’s resident-only personal use fishery), the FMP under

Alternative 3 simply abides and closes the fishery in the EEZ. ER 206, 208.

Again NMFS elevates state parochial concerns over the federal interest in contravention of *United Cook*.

NMFS argued below that it has no ability to control fishing in state waters. But that is not true. The State may have concurrent jurisdiction within its boundaries, but that does not render NMFS powerless to act, particularly where anadromous species are impacted. NMFS has “exclusive” management authority over “all fish” in the EEZ. 16 U.S.C. § 1811(a). For anadromous species, NMFS’s management authority (and management obligation) does not begin or end when salmon cross out of, or into, the EEZ. Rather, the Act expressly confirms NMFS’s “exclusive fishery management authority” over “[a]ll anadromous species throughout the migratory range of such species beyond the exclusive economic zone.” *Id.* § 1811(b). In fact, the Act expressly acknowledges that “the anadromous species which spawn in United States rivers or estuaries, constitute valuable and renewable natural resources.” 16 U.S.C. § 1801(a)(1). Indeed, the unique nature of anadromous species’ migratory patterns and life cycles requires special treatment under the law. These fish do not cease to be valuable and important national resources or unworthy of MSA management when they swim beyond the boundaries of the EEZ into state or international waters. Thus, the “declared” purpose of the MSA is to “take immediate action to conserve and

manage the fishery resources found off the coasts of the United States, *and* the anadromous species,” like salmon. *Id.* § 1801(b)(1) (emphasis added).

Moreover, while the State may have concurrent jurisdiction over stocks within its boundaries, the MSA makes clear that the federal interest must always predominate. Section 1856(b) explains that when “any State has taken any action, or omitted to take any action, the results of which will substantially and adversely affect the carrying out of such fishery management plan,” and fails to take corrective action after being requested to do so, NMFS may assume exclusive management of the entire fishery. 16 U.S.C. § 1856(b).

NMFS’s plans for a subservient FMP flip the provisions of Section 1856(b) upside down and render the provision meaningless. Nothing that the State ever does or could do with salmon management in Cook Inlet will “substantially and adversely affect” the salmon FMP because the proposed FMP, by design, elevates state interests over federal interests. For example, the State could allocate all fish to state fishers, leaving nothing for the federal fishery, and, still, State management would not “substantially or adversely affect” the federal fishery because NMFS intends to defer to the State’s “social objectives.” ER 192. Additionally, if the State decided to set escapement goals at unreasonable levels that have nothing to

do with optimum yield, based on no science whatsoever,<sup>5</sup> that would be fine because the planned FMP “reflect[s] the biological, economic, and social factors considered by the [Alaska] Board [of Fish] and ADF&G”—whatever those might be. ER 212. Similarly, if the State gave the commercial harvest to the State-resident-only personal use fishery (plainly contrary to National Standard 4) that, too, would be fine because it would reflect the State’s “economic and social objectives.” ER 192.<sup>6</sup>

Put differently, NMFS intends to rescind its authority to “assume exclusive management” in the event that State management adversely affects the FMP; under the proposed FMP, *it is the State that establishes the substantive requirements under the FMP*. Thus, Section 1856(b)’s override mechanism will never be

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<sup>5</sup> These are not hypothetical concerns. ER 435 (describing state practice of setting arbitrary escapement goals). The State has continued this disturbing practice during the pendency of this appeal, by approving a new suite of restrictive regulations in February of 2020. *See* Supplemental Huebsch Decl. ¶¶ 9, 24-25 (filed herewith). This declaration covers post appeal events, and UCIDA has separately filed a motion to include this declaration as part of the appeal.

<sup>6</sup> In fact, this is exactly what the State has been doing. The State regulations authorize a “personal use” fishery in Alaska that is *only for State residents*. Alaska Stat. § 16.05.940(27). In some years, the personal use fishery takes *more than 500,000 sockeye* out of the Kenai River alone. ER 394. Resident-only fisheries patently violate National Standard 4. 16 U.S.C. § 1851(a)(4) (management measures “shall not discriminate between residents of different states”). In February of this year, the State authorized a new State personal use fishery that allocates harvest away from the commercial fishery. Supplemental Huebsch Decl. ¶¶ 10, 22-23.

triggered and NMFS will have waived its ability to act in the national interest as dictated by the Act.

For the same reasons, NMFS's approach renders the delegation process meaningless. NMFS can delegate through an FMP if "the State's laws and regulations are consistent with the fishery management plan." 16 U.S.C. § 1856(a)(3)(A). But NMFS here defers to "state regulations" and state policy choices to *set the FMP standards*, making the standard for delegation meaningless.

The unfortunate reality is that after five years of litigation and three years of remand following *United Cook*, NMFS has found a clever new way to avoid discharging its mandatory obligations for the Cook Inlet salmon fishery. NMFS's planned FMP will result in a situation that is virtually no different than when this litigation began. ER 436. As the D.C. Circuit explained, a court has a responsibility to "ensure that its instructions are followed" and such relief is "particularly appropriate where, as here, there is a record of agency recalcitrance and resistance to the fulfillment of its legal duties." *Cobell v. Norton*, 240 F.3d 1081, 1109 (D.C. Cir. 2001). Nothing short of a detailed and explicit order from this Court will end NMFS's recalcitrance here.

**3. Interim Relief Is Necessary to Prevent Collapse of the Cook Inlet Commercial Salmon Fishing Industry.**

Immediate action by the Court is urgently needed because the Cook Inlet commercial salmon fishing industry will not survive if NMFS stays its present

course on remand. Without intervention by the Court, NMFS will not produce an FMP until fishing season 2022, and that FMP (as demonstrated above) plainly will not be compliant with the MSA. This will result in another round of litigation, and another remand order, and another administrative process to create a legally compliant FMP. The present cycle of FMP amendment, to judicial review, to remand, to (expected) new FMP amendment will last almost *10 years* (2012 to 2022). UCIDA obviously cannot wait another 10 years (to 2032) to obtain a legally compliant FMP.

The reality is that without judicial intervention, the commercial fishing industry is unlikely to survive even past fishing season 2020. The last three years since the remand have been disastrous, leaving the commercial fishery facing a significant risk of insolvency. ER 357, 361-64. And since the filing of this appeal, things have gotten appreciably worse. In February of 2020, the Alaska Board of Fish passed a new suite of regulations that will go into place this year that will further dramatically curtail commercial salmon fishing in Cook Inlet. *See* Supplemental Huebsch Decl. at ¶¶ 9-25. Specifically, on February 11, 2020, the Alaska Board of Fish raised escapement targets on the Kenai River with no biological basis for so doing (essentially wasting 100,000 sockeye that could have been sustainably harvested by commercial vessels), and imposed other significant restrictions limiting time and access for commercial fishing in the EEZ and other



historic fishing areas, *including closing over 500 square miles* of Cook Inlet, with no consideration of (and in derogation of) any principle of sound management under the MSA. *Id.* The Alaska Board of Fish is driven by politics, not the interests of the nation reflected in the Magnuson Act.

These new State changes are the death knell for the commercial salmon fishing industry in Cook Inlet. *Id.* at ¶ 9. Based on the regulatory changes, UCIDA estimates that the average commercial driftnet fishing vessel in 2020 will catch 1,000 salmon making the average annual *gross* revenue for a fishing vessel about \$10,000. *Id.* Many UCIDA members have barely been surviving the last few years under State management, and many have already given up. With these new restrictions, the commercial fishing industry is unlikely to survive past 2020 as a viable enterprise. *Id.* The State will have regulated the commercial fishery out of existence, while NMFS and the Council cleverly evade their statutory duties.

The Court is not powerless to sit by and do nothing as NMFS skirts the Court's mandate and the Cook Inlet commercial fishing industry collapses.<sup>7</sup> The

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<sup>7</sup> NMFS's recalcitrance in complying with court orders appears to be a growing new trend. Plaintiffs in at least two other recent cases involving NMFS shirking its fishery management obligations under the Magnuson Act have also been forced to file motions to enforce judgments against NMFS. Both district courts granted those motions. *See* Order Re: Plaintiff's Motion to Enforce Court Order (DE 119), *Oceana, Inc. v. Ross*, No. 2:17-cv-05146-RGK-JEM (C.D. Cal. Jan. 8, 2020), ECF No. 131 at 4, 6 (granting motion to enforce order against NMFS and giving the agency "specific instructions" after its actions on remand were

Ninth Circuit has in the past directly vacated and ordered specific agency action where the agency has displayed an “inability to resolve the issue repeatedly presented to it,” that is, where another “remand would be futile.” *Local Joint Exec. Bd. of Las Vegas v. N.L.R.B.*, 657 F.3d 865, 873-74 (9th Cir. 2011); *see also Earth Island Inst.*, 494 F.3d at 770 (vacating NOAA findings after the agency had twice failed to perform statutory requirements and affirming issuance of “specific instructions” to the agency rather than a “generic remand”); *Sierra Club v. U.S. E.P.A.*, 346 F.3d 955 (9th Cir. 2003) (vacating an order by the Environmental Protection Agency and ordering a specific finding where the administrative record was fully developed and conclusions flowing from the record were clear); *Ariz. Elec. Power Coop., Inc. v. United States*, 816 F.2d 1366, 1376 (9th Cir. 1987) (vacating decision of the Interstate Commerce Commission and remanding with specific instructions “[b]ecause of the history of recalcitrance displayed by the [Commission]”).

Accordingly, UCIDA respectfully seeks the following relief from this Court:

(1) an order reversing the district court’s partial denial of UCIDA’s motion to enforce and declaring that the FMP (a) must provide federal management goals,

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“effectively the opposite of what the Court ordered”); *Oceana, Inc. v. Ross*, 359 F. Supp. 3d 821, 829 (N.D. Cal. 2019) (granting motion to enforce judgment against NMFS after it failed to “offer any specific plan to comply with the Magnuson-Stevens Act” for at least a year after the court ordered it to do so).

objectives, and measures compliant with the Magnuson Act throughout the *entire* range of the Cook Inlet salmon fishery and (b) may not create a federal fishery that is subservient to State interests; and (2) an order directing the parties (including the State) to negotiate interim measures that will ensure reasonable fishing opportunities for Plaintiffs-Appellees' members until an FMP is put in place.

UCIDA also requests appointment of a special master to facilitate the negotiation of reasonable fishing opportunities for the 2020 fishing season. A court of appeals may appoint a special master to hold hearings, if necessary, and to recommend factual findings and disposition in matters ancillary to proceedings in the court. *See* Fed. R. App. P. 48; *see also* Fed. R. Civ. P. 53(a)(1)(C) (permits a court to appoint a master to “address . . . posttrial matters that cannot be effectively and timely addressed by an available . . . judge of the district”).<sup>8</sup> *see also* *Ruiz v. Estelle*, 679 F.2d 1115, 1161 (5th Cir. 1982); *see, e.g., Hook v. Ariz. Dep’t of Corr.*, 107 F.3d 1397, 1403 (9th Cir. 1997) (special master to oversee compliance with court-ordered prison reforms “after court monitoring alone had been demonstrated to be inadequate”), *as amended on reh’g and reh’g en banc* (Apr. 22, 1997); *Halderman v. Pennhurst State Sch. & Hosp.*, 446 F. Supp. 1295, 1307-11

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<sup>8</sup> This inherent authority is also codified in the All Writs Act. *See Nat’l Org. For the Reform of Marijuana Laws v. Mullen*, 828 F.2d 536, 544 (9th Cir. 1987) (“The appointment of a master to monitor compliance with the preliminary injunction . . . validly applies the All Writs Act.”).

(E.D. Pa. 1977) (special master to monitor compliance with injunction ordering state hospital reforms).

**C. The District Court Erred in Denying Interim Relief During the Remand Period.**

The district court's refusal to grant UCIDA's motion was error and should be reversed. The district court erroneously concluded that it had no authority to look beyond the four corners of its own judgment and lacked jurisdiction to even consider granting interim relief. That plainly is not the case. Controlling precedent confirms that district courts have the authority (and obligation) to enforce the appellate mandate.

**1. The District Court Failed to Analyze NMFS's Compliance with *United Cook*.**

The district court refused to enforce this Court's instruction in *United Cook* because those instructions were "not terms of the Judgment" entered by the district court. ER 10. The district court erred by refusing to look beyond the four corners of its own judgment. The district court's judgment did not repeat any of the instructions from *United Cook* because it did not need to.

An appellate "mandate is controlling as to all matters within its compass," whether those matters are "expressly or impliedly" addressed therein. *Odima v. Westin Tucson Hotel*, 53 F.3d 1484, 1497 (9th Cir. 1995). Consequently, in executing the controlling appellate decision, "[d]istrict courts must implement both

the letter and the spirit of the mandate, taking into account the appellate court's opinion *and the circumstances it embraces.*" *Vizcaino v. U.S. Dist. Court for W. Dist. of Wash.*, 173 F.3d 713, 719 (9th Cir.) (internal quotation marks and citation omitted, emphasis added), *as amended* (June 10, 1999), *sub nom. In re Vizcaino*, 184 F.3d 1070 (9th Cir. 1999); *see, e.g., Firth v. United States*, 554 F.2d 990, 994 n.3 (9th Cir. 1977) (explaining a district court's remand order must be "construed in the light of the opinion of th[e circuit] court" and its remand order must be "in strict compliance with the opinion and mandate"). When construing the mandate, the district court "may consider the [appellate] opinion . . . as well as the procedural posture and substantive law from which it arises." *Kellington*, 217 F.3d at 1093; *see, e.g., Oceana, Inc. v. Ross*, 359 F. Supp. 3d 821, 828-29 (N.D. Cal. 2019) (granting motion to enforce judgment against NMFS based not on its failure to comply with the judgment terms but rather their failure to meet "their obligations under the Magnuson-Stevens Act and the APA" generally).

UCIDA presented compelling evidence that the district court was not complying with clear instructions in *United Cook*. The district court was required to evaluate NMFS's actions against the "letter and spirit" of the Ninth Circuit's holding, not merely its own remand order. *Vizcaino*, 173 F.3d at 719. The district court was necessarily required under the mandate rule to "follow" *United Cook* as it "carr[ied]" it "into execution" during remand, *see Sprague*, 307 U.S. at 168, and

“consider the [appellate] opinion . . . as well as the procedural posture and substantive law from which it arises,” *Kellington*, 217 F.3d at 1093. Instead, the district court myopically focused on only its own remand order. That was error.

The district court’s reasoning is especially puzzling because it expressly *agreed* that the appellate mandate in *United Cook* requires NMFS and the Council “to create an FMP for each, *entire* fishery under its authority,” ER 2 (emphasis added), and that the new FMP had to be “compliant with the Ninth Circuit’s decision” in *United Cook*, ER 12. Yet it somehow felt powerless to review NMFS’s actions to see whether NMFS was producing an FMP for the “entire fishery” or acting “compliant” with *United Cook*, apparently because those requirements did not appear within the four corners of the district court’s judgment. Controlling precedent says otherwise. Regardless of whether the remand order expressly incorporated the Ninth Circuit’s controlling mandate, the district court was necessarily required under the mandate rule to “follow” *United Cook* as it “carr[ied]” it “into execution” during remand. *See Sprague*, 307 U.S. at 168.

**2. The District Court had Jurisdiction to Enforce the Mandate in *United Cook*.**

The district court also erred in concluding it lacked jurisdiction to grant interim relief during a remand. ER 11. The district court apparently believed that UCIDA had to wait until the remand was complete to seek any kind of relief.

Again, controlling authority is to the contrary. This Court rejected this exact position in *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.* (“*NWF v. NMFS*”), 886 F.3d 803 (9th Cir. 2018). In 2016, a district court invalidated a biological opinion and remanded it back to NMFS for revision, imposing certain deadlines but allowing the administrative status quo to continue until the new opinion was developed. *Id.* at 814-15. The following year, when it became clear that the status quo was causing significant harm, the plaintiffs moved for interim relief during the remand period. *Id.* at 815. The district court granted almost all of the relief requested, and the agency appealed, arguing that the district court’s initial remand order constituted a final judgment that effectively cut off plaintiffs’ ability to seek further relief. *Id.* at 816. This Court disagreed, holding that the remand order “was not final” and therefore, it neither “preclude[d] plaintiffs from moving for later injunctive relief” nor stripped the court of jurisdiction to hear the motion. *Id.* at 816-17. Thus, the fact that a new biological opinion had not yet been issued post-remand did not preclude the district court from ordering interim relief outside the scope of the original district court’s judgment. *Id.*

The district court’s conclusion here that it lacked jurisdiction to consider interim relief is foreclosed by *NWF v. NMFS*. UCIDA demonstrated that NMFS was not following the letter or spirit of *United Cook*, and that UCIDA’s members were suffering (and would continue to suffer) significant irreparable financial

injury until a compliant FMP was developed and implemented. ER 357, 361-64.

As in *NWF v. NMFS*, no dismissal order has yet issued in this case, and in fact, the district court expressly retained jurisdiction over the remand. ER 13. The district court thus had jurisdiction to provide UCIDA's requested relief.

This conclusion follows settled law. A district court's jurisdiction to "manage its proceedings" and "effectuate its decrees" continues until the judgment is satisfied or until a court issues an "order dismissing a case with prejudice."

*Kelly*, 822 F.3d at 1094 (quoting *Kokkonen v. Guardian Life Ins. Co. of Am.*, 511 U.S. 375, 378, 380 (1994)). Indeed, this Court has affirmed that, with limited exceptions that do not apply here, "remand orders are not considered final."

*Chugach Alaska Corp. v. Lujan*, 915 F.2d 454, 457 (9th Cir. 1990). Here, the remand is not complete; thus, the district court retains jurisdiction. The district court's conclusion to the contrary was clear legal error.

### **3. The District Court's Enforcement Authority Extended to the Specific Measures UCIDA Requested.**

The district court also erred in concluding that it lacked "authority to compel such actions" because specific "[i]nterim measures were not considered by the Ninth Circuit decision or the [district court's remand order]." ER 12. This misconstrues the scope of the district court's authority and contravenes both the law of the case and rule of mandate as articulated by this Court.



In “enforcing the mandate . . . on remand, courts are often confronted with issues that were never considered by the remanding court.” *Kellington*, 217 F.3d at 1093 (internal quotation marks and citation omitted). Thus, a district court on remand may grant any additional or supplementary relief that “properly lay[s] within the mandate.” *Caldwell v. Puget Sound Elec. Apprenticeship & Training Tr.*, 824 F.2d 765, 767 (9th Cir. 1987). Such relief “need only be consistent with the mandate, not specifically mentioned in the opinion.” *Id.* (citing *Quern v. Jordan*, 440 U.S. 332 (1979); *Anderson v. Knox*, 300 F.2d 296, 298 (9th Cir. 1962)). So long as its remedies on remand are “consistent” with the overarching appellate decision, a district court has “broad latitude in fashioning equitable relief when necessary to remedy an established wrong.” *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 936 (9th Cir. 2008) (quoting *Alaska Ctr. for the Env’t v. Browner*, 20 F.3d 981, 986 (9th Cir. 1994)). For example, in another remand case involving NMFS, this Court held it is “clearly permissible” for a district court not only to “impose a deadline for the remand proceedings” but also to require “regular status reports” during remand, despite that the appellate mandate had discussed neither of these measures. *Id.* at 937.

Accordingly, it is of no consequence that this Court’s 2016 mandate did not specifically mention interim measures. The Court in 2016 had no reason to question the typical presumption that NMFS would comply with the instructions in

*United Cook* in a timely fashion. When that reasonable presumption turned out to be inaccurate, the district court was obligated to consider appropriate remedial action in light of demonstrated agency recalcitrance. The district court had not only the authority to do so, but “broad latitude” to fashion and grant any additional or supplementary relief properly within and consistent with *United Cook*. *Id.* at 936.

Finally, to the extent the district court declined to issue interim relief based on the understanding that UCIDA could simply “negotiate with the Council directly to implement [interim] measures” for the 2020 fishing season, that understanding is incorrect. ER 11. NMFS, not the Council, has authority to implement interim measures, and NMFS has represented that it is unwilling to do so. In response to the district court’s question as to whether it was possible to discuss an interim plan, NMFS responded “[t]he answer is no,” and that the only interim plan NMFS would voluntarily consider is to “close the federal fishery.” *See* ER 115 (Transcript at 17). This has been NMFS position through the entirety of the remand. ER 456-58. Thus, there is currently no way for UCIDA to achieve interim relief absent judicial enforcement.

In sum, the district court erred in refusing to grant interim relief to UCIDA during the remand period. The court retained its inherent jurisdiction to manage the remand proceedings and to execute and enforce both the remand order and this

Court's controlling decision in *United Cook*. Accordingly, that authority allowed the court to enforce not just the express instructions in the remand order but also any additional or supplementary relief consistent with *United Cook*.

## VII. CONCLUSION AND RELIEF REQUESTED

For the foregoing reasons, UCIDA's the decision below should be reversed. This Court already has told NMFS how it must comply with the MSA. NMFS continues to disregard and violate that instruction. Judicial enforcement is urgently needed to correct NMFS and the Council's actions on remand and to achieve at last a fully compliant FMP.

UCIDA respectfully requests the following relief from this Court:

- (1) An order reversing the district court's decision denying, in part, UCIDA's Motion to Enforce the Judgment;
- (2) An order declaring that, pursuant to *United Cook*, the FMP for Cook Inlet (a) must include the entire fishery (including the entire range of the salmon stocks); and (b) may not create a federal fishery that is subservient to state interests;
- (3) An order requiring NMFS, the State, and UCIDA to immediately negotiate interim fishing measures for fishing season 2020 (and until an FMP is completed and implemented) that provide reasonable fishing opportunities for Plaintiffs-Appellees' members, including but not limited to an opportunity to

harvest the surplus of underutilized salmon stocks that are escaping at a rate above biological replacement needs;

(4) An order authorizing the appointment of a special master to oversee those negotiations and the remand process;

(5) An order requiring completion and implementation of the salmon FMP for Cook Inlet by fishing season 2021; and

(6) An order retaining jurisdiction in this Court until completion of the remand.

I am unaware of any related cases currently pending in this court.

DATED: February 20, 2020.

Respectfully submitted,

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UNITED STATES COURT OF APPEALS  
FOR THE NINTH CIRCUIT

Form 8. Certificate of Compliance for Briefs

9th Cir. Case Number(s) 20-35029

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This brief contains **11,724** words, excluding the items exempted by Fed. R. App. P. 32(f). The brief's type size and typeface comply with Fed. R. App. P. 32(a)(5) and (6).

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# EXHIBIT C

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UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

UNITED COOK INLET DRIFT ASSOCIATION, and )  
COOK INLET FISHERMEN’S FUND, )

Plaintiffs, )

v. )

NATIONAL MARINE FISHERIES SERVICE; )  
REBECCA BLANK, in her official capacity as the )  
Acting United States Secretary of Commerce; JANE )  
LUBCHENKCO, Administrator, National Oceanic and )  
Atmospheric Administration; JAMES W. BALSIGER, )  
NMFS Alaska Region Administrator, )

Defendants. )

Case No. 1:13-cv-82-RBW

**STATE OF ALASKA’S MOTION  
TO INTERVENE  
AS A DEFENDANT AND  
MEMORANDUM IN SUPPORT**

**I. Introduction**

The State of Alaska (State) moves, pursuant to Rule 24(a)(2) of the Federal Rules of Civil Procedure, for intervention as a matter of right as a defendant in this action. The State seeks to participate fully in the briefing and other proceedings in this case in order to protect the State’s sovereign interest in the independent management of its fisheries, an interest that stands to be significantly impacted by rulings requested by plaintiff United Cook Inlet Drift Association (UCIDA) in this case. The State of Alaska has a right to intervene under Fed. R. Civ. Proc.

24(a)(2) because the State has a significant interest relating to the subject of the action; the disposition of the action may impair or impede the State's ability to protect its interest; this motion is timely; and the existing parties may not adequately represent the State's interest.

Alternatively, permissive intervention should be granted under Fed. R. Civ. Proc. 24(b).

This Memorandum is supported by the points and authorities discussed below. It is accompanied by a proposed order and the State's proposed Answer to UCIDA's Amended Complaint as required by Civil Rule 24(c).

## **II. Factual and Procedural Background**

At issue in this case is the validity of regulations that implement Amendment 12 to the Fishery Management Plan for Salmon Fisheries in the EEZ off the Coast of Alaska (FMP). *See* 77 Fed. Reg. 75570-87 (Dec. 21, 2012). At 50 CFR §679.2(2), Amendment 12 excludes EEZ waters in three areas of Alaska (Cook Inlet, Prince William Sound, and Alaska Peninsula) where state-managed salmon fisheries have been in place since statehood. All three areas are in what the FMP calls the "West Area." *Id.* The effect of exclusion from the FMP means that the State is free to manage the salmon fisheries in those areas without federal fishery agency oversight, as it has since statehood. Plaintiffs are specifically challenging the exclusion of the waters of the southern part of Cook Inlet.<sup>1</sup>

Prior to Amendment 12, the FMP provisions addressed salmon fishing in the West Area of Alaska as follows:

### 2.2 Fisheries

Except as provided by other Federal law (*see* Appendix C), this plan allows commercial salmon fishing only in the East Area. It allows

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<sup>1</sup> Complaint for Declaratory Judgment and Injunctive Relief, and Petition for Review at 4.



sport (or recreational) salmon fishing in the West and East areas. Specific regulations are promulgated by the Alaska Department of Fish and Game.

### 2.2.2 The Commercial Salmon Fishery in the West Area.

In the West Area, the only commercial salmon fishery is the incidental fishery allowed under 50 CFR 210 (*see* Appendix C). Federal regulations implementing the North Pacific Fisheries Act (16.U.S.C. 1021, et seq.), prohibit U.S. fishermen from fishing for or taking salmon with nets in the North Pacific outside Alaskan waters except for three historical fisheries managed by the State; these are the (a) False Pass (South Peninsula), (b) Cook Inlet, and (c) Copper River net fisheries. These fisheries technically extend into the EEZ, but they are conducted and managed by the State of Alaska as nearshore fisheries. Thus, aside from those traditional fisheries, this plan prohibits commercial salmon fishing in the EEZ west of the longitude of Cape Suckling.

The former FMP provisions did not exclude the three historical State fisheries from FMP coverage, but recognized the historical nature of the three state-managed near-shore salmon fisheries in EEZ waters and did not purport to (1) close commercial salmon fishing there as it did in the rest of the West Area and (2) did not exercise any management oversight of the three historical fisheries. The effect of Amendment 12, then, was to formalize the general status quo of independent State management as far as the three fisheries were concerned.

After adoption of Amendment 12, UCIDA filed this action on January 18, 2013.

In the complaint's request for relief, UCIDA requests the court to, among other things,

C. Vacate Amendment 12 and its implementing regulations, and, as appropriate, remand with an order instructing the Defendants to develop and FMP for Cook Inlet that complies with the requirements of the MSA, APA, and NEPA....

This would subject State salmon management to federal agency oversight and coordination requirement that would necessarily diminish the State's rights to independently manage and would extract a cost in additional money and resources to participate in dual management.

### **III. The State of Alaska Has a Right to Intervene Under Rule 24(a)**

The State of Alaska has a right to intervene under Fed. R. Civ. Proc. 24(a) in order to defend the State's interests against the claims asserted by UCIDA. Rule 24(a)(2) provides that on timely motion, the court must permit intervention by anyone who "claims an interest relating to the property or transaction that is the subject of the action, and is so situated that disposing of the action may as a practical matter impair or impede the movant's ability to protect its interest, unless existing parties adequately represent that interest."

The District of Columbia Circuit has adopted a four-part test to determine whether a party should be permitted to intervene as of right. The application to intervene (1) must be timely; (2) the applicant must demonstrate a legally protected interest in the action; (3) the action must threaten to impair that interest; and (4) no party to the action can be and adequate representative of the applicant's interest.<sup>2</sup> Related to the party interest requirement is that Article III standing must also be demonstrated.<sup>3</sup> The State of Alaska meets these requirements and should be allowed to intervene as a matter of right.

#### **A. The Motion is Timely**

In evaluating the timeliness of a motion to intervene, the D.C. Circuit has stated:

The district court has much latitude in assessing the timeliness of a motion, but it must properly take account of the considerations relevant to that determination. In particular, timeliness is to be judged in consideration of all the circumstances, especially weighing the factors of

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<sup>2</sup> *Karsner v. Lothian*, 532 F.3d 876, 885 (D.C. Cir. 2008); *see also* 9<sup>th</sup> Circuit standards in *United States v. City of Los Angeles*, 288 F.3d 391, 397 (9<sup>th</sup> Cir. 2002) (quoting *Donnelly v. Glikman*, 159 F.3d 405, 409 (9<sup>th</sup> Cir. 1998)); *Smith v. Marsh*, 194 F.3d 1045, 1049 (9<sup>th</sup> Cir. 1999). The Ninth Circuit applies this test broadly in favor of intervention. *City of Los Angeles, supra*, 288 F.3d at 397-398; *see also Southwest Ctr. for Biological Diversity v. Berg*, 268 F.3d 810, 818 (9<sup>th</sup> Cir. 2001).

<sup>3</sup> *In re Endangered Species Act Section 4 Deadline Litigation-MDL NO. 216*, 704 F.3d 972, 976(D.C. Cir. 2013).

time elapsed since the inception of the suit, the purpose for which intervention is sought, the need for intervention as a means of preserving the applicant's rights, and the probability of prejudice to those already parties in the case.<sup>4</sup>

The State of Alaska's proposed intervention satisfies the timeliness requirement.

This motion is being filed during the early stage of the proceedings. The complaint was only filed on January 18, 2013. No substantive motions have been filed.<sup>5</sup> The State's need to intervene is essential to preserve the State's right to protect its very significant interests as explained below, and to participate in, and if necessary, appeal any adverse decision. This motion is being filed in time for the Court to get the benefit of the State's briefing, with no significant delay in moving for intervention. There is zero probability of prejudice to those parties already in the case.

**B. The State Has a Significant Protectable Interest and Standing in This Case**

The desire for self-management of natural resources, and particularly for management of Alaska's fishery resources and salmon fisheries, were driving forces behind Alaska statehood.<sup>6</sup> Ownership of the submerged lands of the territorial sea and the fishery resources in those waters passed to Alaska upon statehood under the Submerged Lands Act of 1953<sup>7</sup> and the Alaska Statehood Act.<sup>8</sup> General management authority over fish and wildlife

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<sup>4</sup> *Smoke v. Norton*, 252 F.3d 468, 471 (D.C. Cir. 2001).

<sup>5</sup> The only motion filed so far is a motion for change of venue by the federal defendants.

<sup>6</sup> *See, e.g., Pullen v. Ulmer*, 923 P.2d 54, 57 n. 5 (Alaska 1996); *Metlakatla Indian Community v. Egan*, 369 U.S. 45, 47, 82 S.Ct. 552, 555 (1962); Claus-M. Naske, *An Interpretative History of Alaskan Statehood* at 97-102 (1973).

<sup>7</sup> 43 U.S.C. §§ 1301-1356a. Alaska's seaward boundaries extend three geographical miles from the coastline. 43 U.S.C. § 1301(a)(2); 43 U.S.C. § 1312; *Alaska v. United States*, 545 U.S. 75, 79, 125 S.Ct. 2137, 2144 (2005). Title and ownership of natural resources, including fish, of the lands and waters within the boundaries of a state are vested in UCIDA v NMFS

within Alaska passed from the federal government to Alaska shortly after Alaska's adoption of a comprehensive fish and game code.<sup>9</sup>

The Alaska Constitution requires the State to manage these resources for the maximum benefit and use for all Alaskans.<sup>10</sup> Under Alaska's Constitution, fish are reserved to the people for common use,<sup>11</sup> and must be "utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses."<sup>12</sup> Exclusive rights of fishery generally are prohibited,<sup>13</sup> and although limited entry is allowed, it must impinge as little as possible on the equal access clauses of the Alaska Constitution.<sup>14</sup>

Under Alaska law, responsibility for fisheries management in Alaska is constitutionally vested in the Alaska legislature,<sup>15</sup> but regulatory authority has been statutorily

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and assigned to the respective States. *See* 43 U.S.C. § 1301(b); 43 U.S.C. § 1311(a); *see also Totemoff v. State*, 905 P.2d 954, 964 (Alaska 1995).

<sup>8</sup> Pub. L. No. 85-508, (1958), 72 Stat. 339.

<sup>9</sup> *See* Executive Order No. 10857, 25 Fed. Reg. 33 (Dec 29, 1959) (transferring management of fish and wildlife resources to the State of Alaska effective January 1, 1960); *see also Metlakatla Indian Community, supra*, 369 U.S. at 47 n.2, 82 S.Ct. at 555. State management is preempted only where clearly provided by statute or treaty, e.g. the Migratory Bird Treaty Act, 16 U.S.C. § 703 *et seq.*; the North Pacific Halibut Act, 16 U.S.C. 773; the Marine Mammal Protection Act, 16 U.S.C. 1361 *et seq.*; the Endangered Species Act, 16 U.S.C. § 1531 *et seq.*

<sup>10</sup> Alaska Const. Art. VIII, §§ 1-2.

<sup>11</sup> Alaska Const. Art. VIII, § 3.

<sup>12</sup> Alaska Const. Art. VIII, § 4.

<sup>13</sup> Alaska Const. Art. VIII, § 15.

<sup>14</sup> *See, e.g. Vanek v. State* 193 P.3d 283, 290 (2008); *State v. Ostrosky*, 667 P.2d 1184, 1191 (Alaska 1983).

<sup>15</sup> Alaska Const. Art. VIII, § 2.

delegated to the Alaska Board of Fisheries,<sup>16</sup> and administrative authority to the Commissioner of the Alaska Department of Fish and Game.<sup>17</sup> Subject to a subsistence priority,<sup>18</sup> the Alaska Board of Fisheries is authorized under state law to allocate fishery resources among various user groups including personal use, sport, and guided sport fisheries, as well as commercial fisheries.<sup>19</sup> Under this authority, the Alaska Board of Fisheries has adopted comprehensive fishery regulations for the Cook Inlet Fisheries, including detailed management plans for particular fisheries.<sup>20</sup>

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<sup>16</sup> See, e.g., AS 16.05.221; AS 16.05.241; AS 16.05.251.

<sup>17</sup> See, e.g., AS 16.05.010; AS 16.05.020; AS 16.05.050; AS 16.05.060; AS 16.05.241.

<sup>18</sup> AS 16.05.258.

<sup>19</sup> AS 16.05.251(e); 5 AAC 39.205. Personal use fishing is intended as a substitute for subsistence fishing and is often permitted in state nonsubsistence or federal nonrural areas, or in other areas where an adequate demonstration of customary and traditional use has not been made to support provision of a subsistence priority. See, e.g., 5 AAC 77.001. Findings that taking or use has been “customary and traditional” are generally required in order to provide a subsistence preference under either state or federal law, and only rural residents are eligible for the federal preference. See AS 16.05.258(a); 50 C.F.R. § 100.5(a)-(b); 50 C.F.R. § 100.16.

<sup>20</sup> See Alaska Administrative Code (AAC) Tit. 5 Chap. 21 Art. 3, 5 AAC 21.310-21.380 (commercial fishing regulations for the Cook Inlet Area, including Central District Drift Gillnet Fishery Management Plan, Northern District Salmon Management Plan, Kenai River Late-Run King Salmon Management Plan, Kenai River Late-Run Sockeye Salmon Management Plan, Upper Cook Inlet Salmon Management Plan, Kasilof River Salmon Management Plan, Northern District King Salmon Management Plan, Lower Cook Inlet Seine Fishery Management Plan); 5 AAC 77.500-77.549 (personal use fishing regulations for the Cook Inlet Area, including Upper Cook Inlet Personal Use Salmon Fishery Management Plan); 5 AAC 56.101-56.195 (sport fishing regulations for the Kenai Peninsula Area, including Riparian Habitat Fishery Management Plan for the Kenai Peninsula Area); 5 AAC 57.101-57.180 (sport fishing regulations for the Kenai River Drainage Area, including Russian River Sockeye Salmon Management Plan, Kenai River and Kasilof River Early-Run King Salmon Management Plan, Kenai River Coho Salmon Management Plan; Riparian Habitat Fishery Management Plan for the Kenai River Drainage Area).

Whether the party moving to intervene demonstrates sufficient interest to intervene is a “practical, threshold inquiry” for which “[n]o specific legal or equitable interest need be established.”<sup>21</sup> The moving party must demonstrate a “significantly protectable interest.”<sup>22</sup>

This standard clearly is met here. As discussed above, the State of Alaska has vital sovereign interests in regulating and managing fish and fisheries within State waters and the fishery habitat in and adjacent to State waters. At stake in this action is the loss of independence in managing the entire Cook Inlet commercial salmon fisheries in the waters of the EEZ within Cook Inlet now excluded from FMP coverage. The authority for the State to manage EEZ waters where no FMP exists is established in the Magnuson-Stevens Act at 16 U.S.C. § 1856(a)(3)(A)(i).

If the FMP applied to salmon fishing in the EEZ waters of Cook Inlet, even though the State could presumably continue to manage the waters within its own boundaries, intense coordination with federal agencies managing the EEZ fishery would be required and to the extent discretionary federal management objectives were inconsistent with State management, the State would have to adjust and accommodate for those federal actions. The fisheries in state and federal waters have traditionally been managed only by the state for very good reasons. The commercial fisheries that take place in EEZ waters in Cook Inlet are mixed stock fisheries, harvesting salmon of every species bound for spawning in many different river systems at different, but often overlapping times. A comprehensive management approach is

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<sup>21</sup> *Greene v. United States*, 996 F.2d 973, 976 (9<sup>th</sup> Cir. 1993); aff’d *Greene v. Babbitt*, 64 F.3d 1266 (9<sup>th</sup> Cir. 1995).

<sup>22</sup> *Donaldson v. United States*, 400 U.S. 517, 531 (1971), cited in *Southern Christian Leadership Conference v. Kelley*, 747 F.2d 777, 779 (D.C. Cir. 1984).

necessary to accommodate these challenges. Overlaying federal management on state management of the same stocks would make management much more complicated and expensive.

Even if the FMP delegated the authority to manage EEZ waters in Cook Inlet, the State would be necessarily subject to measures adopted as part of the FMP by the North Pacific Fishery Management Council, and would be required to demonstrate compliance with such measures on a regular basis, increasing the resources and costs currently associated with state management.

As discussed above, Alaska has exercised its sovereign authority to manage and conserve its fish, game, waters and lands through provisions in its constitution, its statutes, and the regulations of the Department of Fish and Game and the Board of Fisheries. The relief requested by plaintiff would interfere with Alaska's exercise of its sovereign jurisdiction over its fish, waters, and lands. It could "divest the state of its sovereign control" over fish and wildlife, an essential attribute of state sovereignty.<sup>23</sup>

The State of Alaska has significant interests relating to the fisheries and waters that are the subject of this litigation. The "interest" standard is met.<sup>24</sup>

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<sup>23</sup> See *Idaho v. Coeur d'Alene Tribe of Idaho*, 521 U.S 261, 283, 117 S.Ct. 2028, 2041 (1997).

<sup>24</sup> See *U.S. v. State of Oregon*, 745 F.2d 550, 552 (9<sup>th</sup> Cir. 1984) (no serious dispute that Idaho had an interest in anadromous fish runs in the upper tributaries of the Columbia River in Idaho and that its participation would not prejudice other parties, therefore its Rule 24(a)(2) motion to intervene in litigation involving a management plan which could have significant impact upon its fish resources should have been granted); *Forest Conservation Council v. U.S. Forest Service*, 66 F.3d 1489 (1995) (state's non-economic interests, such as the environmental health of, and wildfire threats to, state lands adjacent to national forests, which it had a legal duty to maintain, met the "interest" test for intervention).

For all of the same reasons listed above, the State of Alaska certainly has standing in this case. As the D.C. Circuit has noted:

To establish standing under Article III, a prospective intervenor – like any party must show: (1) injury-in-fact, (2) causation, and (3) redressability.<sup>25</sup>

Those standards are easily met by the state. If the plaintiffs’ challenges are successful in this action, it will cause the state to be injured by losing independent authority of the salmon fisheries in the parts of the EEZ excluded from FMP coverage. There is no way for the State to protect its interest in these legal issues other than by intervening and opposing plaintiffs’ challenges. On the other hand, successful intervention will allow the State to participate fully and appeal any ruling contrary to its interests.

**C. Disposition of the Action May Impair or Impede the State’s Ability to Protect its Interest**

Civil Rule 24(a)(2) requires intervention of a party with an interest relating to the subject of the action who is “so situated that disposing of the action may as a practical matter impair or impede the movant’s ability to protect its interest, unless existing parties adequately represent that interest.” The Rule 24 advisory committee note provides “[i]f an absentee would be substantially affected in a practical sense by the determination made in an action, he should, as a general rule, be entitled to intervene.”<sup>26</sup> This language has been read by the D.C. Circuit “as looking to the ‘practical consequences’ of denying intervention, even where the possibility of future challenges to the regulation remain” and “whether the task of reestablishing the status quo if the [plaintiff] succeeds in [a] case will be difficult and burdensome.”<sup>27</sup>

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<sup>25</sup> *Fund for Animals, Inc. v. Norton*, 322 F.3d 728, 732-33 (D.C. Cir. 2003).

<sup>26</sup> *Southwest Ctr. for Biological Diversity*, 268 F.3d at 822 (quoting Fed.R.Civ.P. 24 advisory committee's notes).

<sup>27</sup> *Fund for Animals*, 322 F.3d at 735.



The State must have the opportunity to fully participate in this case as a party in order to protect its interests against the implications of federal intervention and oversight in its fishery management. The idea of the possibility of a future challenge does not apply here because the State supports the federal regulation. The task of reestablishing the status quo (readoption of Amendment 12) if the plaintiffs successfully obtain a judgment that Amendment 12 is invalid will not just be difficult and burdensome, but could be impossible if the Court accepts all of plaintiffs arguments.

As discussed above, the broad relief plaintiffs seek against the Secretary, if granted, will impact the State's varied interests in this lawsuit. There is no other venue, forum or opportunity available for protection of the State's interests.

In *Sierra Club v. United States*, 995 F.2d 1478 (9th Cir. 1993), the Ninth Circuit rejected the Sierra Club's assertion the City of Phoenix could protect its interests in subsequent administrative proceedings. The court noted "the relief sought by the Sierra Club would constrain the EPA, which would not then be free to violate the terms of the declaratory and injunctive relief in later administrative proceedings." *Id.* at 1486. The Court also observed the City of Phoenix had no avenue to administratively appeal the constraints that might be placed on EPA's regulatory duties by virtue of an injunction.

Without intervention, the State of Alaska would be facing the same kind of situation here. If plaintiff's claims are successful, the National Marine Fisheries Service and the North Pacific Fishery Management Council would be under constraints imposed by judicial directives and interpretations in limiting the State's actions under the salmon fishery management plan in Alaska and the State will have had no say in those directives or interpretations.

**D. The Federal Defendants May Not Adequately Represent Alaska’s Interests**

If an applicant meets the conditions of timeliness and impairment of interest, intervention shall be permitted “unless the applicant’s interest is adequately represented by existing parties.” Fed. R. Civ. P. 24(a)(2). According to the United States Supreme Court, “[t]he requirement of the Rule is satisfied if the applicant shows that representation of his interest ‘may be’ inadequate; and the burden of making that showing should be treated as minimal.”<sup>28</sup> The D.C. Circuit Court has described this requirement as “not onerous.”<sup>29</sup> The Court must consider (1) whether the interest of a present party is such that it will undoubtedly make all the intervenor’s arguments; (2) whether the present party is capable and willing to make such arguments; and (3) whether the would-be intervenor would offer any necessary elements to the proceedings that other parties would neglect.<sup>30</sup>

In this case, the State’s interest and the federal defendants’ interests and legal positions may be somewhat different. Because the federal defendants do not share the same proprietary and sovereign interests as the State, they cannot necessarily be counted upon to adequately represent the State’s interests. While the federal defendants have an interest in avoiding “the costs of overlapping Federal management when the State is adequately managing the sport fishery and the salmon fisheries that occur in the areas removed” by Amendment 12,<sup>31</sup> they do not have the same interests in preserving state management for sovereignty and

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<sup>28</sup> *Trbovich v. United Mine Workers of America*, 404 U.S. 528, 538 n.10, (1972) (citation omitted).

<sup>29</sup> *Fund for Animals*, 322 F.3d at 735.

<sup>30</sup> *City of Los Angeles*, 288 F.3d at 398 (citing *Northwest Forest Resource Council v. Glickman* 82 F.3d 825, 838 (9<sup>th</sup> Cir. 1996)).

<sup>31</sup> 77 Fed. Reg. at 75572.

independent management interests. Also, the federal defendants' concerns about fishery issues in other parts of the nation could possibly motivate federal interpretations and legal positions that are detrimental to the State's interests in salmon fisheries in the EEZ off Alaska. Upon intervention, the State would be able to argue for a narrower judicial focus. The State qualifies for intervention of right.

#### **IV. Alternatively, the State of Alaska Should Be Allowed to Intervene Permissively**

Federal Civil Rule 24(b)(1) provides for permissive intervention on timely motion by anyone who "has a claim or defense that shares with the main action a common question of law or fact." In addition, Rule 24(b)(2) provides: "On timely motion, the court may permit a ... state governmental officer or agency to intervene if a party's claim or defense is based on: (A) a statute or executive order administered by the officer or agency; or (B) any regulation, order, requirement, or agreement issued or made under the statute or executive order." Permissive intervention is appropriate under these standards, even if the Court were to find the State does not find intervention of right is warranted under Federal Civil Rule 24(a).

Permissive intervention should be allowed under Rule 24(b)(1) as long as the applicant seeking intervention establishes that: "1) it shares a common question of law or fact with the main action; 2) its motion is timely; and 3) the court has an independent basis for jurisdiction over the applicant's claims."<sup>32</sup> Under this standard, neither the inadequacy of representation, nor a direct interest in the subject matter of the action need be shown.<sup>33</sup> Once the party seeking to intervene has demonstrated a common question of law or fact, it is within the

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<sup>32</sup> See *Donnelly v. Glickman*, 159 F.3d 405, 412 (9<sup>th</sup> Cir. 1998).

<sup>33</sup> *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1108 (9<sup>th</sup> Cir. 2002).

discretion of the court whether to allow intervention.<sup>34</sup> The D.C. Circuit has “long acknowledged the ‘wide latitude afforded’ to district courts under Rule 24(b).”<sup>35</sup> Where parties share similar interests in the outcome of the litigation, a district court may grant intervention where the court believes the party seeking intervention will assist in the resolution of the case.

In *Kootenai Tribe of Idaho v. Veneman*, for instance, the Ninth Circuit Court of Appeals found that the District Court had acted within its discretion when it granted permissive intervention under Rule 24(b) to environmental groups who sought to intervene in order to assist the Environmental Protection Agency’s defense of the Roadless Rule. The District Court stated that “the magnitude of this case is such that both Applicants’ intervention will contribute to the equitable resolution of this case.” The Ninth Circuit found that the court’s recognition that “the presence of intervenors would assist the court in its orderly procedures leading to the resolution of the case, which impacted large and varied interests” was within the District Court’s discretion.<sup>36</sup>

The State meets all of the requirements for permissive intervention under this rule. The State does not anticipate raising any additional issues in the litigation; rather, it hopes to bring the perspective of the party whose stake in the outcome is probably greater than the federal defendants’. The State’s defenses in this action will address questions of law and fact that are in common with those already raised. The State has significant interest in, and knowledge of, the fishery resources in the coastal areas of Alaska; it has much to protect and much to contribute to the equitable resolution of this case. As discussed above, this motion is

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<sup>34</sup> *Id.* at 1111.

<sup>35</sup> *In re Endangered Species Act Section 4 Deadline Litigation*, 704 F.3d at 980.

<sup>36</sup> *Id.*

timely and the State's intervention will not delay the resolution of the case. Also, because the action involves a federal question, and because the State's interests derive from the federal question presented, the court has an independent basis for jurisdiction in this matter.

Also, Amendment 12 and its implanting regulations were initiated by the North Pacific Fishery Management Council, upon which the Commissioner of the Alaska Department of Fish and Game sits by statutory directive. 16 U.S.C. § 1852(b)(1)(A). Thus the commissioner has shared responsibility for administration of the FMP provisions of the Magnuson-Stevens Act. 16 U.S.C. § 1852(h)(1). This provides an alternative basis for permissive intervention under Rule 24(b)(2).

## V. CONCLUSION

For the reasons stated above, the State of Alaska respectfully requests that the court grant its motion to intervene of right under Rule 24(a)(2) to protect its interests in the face of UCIDA's claims. In the alternative, the State of Alaska requests that the Court grant it leave to intervene permissively pursuant to Rule 24(b) with regard to all claims raised by UCIDA.

Respectfully submitted this 4th day of April, 2013.

MICHAEL C. GERAGHTY  
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**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that on April 4, 2013, the foregoing was electronically filed with the Clerk of the Court via the CM/ECF system, which will send notification of such to the attorneys of record:

Beth Ginsberg  
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# EXHIBIT D

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Cook Inlet Fishermen's Fund*

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF ALASKA

UNITED COOK INLET DRIFT ASSOCIATION  
AND COOK INLET FISHERMEN'S FUND,

Plaintiffs,

v.

NATIONAL MARINE FISHERIES SERVICE ET  
AL.,

Defendants.

Case. No. 3:13-cv-00104-TMB

**DECLARATION OF JEFF FOX**

1. My name is Jeff Fox. I make this declaration in support of Plaintiff's Motion to Enforce Judgment based upon personal knowledge except where otherwise indicated below.

2. I have worked for nearly 30 years for the Alaska Department of Fish and Game (ADFG) in managing commercial fisheries, before retiring in 2011. I have worked in Kodiak, Chignik, Sand Point, Dutch Harbor, Cold Bay, and, finally, Soldotna managing the Cook Inlet fishery. I was the Assistant Area Management Biologist in Soldotna from 1990 until 1999, and the Area Management Biologist from 1999 until 2011.

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3. As the Area Management Biologist in Soldotna for 21 years, I gained extensive experience in managing the commercial Cook Inlet salmon fishery. As part of that role I also gained a firm understanding of the historical management of the commercial fishery in Cook Inlet prior to my tenure. Since my retirement in 2011, I have continued to follow commercial salmon fishery management issues in Cook Inlet.

4. Commercial fishing in Cook Inlet presently consists of two primary gear types: (a) driftnet fishing from vessels and (b) set net fishing from shore-based operations.

5. Management of the Cook Inlet fishery has always relied on a regular period fishing schedule with adjustments by emergency order to achieve desired harvest rates or achieve escapement goals. Escapement goals are targets for a fishery to allow enough spawning salmon to reach their spawning beds and produce the next generation of salmon. If escapement goals are set too low, then the fishery can become over-fished. If escapement goals are set too high, then surplus harvest opportunities are lost. Chronic over-escapement can also reduce stock fitness.

6. Historically, commercial salmon fishing in Cook Inlet occurred five to seven days per week from the inception of the fishery in the 1880s until 1924, when, under the White Act, the fishery was limited to three and a half days per week in order to achieve an approximate 50 percent harvest rate. For most stocks of Pacific salmon, a 50 to 70 percent harvest rate allows sufficient escapement to achieve the maximum sustainable yield. As fishing pressure and efficiency changed during the 1950s and 1960s, fishing time was cut back. In 1971 the fishery was changed to a two day per week regular fishing schedule for 12 hours per day (currently the fishing days are Monday and Thursday). In 1974 the fishery was limited, establishing an

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optimum number of participants, under the State of Alaska's Limited Entry Program, which prevented further increases in participation in the commercial fishery.

7. There are many reasons for the use of a regular fishing schedule of two 12-hour fishing periods per week that has evolved in Cook Inlet. It allows harvest on all stocks and species of salmon throughout their runs. It spreads the harvest over time and allows the processing sector to process the fish without a serious glut of fish arriving at the dock all at once and overwhelming processing capacity. The regular fishing periods break up large schools of salmon, spreading out their entry patterns into rivers. This schedule of fishing is also a vital tool in the management of the fishery. The silty glacial waters of Cook Inlet prevent the use of aerial surveys or most other methods to assess salmon run strength and timing. This fishing occurs a few days, to weeks, prior to the escapement enumeration that is measured in the rivers. ADFG utilizes a daily test boat to estimate the number, and species, of salmon moving into the fishing area. Within 12 - 24 hours after a commercial fishing period ADFG knows how many of each species of salmon were harvested. The combination of these two sets of data, analyzed in the context of historical models, is essential for managing the fishery with data instead of conjecture. If the run is materializing as expected, additional fishing time may be utilized inlet-wide or in specific areas targeting specific rivers. If the run is weaker than predicted, fisheries can be closed to achieve desired escapements.

8. Prior to 1996, the fishery management decisions (by emergency order) in Cook Inlet that allowed additional fishing time or restrictions of the regular fishing periods were made, during the season, by ADFG area biologists to increase harvest or reduce the harvest as needed to meet escapement goals. In 1996 the Alaska Board of Fisheries (BOF) began progressively

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limiting fishing, or not allowing additional fishing time, on specific dates. The BOF reviews the management plans for Upper Cook Inlet fisheries every three years. In 1996 the BOF restricted one of the regular fishing days to a small section of the fishing area. In 1999 two more regular fishing periods were restricted to a small section of the fishing area. In 2002 and 2005, two more regular fishing periods were restricted.

9. The purported reason for most of these restrictions was to reduce harvest, and increase escapement, of certain Susitna River sockeye salmon stocks. Sonar counts of these fish in the Susitna River were low. Restricting the location of commercial drift gillnetting in the inlet was a strictly theoretical approach to solving that problem. By 2008 ADFG discovered that inaccurate sonar counters used in the Susitna River had been grossly underestimating actual sockeye returns there; the sonar counter had only been counting one out of every three or four fish that swam past it. Genetic studies in Cook Inlet done by ADFG in 2012 and 2013 proved that time and area restrictions do not work to selectively protect Susitna River sockeye stocks. Despite this new information, none of the restrictions placed on the commercial fishery to solve the non-existent problem have been removed by the BOF. In 2011 and 2014 they continued to modify the restrictions on regular fishing periods and add more restrictions for additional periods.

10. Between 1999 and 2014 the BOF also added provisions on the restrictions related to the projected run size of the Kenai River sockeye salmon. For example:

*From July 16–31: if the Kenai River sockeye salmon run strength is:*

- *less than 2.3 million fish, all 12-hour fishing periods restricted to the expanded corridor.*
- *between 2.3 and 4.6 million fish, one 12-hour period per week is restricted to one or more of the following areas: Drift Area 1, expanded corridor, Anchor Point section; the remaining weekly 12-hour period is restricted to one or more of the following areas: expanded corridor, Anchor Point Section.*

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- *greater than 4.6 million, one regular 12-hour fishing period per week is restricted to the expanded corridor and the Anchor Point Section.*

These types of time and area restrictions prevent adaptive in-season management, and the restriction of regular fishing periods interferes with ADFG's ability to assess the run strength. As a result, the Kenai River has exceeded its in-river sockeye escapement goal in nine of the last 10 years and at least 14 of the last 20 years. These over-escapements reduce the yield in the current year and result in diminished run sizes in the future.

11. In addition, some of the changes made by the BOF during this timeframe were intended to prevent the commercial drift gillnetters from catching certain stocks of coho salmon in an attempt to reallocate fish into certain rivers, surplus to escapement needs, in order to make sport fisheries more enjoyable. Kenai River sockeye in-river goals have been progressively raised by the BOF for the same reason. In my experience, the BOF often called these changes conservation measures, rather than allocation decisions, but the results were clearly allocative. Ironically, the increased sport fishery effort has resulted in serious in-river habitat degradation problems, such as hydrocarbon pollution and turbidity levels that exceed clean water standards, and miles of trampled riverbanks. A healthy riparian habitat zone is essential to the survival of rearing salmon.

12. The BOF restrictions on the commercial fishing periods have made the drift fleet much less effective and removed ADFG's most important tool for assessing salmon run strength and timing. The result of these restrictions is that millions of salmon have been lost to harvest opportunities. The preset escapement goals are already set too high, and ADFG is unable to stay within even those escapement goals.

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13. The BOF and ADFG are not managing the salmon fishery in Cook Inlet in a manner consistent with the Magnuson-Stevens Fishery Conservation and Management Act (MSA) or the MSA's national standards. The MSA contemplates optimum yield and maximum sustainable yield. The BOF's escapement goals are not scientifically sound and are not intended to produce maximum sustainable yield, or optimum yield, for the fishery.

14. My understanding is that the National Marine Fisheries Service (NMFS) and the North Pacific Fishery Management Council (Council) are proposing to develop a fishery management plan that would address fishing only federal waters. This would be unworkable. There is only one fishery, not two separate fisheries, and the Cook Inlet salmon stocks need to be managed as a unit throughout their range. The areas under federal jurisdiction are essential to the entire management system. As set forth above, proper management of fishing in federal waters, especially early in the season, is essential to understanding run strength and run timing and is essential to avoiding over-escapement on the river systems and overwhelming near-shore fisheries and the local processing capacity.

15. My understanding is the NMFS and the Council are considering adopting the state's escapement goals for their fishery management plan. As set forth above, many of the state's escapement goals are scientifically unsound. The escapement goals need to be reviewed and revised by the Council's Science and Statistical Committee or some other qualified group in order to achieve optimum yield from all salmon stocks. There are 1,374 anadromous streams in Cook Inlet, and the goals need to provide for optimum yield for each stock of chinook, sockeye, coho, pink, and chum salmon, not each individual tiny stream, which is the current weak stock management approach being used by ADFG (see Table 1 below).

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Table 1. Total number of anadromous streams by species and district in Upper Cook Inlet.

	Northern District					Total
	Chinook	Sockeye	Coho	Pink	Chum	
First Order	36	28	60	42	23	61
Total	361	261	809	183	136	1,001

	Central District					Total
	Chinook	Sockeye	Coho	Pink	Chum	
First Order	10	15	39	14	20	49
Total	84	133	281	39	31	373

	Upper Cook Inlet Area					Total
	Chinook	Sockeye	Coho	Pink	Chum	
First Order	46	43	99	56	43	110
Total	445	394	1,090	222	167	1,374

First order stream starts at salt water

16. There are currently 36 escapement goals in Upper Cook Inlet, and most are “set unsustainably high” according to Clark et al., 2014.<sup>1</sup> Many of these goals are scientifically invalid, yet ADFG did not even review 27 of the 36 goals as required by its own policy prior to the 2017 BOF meeting. The ADFG has also put in place numerous escapement goals on small streams, which are used to close or restrict the commercial fishery. For instance ADFG used escapements to Jim Creek in Knik Arm in the Northern District, with a goal of 450 to 1,400 coho, and the Little Susitna River in the same general area, with a goal of 10,100 to 17,700 coho, to close the commercial fishery in the Central District, even though the upper end of these coho

<sup>1</sup> Clark, R. A., D. M. Eggers, A. R. Munro, S. J. Fleischman, B. G. Bue, and J. J. Hasbrouck. 2014. An evaluation of the percentile approach for establishing sustainable escapement goals in lieu of stock productivity information. Alaska Department of Fish and Game, Fishery Manuscript No. 14-06, Anchorage.

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escapement goals is exceeded 56 percent<sup>2</sup> of the time. Also, according to Willette et al., 2003, the coho return to Cook Inlet is approximately two million fish<sup>3</sup> with a commercial harvest of approximately 200,000, or about 10 percent, not the 50 to 70 percent that is needed. So, to supply a few hundred additional fish to the sport fishery in a few small rivers, the commercial harvest of several hundred thousand to over a million coho salmon is forgone. Additionally, there are hundreds of thousands to millions of sockeye, pink, and chum salmon which are also under-harvested in the mixed-stock commercial fishery because of these inflated goals, unnecessary allocations, and prescriptive management plans.

17. For stocks without an escapement goal, like pink and chum salmon, an alternative method can be used, such as catch per unit of effort, which has been used in the past, or an acceptable harvest rate developed from the Willette et al. mark recapture publication listed above. None of this management scheme needs to be overly complex or burdensome and can be developed and utilized in a very short timeframe.

18. It is my understanding that NMFS and the Council are contemplating deferring to the state as to the time and area restrictions/closures for the fishery. This too would be inconsistent with the MSA, which requires the use of the best available science and requires fair and equitable allocation decisions. As set forth above, many of the state's present time/area

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<sup>2</sup> Munro, A., E. Volk. 2015. Summary of Pacific Salmon Escapement Goals in Alaska with a Review of Escapements From 2007 to 2015. Alaska Department of Fish and Game Fishery Manuscript Series No. 16-04, Anchorage.

<sup>3</sup> Willette, T.M., Robert DeCino, Nancy Gove. 2003. Mark-Recapture Population Estimates of Coho, Pink and Chum Salmon Runs to Upper Cook Inlet in 2002. Alaska Department of Fish and Game Regional Information Report No. 2A03-20, Anchorage.

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restrictions on the Cook Inlet were not based on sound science (or any science at all) but on faulty data and supposition that have since been proven to be false. And many of the time/area closures implemented under the guise of conservation measures were actually imposed for allocative purposes in a manner that was not transparent, fair, or equitable.

I hereby declare under penalty of perjury of the laws of the United States of America that the foregoing information is true and correct to the best of my knowledge and belief.

**DATED:** August 30, 2019

  
\_\_\_\_\_  
Jeff Fox

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**CERTIFICATE OF SERVICE**

I hereby certify that on September 4, 2019 I filed a copy of the foregoing document, *Declaration of Jeff Fox*, was served electronically on the below parties.

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*/s/ Jason T. Morgan*

\_\_\_\_\_  
Jason T. Morgan

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# EXHIBIT E

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IN THE UNITED STATES DISTRICT COURT  
 FOR THE DISTRICT OF ALASKA

UNITED COOK INLET DRIFT	)	
ASSOCIATION, and COOK INLET	)	
FISHERMAN’S FUND,	)	CIVIL ACTION NO.: 3:13-cv-00104-TMB
	)	
Plaintiffs,	)	
	)	<b>MEMORANDUM IN OPPOSITION TO</b>
v.	)	<b>UCIDA’S MOTION FOR ISSUANCE OF</b>
	)	<b>FINAL JUDGMENT</b>
NATIONAL MARINE FISHERIES	)	
SERVICE, et al,	)	
	)	
Defendants.	)	
	)	

**INTRODUCTION**

This Court has two options when it enters judgment in favor of plaintiffs (UCIDA). First, having the power under the Administrative Procedure Act (APA) to “hold unlawful and set aside” final agency action, 5 U.S.C. § 706(2), the Court may vacate the invalid part of the 2012 final rule by the National Marine Fisheries Service (NMFS), 77 Fed. Reg. 75570, and remand to the agency for further consideration. Specifically, because the Ninth Circuit held that “Amendment 12 is therefore contrary to law *to the extent it removes Cook Inlet from the FMP,*” *UCIDA v. NMFS*, 837 F.3d 1055, 1065 (9th Cir. 2016) (emphasis added), the Court can hold

unlawful and set aside the part of 50 CFR 679.2 that implemented Amendment 12's removal of the Cook Inlet Area from the fishery management plan (FMP) by redefining the FMP's West Area to exclude Cook Inlet. 77 Fed. Reg. at 75587. The effect of such an order would be to *include* the Cook Inlet Area within the West Area. Commercial salmon fishing is prohibited in the West Area. 50 CFR 679.7(h)(2). For the first time ever, there would be a federal prohibition on commercial salmon fishing in the federal waters of Cook Inlet.

Second, having the discretion when equity demands it to keep in place a rule promulgated contrary to the APA while the rule is remanded to an agency for further proceedings, *see, e.g., California Communities Against Toxics v. EPA*, 688 F.3d 989, 992 (9th Cir. 2012), the Court may—and should—temporarily keep in place the invalid part of the 2012 rule, and remand to NMFS for further proceedings. Such an order would maintain the status quo and keep the federal waters of Cook Inlet open for commercial salmon fishing this year, thereby realizing the expectations of thousands of Alaskans whose livelihoods depend on this fishery. Keeping Cook Inlet open for commercial salmon fishing also protects salmon stocks by decreasing the chance of overescapement.

Remanding the rule to NMFS without vacatur would also continue (for the time being) state management of the fishery. Contrary to the claim by the commercial fishermen at UCIDA that state management has led to “serious stock declines” of Cook Inlet salmon (UCIDA Br. at 6-9), the independent experts at NMFS and the North Pacific Fishery Management Council found that the State's management of commercial salmon fishing in Cook Inlet “is consistent with the policies and standards of the Magnuson-Stevens Act,” 77 Fed. Reg. at 75570, and is “a more effective management system for preventing overfishing of Alaska salmon than a system that places rigid numeric limits on the number of fish that may be caught,” *id.* at 75571. Thus, the

record in this case shows that the State manages the Cook Inlet commercial salmon fishery consistent with the National Standards of the MSA and does a better job of managing the fishery to prevent overfishing than how the fishery can be managed under an FMP. The Ninth Circuit did not disturb these findings by NMFS.

The Court should not grant any of the following requests by UCIDA:

- The Court should not vacate all of the 2012 final rule that implements Amendment 12, especially not the parts of the rule that affect the East Area, the Prince William Sound Area, and the Alaska Peninsula Area, since the Ninth Circuit’s decision was explicit and limited, only holding that Amendment 12 was “unlawful to the extent it removes Cook Inlet from the FMP.”
- The Court should not direct NMFS to take any specific action, since the Court’s power under the APA is generally limited to the authority to “hold unlawful and set aside” final agency action; only in “rare circumstances” not present here should a court remand with specific instructions to the agency.
- The Court should not declare that the 1990 FMP is “hereby reinstated” because that FMP is outdated and invalid, and because what UCIDA really wants is the Court to re-write the 1990 FMP.

For all of these reasons, and as explained below, the Court should deny UCIDA’s Motion for Issuance of Final Judgment.

## **BACKGROUND**

### **I. The three historical commercial salmon net fisheries: Cook Inlet, Prince William Sound, and Alaska Peninsula.**

As the Ninth Circuit explained, the federal waters of the Cook Inlet commercial salmon fishery is one of three historical commercial salmon net fisheries in Alaska that extend into the

exclusive economic zone, but have always been managed by the State. *UCIDA*, 837 F.3d at 1057-58. The origin of these fisheries dates to the 1950's when the United States, Canada, and Japan created the International Convention for the High Seas Fisheries of the North Pacific Ocean, which generally banned commercial salmon net fishing in the federal waters adjacent to Alaska, but exempted from the ban the three traditional salmon net fisheries. *Id.*

The convention was implemented by the North Pacific Fisheries Act of 1954. *Id.* Under the 1954 Act, the Federal government issued regulations prohibiting commercial salmon net fishing in the exclusive economic zone adjacent to Alaska except as allowed under state regulations. *Id.* At the time and continuing until the present, the State permitted and managed three salmon net fisheries partly extending into the exclusive economic zone: in the (1) Cook Inlet Area, (2) Prince William Sound Area (also known as Copper River), and (3) Alaska Peninsula Area (also known as False Pass). 44 Fed. Reg. 33250, 33267 (June 8, 1979). In these three areas, commercial salmon net fishing was allowed and federal regulation was to mirror State regulation. *UCIDA*, 837 F.3d at 1058 (citing 50 C.F.R. § 210.10 (repealed)).

In 1976, Congress passed the Magnuson–Stevens Act (MSA), establishing a national program for the conservation of fishery resources, and providing the Secretary of Commerce with fishery management authority in the exclusive economic zone (between three and 200 miles from the coastline of the United States); the Secretary's authority under the MSA is in large part delegated to NMFS. *Id.* After passage of the MSA, the State continued to manage these three fisheries.

In 1978, the Council adopted an FMP for salmon fisheries near Alaska; the FMP was approved and published by NMFS in 1979. 44 Fed. Reg. 33250; RULEFMP\_0001060. The FMP

has been amended numerous times; the last major revision prior to 2012 was in 1990.

RULEFMP\_0001062.

## **II. The 1990 salmon FMP.**

Under the 1990 FMP, Alaskan federal waters were divided into East and West Areas. NPFMC\_0000975. In the East Area, which is east of Cape Suckling and includes all of Southeast Alaska, the troll fishery is the only commercial salmon fishery allowed. NPFMC\_0000975-76. The 1990 FMP established six objectives for management of the commercial salmon troll fishery in the East Area, recognized that management was to be consistent with the MSA and Pacific Salmon Treaty, and deferred management of the East Area to the State. NPFMC\_0000997-99. At the time the 1990 FMP was adopted, the MSA provided that a state could regulate in-state fishing vessels in the exclusive economic zone, subject, of course, to the Supremacy Clause's requirement that the state regulations be consistent with federal law. 16 U.S.C. § 1856(a)(3) (1990). At that time, the MSA did not provide for explicit delegation of fishery management authority to a state through an FMP.

In the West Area, which is west of Cape Suckling and included (prior to Amendment 12) the Cook Inlet, Prince William Sound, and Alaska Peninsula Areas, the 1990 FMP did not establish any management objectives because under the plan commercial salmon fishing in the West Area was not allowed except in the three historical salmon net fisheries, which were provided for by "other Federal law." NPFMC\_0000975.

Section 9 of the 1990 FMP provided for review by the Secretary of Commerce of State salmon fishing regulations relating to fisheries in the exclusive economic zone off the coast of Alaska, and of State inseason management actions, all for consistency with the FMP, the MSA, and other applicable Federal law. NPFMC\_0001012-14.

### **III. The Sustainable Fisheries Act of 1996.**

Section 306(a) of the MSA was amended by the Sustainable Fisheries Act of 1996 to allow FMPs to explicitly delegate management of a fishery in federal waters to a state, after which the state could regulate all vessels in the fishery. Pub. L. No. 104-297, § 112(a), 110 Stat. 3559, 3595-96 (1996) (codified at 16 U.S.C. § 1856(a)(3)(B)). For fisheries delegated to state management, the Secretary reviews state fishing regulations and notifies a state and the appropriate council when the Secretary determines that state regulations are not consistent with the FMP. *Id.* If the notified state does not correct the inconsistencies identified by the Secretary the authority of the state to regulate vessels in the fishery terminates. *Id.*

UCIDA states that the “sole purpose” of Section 9 was to “establish a process for federal supervision of state fishery management as required by the MSA for delegation under 16 U.S.C. § 1856(a)(3),” (UCIDA Br. at 12), but UCIDA may have overlooked the fact that in 1990 when Section 9 was adopted the MSA did not explicitly provide for delegation of management authority to a state through an FMP—as noted, that provision of the MSA was not added until 1996. It was also not until 1996 that the MSA required Secretarial review of state fishing regulations promulgated pursuant to authority delegated through an FMP.

### **IV. Amendment 12.**

Amendment 12 made it clear that management of commercial and sport salmon fishing in the East Area is explicitly delegated to the State through the FMP. 77 Fed. Reg. at 75570 (“In the East Area, Amendment 12 maintains the current scope of the FMP and reaffirms that management of the commercial and sport salmon fisheries in the East Area is delegated to the State.”); *see also* 50 CFR 679.3(f) (2012) (“Management of the salmon commercial troll fishery and sport fishery in the East Area of the Salmon Management Area, defined at § 679.2, is



delegated to the State of Alaska.”). Amendment 12 also provides for the Secretarial review of State management measures in the East Area required for delegated programs under the Sustainable Fisheries Act. RULEFMP\_0001114-18.

UCIDA is incorrect in its assertion that the procedure outlined in Section 9 of the 1990 FMP for Secretarial review is consistent with the Sustainable Fisheries Act, 16 U.S.C. § 1856(a)(3)(B). Section 9 does not explicitly provide for the Secretary to “promptly notify the State and the appropriate Council of such determination [that a state regulation is inconsistent with the FMP] and provide an opportunity for the State to correct any inconsistencies identified in the notification,” after which if the inconsistency is not corrected the state’s authority to regulate the fishery terminates. § 1856(a)(3)(B). By contrast, Amendment 12’s procedure for Secretarial review explicitly and precisely complies with § 1856(a)(3)(B). *See* RULEFMP\_0001117 (“NMFS will promptly notify the State of Alaska and the Council, and the petitioner if applicable, of its determination and provide the State with an opportunity to correct the inconsistencies identified in the notification.”) & RULEFMP\_0001118 (providing that if the State does not correct the inconsistency NMFS may withdraw authority delegated to the State).

Among other changes to the FMP, Amendment 12 identified six new management objectives to guide salmon management under the FMP. RULEFMP\_0001063; 77 Fed. Reg. at 75570. Amendment 12 also excluded the sport salmon fishery and the three historical commercial salmon net fisheries from the West Area. *Id.* In adopting Amendment 12, the Council considered whether to include Cook Inlet within the FMP and delegate management of the fishery to the State through the FMP, and rejected that alternative. RULEFMP\_0000696-98; *see also* RULEFMP\_0000706 (noting that if Cook Inlet were managed under an FMP it “would

result [in] harvests being [unnecessarily] restricted in years when returns were above forecast and harvests too high in years when returns were below forecast”).

#### **V. UCIDA’s complaint.**

UCIDA filed this case to challenge “NMFS’s decision to approve changes to the Salmon FMP to eliminate federal waters in Cook Inlet from that FMP.” (Complaint ¶ 2.) UCIDA mentioned the Prince William Sound and Alaska Peninsula fisheries just once in its complaint, in a paragraph providing background, and never suggested that Amendment 12’s removal of these two fisheries from the West Area violated the MSA. (Complaint ¶ 54.) UCIDA never mentioned Amendment 12’s removal of the sport fishery from the West Area. UCIDA also never suggested that there was anything improper about Amendment 12 explicitly delegating to the State management of the commercial and sport salmon fisheries in the East Area—just the opposite, UCIDA averred that Amendment 12’s explicit delegation of management authority over those fisheries was appropriate. (Complaint ¶ 75.)

Otherwise, UCIDA’s complaint focused exclusively on Cook Inlet. (*See, e.g.*, Complaint ¶ 96 (alleging that Amendment 12 violated the MSA because “because the Cook Inlet salmon fishery clearly requires conservation and management” and needs to be included within an FMP); Request for Relief ¶ C (requesting an order that NMFS be instructed to “to develop an FMP for Cook Inlet”).)

#### **VI. The Ninth Circuit’s decision.**

Likewise, the Ninth Circuit focused exclusively on Amendment 12’s treatment of Cook Inlet. *See, e.g., UCIDA*, 837 F.3d at 1062 (noting that “The government concedes that Cook Inlet is a fishery under its authority that requires conservation and management.”). The Ninth Circuit’s explicit and limited holding was that “Amendment 12 is therefore contrary to law to the extent it

removes Cook Inlet from the FMP.” *Id.* at 1065. The Ninth Circuit did not reach any of UCIDA’s other challenges to Amendment 12. *Id.* at 1065 n.4.

Among other things, the Ninth Circuit did not disturb NMFS’s conclusion that the State’s management of the Cook Inlet fishery is “consistent with the policies and standards of the Magnuson-Stevens Act,” 77 Fed. Reg. at 75570, and is “a more effective management system for preventing overfishing of Alaska salmon than a system that places rigid numeric limits on the number of fish that may be caught,” *id.* at 75571. The court simply held that under the MSA it was contrary to law for NMFS to approve an FMP amendment that removed Cook Inlet from the FMP for the purpose of deferring to State management. According to the Ninth Circuit: “The Act is clear: to delegate authority over a federal fishery to a state, NMFS must do so expressly in an FMP.” *UCIDA*, 837 F.3d at 1063.

## ARGUMENT

The appropriate remedy in this case is for the Court to remand but keep in place the part of the 2012 rule that the Ninth Circuit found to be invalid.

### **I. The Court should remand but temporarily keep in place the invalid part of the 2012 rule.**

“[U]nder settled principles of administrative law, when a court reviewing agency action determines that an agency made an error of law, the court’s inquiry is at an end: the case must be remanded to the agency for further action consistent with the corrected legal standards.” *N. Carolina Fisheries Ass’n, Inc. v. Gutierrez*, 550 F.3d 16, 20 (D.C. Cir. 2008) (quoting *PPG Indus. v. U.S.*, 52 F.3d 363, 365 (D.C. Cir. 1995), citing *SEC v. Chenery Corp.*, 318 U.S. 80, 94-95 (1943)); *see also Earth Island Inst. v. Hogarth*, 494 F.3d 757, 770 (9th Cir. 2007) (“ordinary remedy ... is to remand for further administrative proceedings”).

The only error in Amendment 12 identified by the Ninth Circuit was the removal of Cook Inlet from the FMP for the purpose of deferring to state management. Therefore, the only invalid part of the 2012 rule is the part that implemented Amendment 12's removal of Cook Inlet from the FMP; in other words, the part of 50 CFR 679.2 that redefined the West Area to exclude the Cook Inlet Area.<sup>1</sup>

The Court will have to decide whether to keep the invalid part of § 679.2 in place during remand. “A flawed rule need not be vacated.” *California Communities*, 688 F.3d at 992. A court has discretion as a matter of equity to temporarily keep the invalid rule in place. *Id.* “Whether agency action should be vacated depends on how serious the agency’s errors are ‘and the disruptive consequences of an interim change that may itself be changed.’” *Id.* (quoting *Allied-Signal, Inc. v. U.S. Nuclear Regulatory Comm’n*, 988 F.2d 146, 150–51 (D.C. Cir. 1993)). Even when there is no question that a rule is substantively flawed, the Court “must balance the[] errors against the consequences of [vacatur.]” *Id.* The Court should exercise its discretion here and remand without vacatur for the following reasons.

First, temporarily keeping the invalid part of § 679.2 in place will allow the vitally important Cook Inlet salmon fishery to remain open this year. It has been estimated that the seafood industry in Southcentral Alaska—which includes Prince William Sound and Cook Inlet—directly employs more than 10,000 workers and creates approximately 7,000 full time equivalent jobs. The McDowell Group, *The Economic Value of Alaska’s Seafood Industry*, December 2015, at 16 (available at <https://goo.gl/LLYfvQ>). Salmon represents 86% of the wholesale value of fish species harvested in Southcentral Alaska. *Id.* at 17. While it may not be

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<sup>1</sup> Even though the Ninth Circuit did not find fault in any other part of Amendment 12, it is possible that the Council will decide to adopt an FMP amendment that includes all of the three historical salmon fisheries, and not just the Cook Inlet Area, when it revisits the FMP.

easy to quantify the economic impact of closing salmon fisheries in the federal waters of Cook Inlet, even if state fisheries are kept open, it cannot be disputed that such a closure would cause a severe adverse impact on those who depend on the Cook Inlet salmon fishery. (*Cf.* Huebsch Decl. ¶ 8 (Cook Inlet drift fisherman alleging that “Our average fishing income for the last decade is less than a quarter of what it was twenty years ago” due to alleged declining harvests of salmon).)<sup>2</sup>

Second, temporarily keeping the federal waters of the Cook Inlet salmon fishery open will make it easier for state managers to control escapement of salmon through the commercial harvest of Cook Inlet salmon stocks. UCIDA in particular has been concerned about the effects of overescapement on salmon stocks. (Huebsch Decl. ¶ 11 (“Chronic over-escapements like these not only reduce future runs of salmon, they also waste harvestable surpluses of fish that would otherwise benefit fishers, the seafood industry and the regional and State economies.”).)

Third, keeping the rule in place will not harm UCIDA. Although UCIDA attempts to use affidavits—that are not part of the administrative record—to relitigate its claim that the State does not manage the Cook Inlet salmon fishery consistent with the National Standards, the record in this case shows just the opposite. The Ninth Circuit did not disturb this Court’s finding that it was not arbitrary and capricious for NMFS to agree that the State manages the Cook Inlet salmon fishery consistent with the National Standards.

UCIDA appears to agree that the Cook Inlet salmon fishery should remain open, although UCIDA contends the fishery should remain open and be managed under the (invalid) 1990 FMP. Whatever the method of keeping the fishery open, UCIDA contends that the Court should give

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<sup>2</sup> The economic impact on Alaskans of vacating all of Amendment 12’s implementing regulations, if that also led to a closure of the Prince William Sound and Alaska Peninsula salmon fisheries, would undoubtedly be even more severe.

NMFS and the Council just two years to develop a more permanent path forward for the fishery. If the Council determines that a new FMP with management measures should be adopted for the Cook Inlet fishery, as opposed to simply closing the fishery, the State submits that three years may be reasonably needed to develop the new FMP, conduct the related reviews (Endangered Species Act, National Environmental Policy Act, etc.), and issue a final rule. As a comparison, the process that led to Amendment 12 began in 2010, and the final rule was not issued until December 2012. The State would otherwise defer to NMFS's view about what is a reasonable time frame.

## **II. The Court should deny UCIDA's request to vacate all of Amendment 12.**

Inexplicably, in its motion UCIDA requests that the Court vacate all of Amendment 12's implementing regulations. UCIDA provides no support for that request. UCIDA's complaint focused exclusively on Cook Inlet and made no substantive allegations about any other aspect of Amendment 12. Likewise, the Ninth Circuit's opinion only discussed Cook Inlet and the court's holding was limited and explicit in that it only found invalid the part of Amendment 12 relating to Cook Inlet. The Court should therefore deny UCIDA's request to vacate all of Amendment 12 and the 2012 rule.

Based on the allegations in the complaint, it appears plaintiffs do not even have legal standing to complain about management of the commercial and sport salmon fisheries in the East Area, the commercial salmon fisheries in the Prince William Sound or Alaska Peninsula Areas, or the sport salmon fishery in the West Area. (*See* Complaint ¶ 8 (UCIDA represents commercial fishermen in Cook Inlet); ¶ 14 (Cook Inlet Fishermen's Fund's "mission is to advocate on behalf of all commercial fishermen in Cook Inlet and for the coastal community more generally").)

**III. The Court should deny UCIDA’s request that the Court order NMFS to direct the Council to take specific action.**

Only in “rare circumstances” should the Court remand with specific instructions to an agency. *Earth Island*, 494 F.3d at 770. In *Earth Island*, for example, a decision by the Secretary of Commerce that a purse seine fishery was not having an adverse impact on dolphin populations had been challenged in court twice; both times the Ninth Circuit agreed that the Secretary’s finding was arbitrary and capricious. *Id.* at 760-61. After the second appeal, the Ninth Circuit concluded based on the record that the Secretary would not be able to make a finding of no adverse impact even if the agency continued to study the matter, and remanded with instructions that the finding be vacated instead of simply for further proceedings. *Id.* at 770-71.

No “rare circumstances” like those in *Earth Island* are present in this case. This is a garden variety APA case in which a court has found an agency action to be contrary to law. The appropriate remedy is to remand to the agency for further proceedings. The holding of the Ninth Circuit is clear: for the State to manage the Cook Inlet fishery the Council must adopt an FMP that explicitly delegates management authority to the State. *UCIDA*, 837 F.3d at 1063. But the Council has at least three options for this fishery moving forward: prepare an FMP that delegates management authority to the State; prepare an FMP that allows NMFS to manage the fishery; or simply close the fishery. The Council should be permitted to choose the appropriate path forward without any “instructions” from NMFS. In any event, NMFS lacks the authority to direct the Council.

**IV. The Court should deny UCIDA’s request that the Court declare that the 1990 FMP is “hereby reinstated.”**

The Court should not declare that the 1990 FMP is “hereby reinstated” and order NMFS to supervise the Cook Inlet fishery pursuant to Section 9.

For one reason, the 1990 FMP is outdated and invalid. For example, the 1990 FMP does not include the annual catch limits or accountability mechanisms for the West Area that under the MSA Reauthorization Act of 2006 must be included within an FMP. Pub. L. No. 109-479, § 104, 120 Stat. 3575, 3584 (2007) (codified at 16 U.S.C. § 1853(a)(15)). There is no basis for the Court to declare that an invalid FMP is reinstated.

Second, what UCIDA is really asking is that the Court re-write the 1990 FMP to read as if that plan explicitly delegated management of the Cook Inlet salmon fishery to the State. The plan did not do that, and moreover in 2012 the fishery management experts at the Council considered whether to develop an FMP for Cook Inlet, and delegate management authority to the State, and the Council rejected that alternative for sound fishery management reasons. While it is possible that the Council will reconsider that option, the Court is ill equipped to predict what NMFS and the Council might do. The Court certainly should not order that the fishery be managed in a way the Council rejected when the Council has other options.<sup>3</sup>

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<sup>3</sup> UCIDA’s reliance on *Paulsen v. Daniels*, 413 F.3d 999 (9th Cir. 2005) is misplaced. In that case, the court found that an entire rule was invalid because of the agency’s failure to provide public notice and an opportunity to comment. *Id.* 1004-05. Here, the Ninth Circuit only held that part of Amendment 12 is contrary to law. Also, in *Paulsen* after finding the challenged rule invalid the court declined to reinstate a previous rule that had also been found invalid. *Id.* at 1008. UCIDA’s request that the Court enter a remedial order that reinstates the invalid 1990 FMP should therefore be denied.



## CONCLUSION

For all of these reasons, the Court should deny UCIDA's Motion for Issuance of Final Judgment.

DATED January 19, 2017.

Respectfully submitted by,

JAHNA LINDEMUTH  
ATTORNEY GENERAL

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## Certificate of Service

I certify that on January 19, 2017 the foregoing MEMORANDUM IN OPPOSITION TO UCIDA'S MOTION FOR ISSUANCE OF FINAL JUDGMENT was served electronically via the CM/ECF system.

/s/Seth M. Beausang  
Seth M. Beausang  
Assistant Attorney General

# EXHIBIT F



## United Cook Inlet Drift Association

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May 18, 2020

Mr. Simon Kinneen, Chair  
Mr. David Witherell, Executive Director  
Dr. Sherri Dressel, Co-Chair of SSC  
Dr. Anne Hollowed, Co-Chair of SSC  
North Pacific Fishery Management Council  
1007 West Third, Suite 400  
Anchorage, Alaska 99501

Dear Mr. Kinneen, Mr. Witherell, Dr. Dressel and Dr. Hollowed:

We are writing to bring to your attention some issues that require resolution in the development of a new amendment to the Salmon FMP for Alaska. In the course of our participation in the Cook Inlet Salmon Committee we have encountered some critical, fundamental barriers to a successful outcome, two of which we address in this letter.

First, the North Pacific Fishery Management Council (Council) and National Marine Fisheries Service (NMFS) must revisit the conclusion reached during the Amendment 12 process that the State of Alaska's salmon management practices and escapement goals meet the requirements of the MSA and the 10 National Standards. That conclusion was based on representations that are no longer true. The prior conclusion was based on a letter from ADF&G Commissioner Denby Lloyd, followed by a paper explaining how state management of the salmon fisheries complies with the MSA, including how escapement goals are set.<sup>1</sup> The State represented, among other things, that "escapement goals are typically set at the range of escapements that provided 90% or more of MSY.;" and "for salmon, maximum sustained yield is achieved by fishing appropriately to maintain the spawning **escapement at levels that provide potential to maximize surplus production.**"<sup>2</sup> Those statements are now demonstrably incorrect. In fact, ADF&G is now deliberately and explicitly setting escapement goals substantially lower than 90% of MSY and is managing the Cook Inlet salmon fishery to minimize, not maximize, surplus production. ADF&G's present practices do not resemble its prior representations, and its present practices do not meet the requirements of the MSA and the National Standards.

Second, and by contrast, many of the technical tasks, on which the Cook Inlet Salmon Committee has spent many fruitless hours, were previously developed, and accepted by the Council, in the development

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<sup>1</sup> ADF&G, 2010. State of Alaska's Salmon Fisheries Management Program. Response to Council request (June 30, 2010.) Correspondence. Juneau, Alaska. Attachment.

<sup>2</sup> Ibid, p.5

and passage of Amendment 12. As set forth below, some of these components are generally still applicable and should not need to be re-created for the new amendment.

Additionally, on May 7, 2020, President Trump signed an Executive Order titled “Executive Order on Promoting American Seafood Competitiveness and Economic Growth.” This order mandates that regional fishery management councils develop a prioritized list of actions to reduce burdens on and to increase production from sustainable fisheries. The prioritized list must be produced within 180 days, and the changes must be proposed within one year. The information contained in our letter describes what is needed to increase production rapidly from the Cook Inlet salmon fishery, meet the requirements of the MSA and meet the new requirements of the Executive Order.

## **Alaska Salmon Management**

Salmon management practices and salmon escapement goals developed by the State of Alaska do not meet the requirements of federal law. The Magnuson-Stevens Act (MSA) and National Standard 1 (NS1) requires achieving optimum yield (OY) from each fishery, establishes maximum sustained yield (MSY) as the basis for fishery management and requires that fishing mortality does not jeopardize the capacity of a fishery to produce MSY. Given that salmon populations exhibit compensatory and density dependent stock recruitment dynamics, achieving OY on a continuing basis for salmon stocks requires that salmon escapement goals be set as close as possible to MSY. Maximum sustained yield and OY are only achieved when MSY-centered escapement goals are established, and the fishery is managed for escapements that stay within that escapement goal range and distribute escapements within that range to achieve MSY as an average.

In the 2010 Salmon Fisheries Management Program document that Alaska provided the Council, the state asserted that salmon escapement goals were set at MSY within a 90% range. The following is an excerpt from that paper:

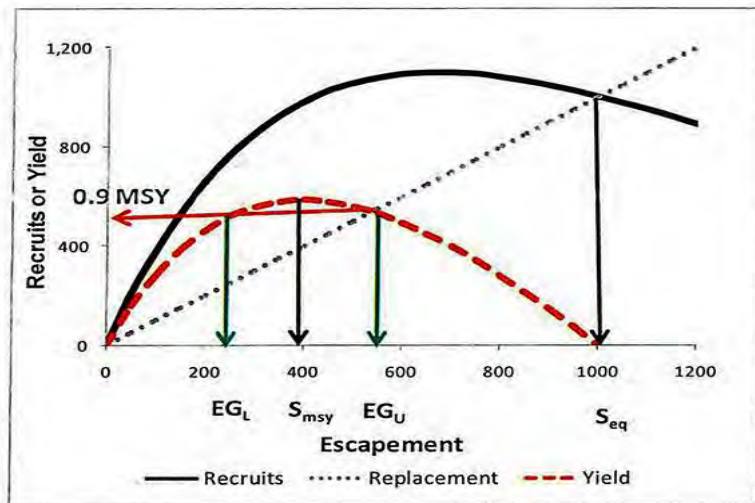
“The compensatory nature of salmon populations is reflected in the Ricker stock recruitment model (Figure 1). Appropriate biological reference points used as benchmarks in status determinations, and in setting escapement goals can be determined from the Ricker model parameters estimated by fitting the Ricker model to historical stock-recruit data (Ricker 1954). ... **Escapement goals are typically set at the range of escapements that provided 90% or more of MSY.** The approach of using the fitted Ricker stock-recruit model to set escapement goals is routinely used by ADF&G for stocks where stock specific runs can be estimated and there is sufficient contrast in the historical escapement data to reflect density dependence.”<sup>3</sup>

Figure 1, on the next page, is the Figure they reference in this paragraph.

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<sup>3</sup> Ibid, p.5

**Figure 1.** ADF&G used this Ricker stock recruit model to illustrate the model that they said they routinely use for setting escapement goals.



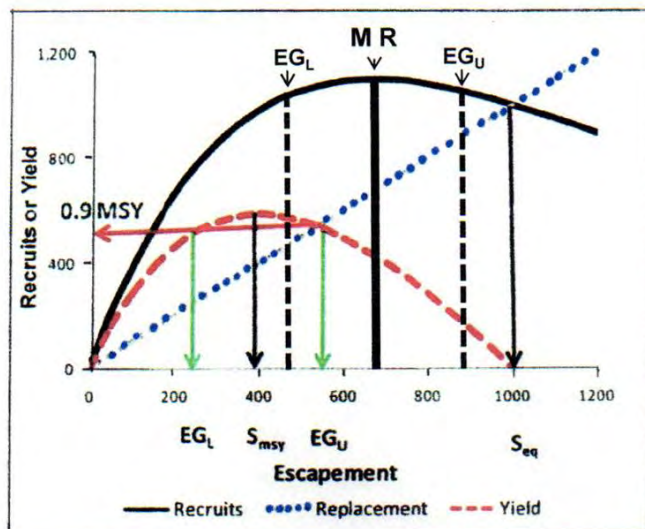
“Figure 1. Biological reference points associated with the Ricker stock-recruit model (R) and Ricker yield (Y) model, included are maximum sustained yield (MSY) escapement ( $S_{msy}$ ), recruits at MSY escapement ( $R_{msy}$ ), equilibrium escapement ( $S_{eq}$ ), the lower end (EGL) and upper end (EGU) of escapement goal range, the MSY harvest rate ( $U_{msy}$ , the slope of line tangent to R at  $S_{msy}$ ), and the overfishing rate ( $U_{of}$ , the slope of line tangent to R at the origin).”

A goal set for 90% of MSY encompasses a range of 10% on either side of the  $S_{msy}$  point on a yield curve (see the red line labeled 0.9 MSY in Figure 1). **ADF&G and the Alaska Board of Fisheries (BOF) are no longer setting escapement goals that meet 90% of MSY for most salmon stocks.** Currently many salmon escapement goals are set very broadly. Instead of a range of 90% of MSY, they may encompass ranges as much as 30% below to 80% beyond  $S_{msy}$ . Achieving MSY becomes a random occurrence with goals this broad and yield is increasingly reduced with every degree on either side of  $S_{msy}$  on the yield curve.

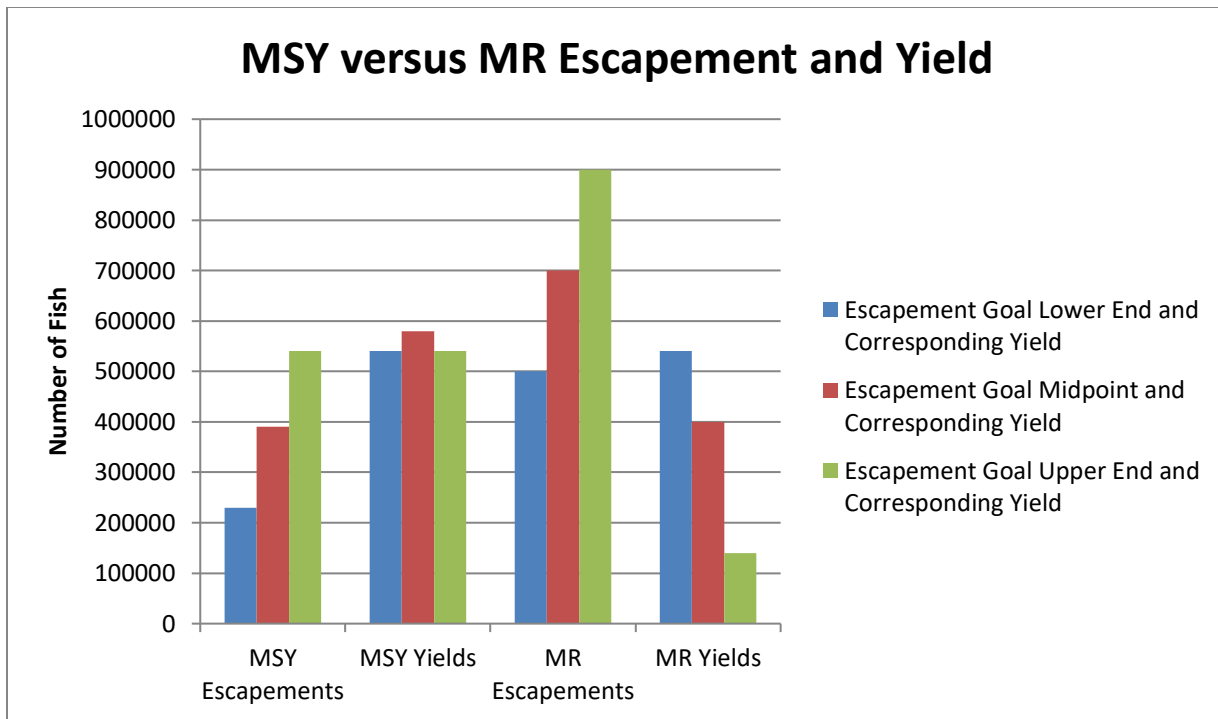
ADF&G is setting some goals on the recruitment curve, described as maximum recruitment (MR), with the lower end of this escapement range set beyond  $S_{msy}$ . When we compare MSY and MR on the same model it is clear that the range of the MR goal greatly reduces yield and almost entirely misses the 90% of MSY range. (See Figure 2.)

**Figure 2.** Same Ricker stock recruit model with maximum recruitment (MR) range added.

The further the goals depart from either side of the  $S_{msy}$  point on the yield curve, the greater the loss of yield. When you calculate the numbers from Figure 2, the difference in yield between MSY and MR become more apparent, as in Figure 3.



**Figure 3.** Graph of escapement and yield ranges demonstrating MSY (90% range) vs Maximum Recruitment; numbers extrapolated from Figure 2.



This graph is an alternate method of showing data from Figure 2. With escapement goals set at 90% of MSY, an escapement range of 230k to 540k produces a yield of 540k to 580k. In the maximum recruitment (MR) example, an escapement range of 500k to 900k produces a yield of 540k to 130k. The upper end of the MR escapement goal range decreases the yield or harvest by as much as 78%. If the MSY exploitation rate on this stock is about 58% and you reduce that exploitation rate by 78% or more due to an artificial goal or by mismanagement, there is very little yield or harvestable surplus left. This magnitude of yield/harvest reduction is economically devastating to the commercial fishing industry and does not meet the MSA and NS1 requirement of managing the fishery on the basis of MSY.

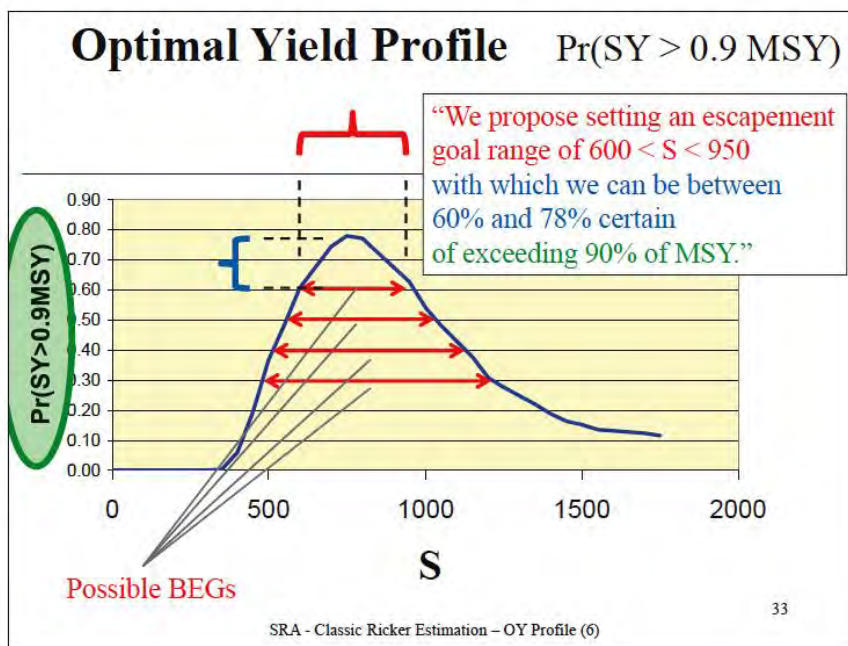
**Figure 4.** Correlation between goals, underfishing and overfishing.

Escapement Goal range set as percentage of $S_{msy}$ = % chance of achieving MSY	At Escapement Goal Lower end (EGL) = increasing % chance of overfishing	Escapement Goal Upper end (EGU) = increasing % chance of underfishing
90%	10%	10%
80%	20%	20%
70%	30%	30%
50%	50%	50%

Setting escapement goals farther away from the Smsy point goal decreases the probability of achieving MSY and directly increases the probability of overfishing or underfishing. Setting goals based on MR virtually eliminates any possibility of achieving MSY.

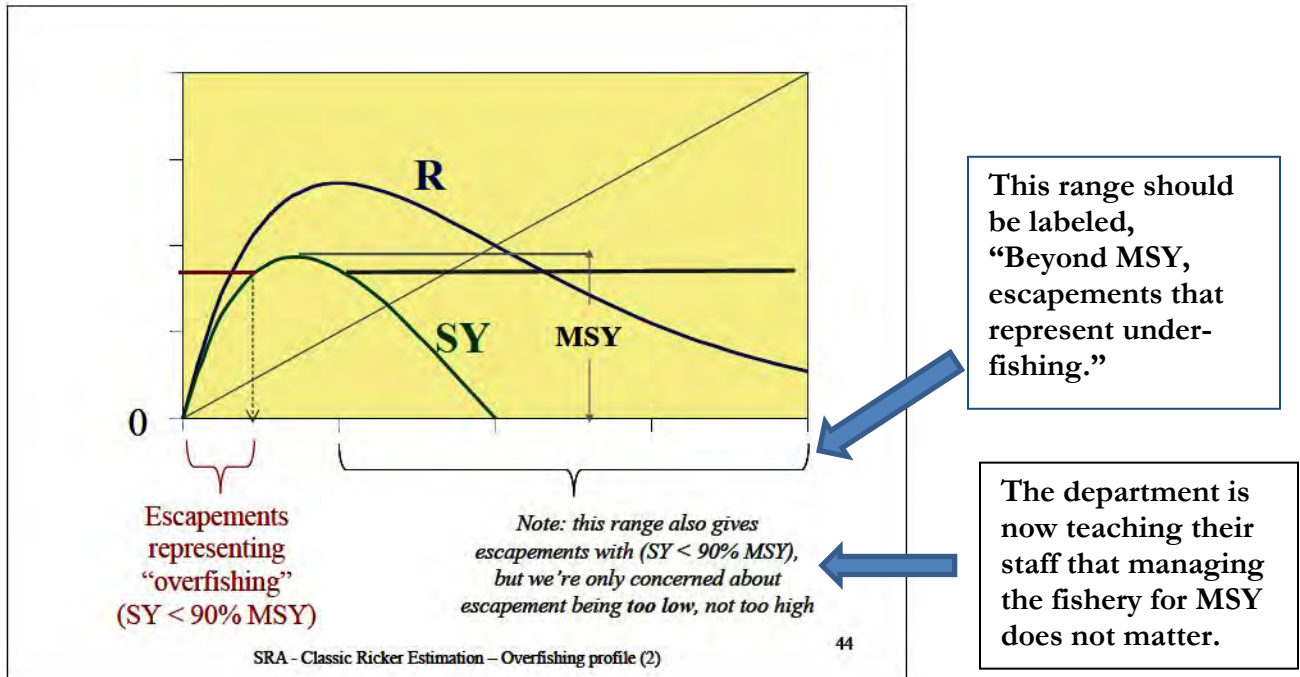
**ADF&G is now deliberately and explicitly setting escapement goals substantially lower than 90% of MSY.** The department’s “Mechanics of Escapement Goal Analysis in Alaska” lecture slides, for staff training, recommend numerous strategies for setting escapement goals that do not meet the standard of 90% of MSY (see Figures 5 and 6).

**Figure 5.** Slide 33, 2020 ADF&G Mechanics of Escapement Goal Analysis in Alaska; Stock-Recruit Analysis: Ricker Stock-Recruit Relationship.



Here ADF&G recommends a relatively low probability of achieving 90% of MSY, 60% of EGL to 60% of EGU with a peak of 78% probability of achieving 90% of MSY at the peak. This translates to a 30% chance of overfishing at EGL to a 30% chance of under fishing at EGU. While this graph states this goal is between 60-78% “certain” of exceeding 90% of MSY, it is not, it is only a probability of 90%. As Figure 3 illustrated, broadening escapement goals and reducing the percentage of MSY achieved to less than 90% of MSY significantly decreases yield.

**Figure 6.** Slide 44, 2020 ADF&G Mechanics of Escapement Goal Analysis in Alaska; Stock-Recruit Analysis: Ricker Stock-Recruit Relationship.



This slide clearly illustrates that the department is not concerned with loss of yield or managing the fishery for MSY. They state that they are “only concerned about escapement being **too low**, not too high.” This is a striking departure from the state’s 2010 assertions to Council that:

- “Escapement goals are typically set at the range of escapements that provided 90% or more of MSY.”; and
- “For salmon, maximum sustained yield is achieved by fishing appropriately to maintain the spawning **escapement at levels that provide potential to maximize surplus production.**”<sup>4</sup>

When ADF&G now says that they are not concerned about managing the fishery for MSY, this contradicts their previous statements to the Council in 2010 and is contrary to the language in the findings and the purpose of the MSA and the requirements in NS1.

In the same training slide series, on slides 36 and 37, the guidelines repeat the following statement: “High performance requirements are associated with narrower goals; lower performance requirements are associated with wider goals.”<sup>5</sup> Another way to say this is that narrow goals, such as 90% of MSY, require adaptive in-season management. Apparently, the ADF&G is very willing to forego harvest of surplus stocks (yield) for the sake of making their job easier. It is also a simple way to avoid accountability for

<sup>4</sup> Ibid, p.5, p.4

<sup>5</sup> 2020 ADF&G Mechanics of Escapement Goal Analysis in Alaska; Stock-Recruit Analysis: Ricker Stock-Recruit Relationship.



poor in-season management. The MSA and NS1 require managing this valuable resource for MSY. The State of Alaska, NMFS or the Council cannot decide that a lower standard for management is acceptable.

The state's policies of wider goals and lower performance requirements are affecting state-wide salmon management. In the following pages we examine a few of the many Cook Inlet salmon stocks that are not being managed to MSY, but are being managed with "wider goals" and "lower performance requirements." These examples include Eastside Susitna River Chinook, Deshka River Chinook, Kasilof River sockeye and Kenai River late-run sockeye.

The Eastside Susitna River Chinook and the Deshka River Chinook escapement goals have not been based on 90% of MSY for some time. Escapement goals were set extremely broadly, not at levels that provide potential to maximize surplus production. The consequences were over-escapements, run failures and fishing restrictions that all resulted in significant lost yield. We will examine the historic escapement goals and then the harvest rates on these Chinook stocks.

## Eastside Susitna River Chinook

Eastside Susitna River Chinook escapement goals are set so high as to almost miss the 90% of MSY range. This is an example of ADF&G using maximum recruitment to set the goal.

**Figure 7.** Eastside Susitna River Chinook as modified from Reimer, 2020. (Reimer, A. M., and N. A. DeCovich. 2020. Susitna River Chinook salmon run reconstruction and escapement goal analysis. Alaska Department of Fish and Game, Fishery Manuscript No. 20-01, Anchorage. p.54)

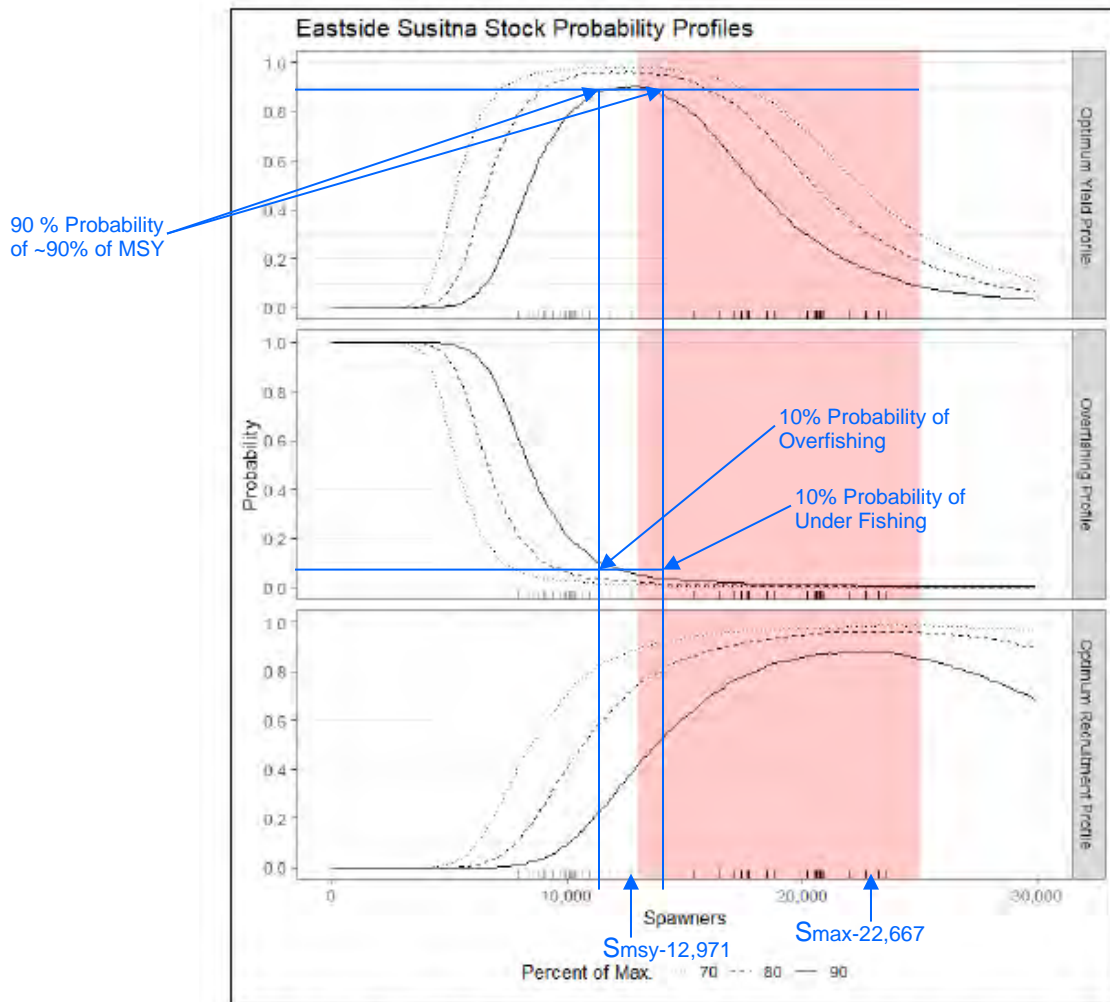


Figure 11.—Optimal yield (OYP), overfishing, and optimum recruitment (ORP) profiles for the Eastside Susitna Chinook salmon stock. Profiles show the probability that a specified spawning abundance will result in specified fractions (70%, 80%, and 90% line) of maximum sustained yield (OYP and overfishing) or maximum sustained recruitment (ORP).

Note: Pink shaded areas bracket the proposed goal range, grey and black marks along the x-axis show comparable lower and upper bounds, respectively, scaled by  $S_{MSY}$  ratios for other Alaskan Chinook salmon stocks (see Methods).

The pink shaded area delineates ADF&G’s proposed goal range for Eastside Susitna Chinook. Ninety percent of MSY and other calculations have been added in blue. Under-fishing is guaranteed. For 90% of MSY the escapement goal would be ~11,000 to 14,000, not 13,000 to 25,000 as ADF&G has suggested.

ADF&G's escapement goal range is from slightly above SMSY at the lower end, to 2,300 past Smax, basically ensuring no yield in any fishery, and not 90% of MSY as they previously claimed.

**Figure 8.** Eastside Susitna River Chinook as Modified from Reimer, 2020. (Reimer, A. M., and N. A. DeCovich. 2020. Susitna River Chinook salmon run reconstruction and escapement goal analysis. Alaska Department of Fish and Game, Fishery Manuscript No. 20-01, Anchorage. p.53)

ADF&G escapement goal in red – 13,000 – 25,000

A goal range set for 90% of MSY – in blue - would be 11,000 – 14,000

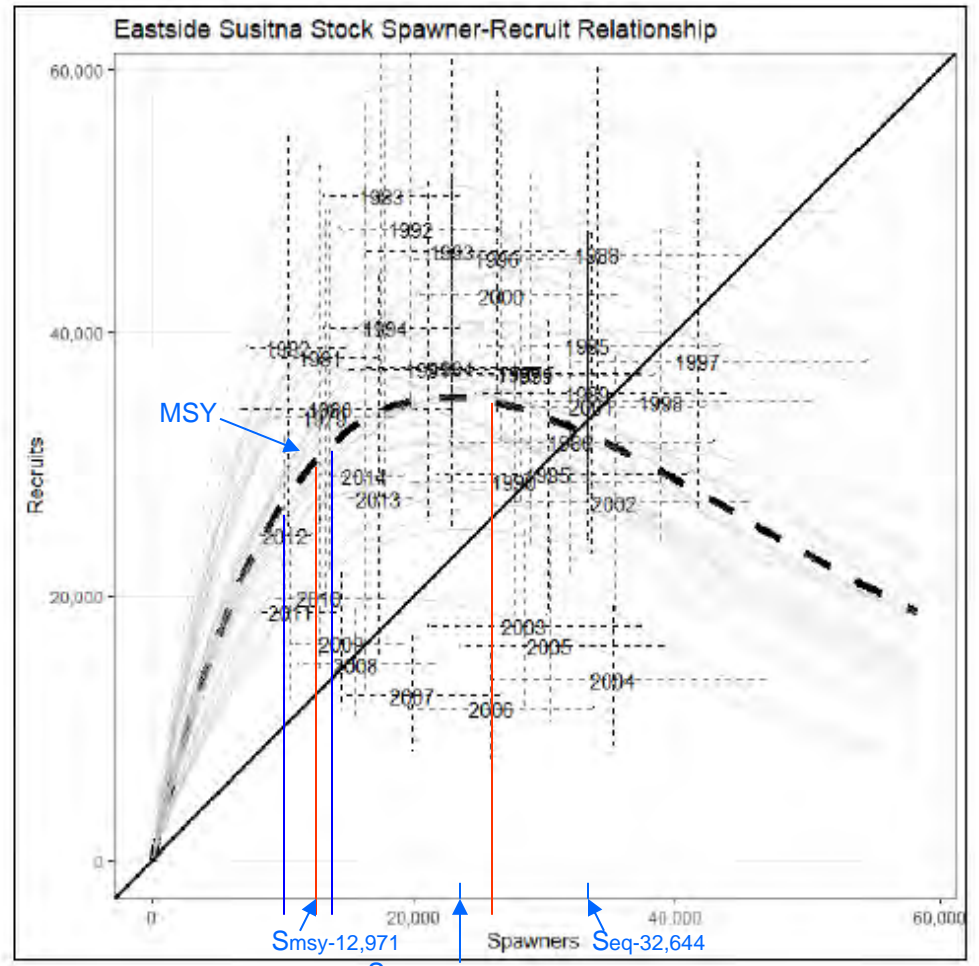


Figure 10.—Plausible spawner-recruit relationships for the Eastside Susitna Chinook salmon stock as derived from an age-structured state-space model fitted to abundance, harvest, and age data for 1979–2017.

Note: Posterior means of R and S are plotted as brood year labels with 95% credibility intervals plotted as light dashed lines. The heavy dashed line is the Ricker relationship constructed from  $\ln(\alpha^*)$  and  $\beta$  posterior medians. Ricker relationships are also plotted (light grey lines) for 40 paired values of  $\ln(\alpha^*)$  and  $\beta$  sampled from the posterior probability distribution, representing plausible Ricker relationships that could have generated the observed data. Recruits replace spawners ( $R = S$ ) on the diagonal line.

Prior to 2020, ADF&G and the BOF created numerous restrictions, in regulation, to commercial, sport and subsistence fisheries because of low escapement counts of these Chinook. The low escapement counts were likely due to the department's use of poor assessment techniques, usually consisting of single aerial surveys. From this analysis we now see that those restrictions were not necessary. In the data set for 1979 to 2017 in the above graph, only two years had escapements below their inflated goal, and none are below a 90% of MSY range of 11,000 – 14,000

## Deshka River Chinook

Prior to 2020, the Deshka River Chinook had a goal range similar to that of the Eastside Susitna, as illustrated in Figure 6. For decades it cycled between over-escaping, and under-escaping, with numerous fishing restrictions. This has resulted in a 1:1 return per spawner ratio which, in a managed stock, is a clear case of a management failure. As of 2020 the goals were changed but they are still too wide.

**Figure 9.** Deshka River Chinook S/R Analysis as modified from Reimer, 2020. (Reimer, A. M., and N. A. DeCovich. 2020. Susitna River Chinook salmon run reconstruction and escapement goal analysis. Alaska Department of Fish and Game, Fishery Manuscript No. 20-01, Anchorage. p.49)

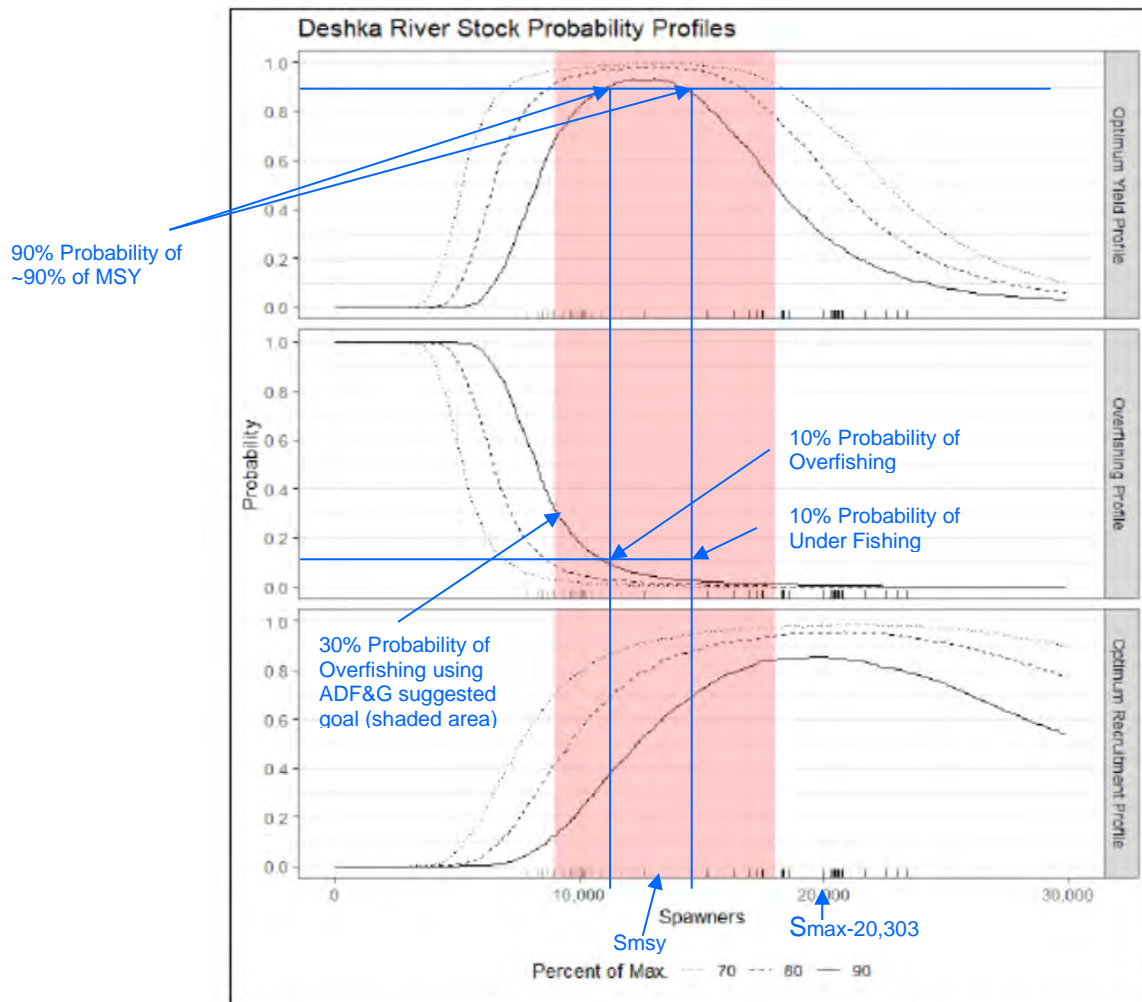


Figure 6.—Optimal yield (OYP), overfishing, and optimum recruitment (ORP) profiles for the Deshka River Chinook salmon stock. Profiles show the probability that a specified spawning abundance will result in specified fractions (70%, 80%, and 90% line) of maximum sustained yield (OYP and overfishing) or maximum sustained recruitment (ORP).

Note: Pink shaded areas bracket the proposed goal range, grey and black marks along the x-axis show comparable lower and upper bounds, respectively, scaled by  $S_{MSY}$  ratios for other Alaskan Chinook salmon stocks (see Methods).

The pink shaded area delineates ADF&G’s proposed goal range for Deshka Chinook. Ninety percent of MSY and other calculations have been added in blue. A goal range set for 90% of MSY would be ~11,000 to 15,000, not 9,000 to 18,000 as ADF&G has suggested.

**Figure 10.** Deshka River Chinook Spawner-Recruit Relationship analysis as modified from Reimer, 2020. (Reimer, A. M., and N. A. DeCovich. 2020. Susitna River Chinook salmon run reconstruction and escapement goal analysis. Alaska Department of Fish and Game, Fishery Manuscript No. 20-01, Anchorage. p. 48)

ADF&G goal range  
prior to 2020 in Red:  
13,000 – 27,000  
(Smsy – 17,230)

New ADF&G 2020 goal  
in Green:  
9,000 – 18,000  
(Smsy – 12,564)

A goal range set for  
90% of MSY would be  
11,000 – 15,000 (see  
previous figure)

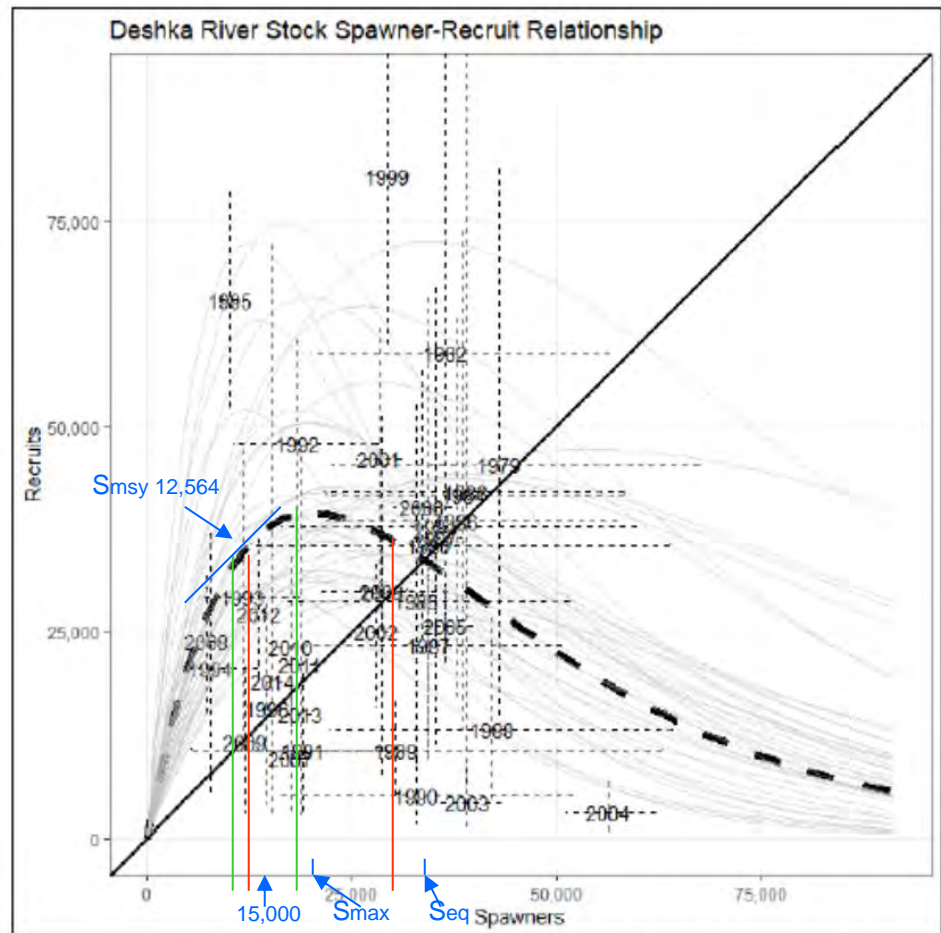


Figure 5.—Plausible spawner-recruit relationships for the Deshka River Chinook salmon stock as derived from an age-structured state-space model fitted to abundance, harvest, and age data for 1979–2017.

Note: Posterior means of R and S are plotted as brood year labels with 95% credibility intervals plotted as light dashed lines. The heavy dashed line is the Ricker relationship constructed from  $\ln(\alpha')$  and  $\beta$  posterior medians. Ricker relationships are also plotted (light grey lines) for 40 paired values of  $\ln(\alpha')$  and  $\beta$  sampled from the posterior probability distribution, representing plausible Ricker relationships that could have generated the observed data. Recruits replace spawners ( $R = S$ ) on the diagonal line.

From 1999 to 2019 ADF&G’s goal range, in RED, was set using 20% less than Smsy to 50% beyond Smsy, with the upper end of the goal being set at ~Smax. Beginning in 1979, in 14 of 36 years the escapements were to the right of and below replacement, causing numerous restrictions. From 1979-2009 the average harvest was 5,500, far below the expected yield of 25,000. (2009 was the date of the last available harvest table.)

Using ADF&G’s new 2020 goal, in GREEN, Smsy drops by 5,000 Chinook and the new goal is 9,000 to 18,000. Most past escapements, in 21 of 36 years, were over the top end of this new goal. Yet fishing restrictions remain in place, in regulation and management plans, guaranteeing the continued loss of yield of these and other stocks.

In Figure 11, ADF&G's records show the significant yield loss in these Chinook stocks since 1979, illustrating the consequences of the inappropriate escapement goals. Over 38 years, the Deshka lost an average of 80% of the available Chinook yield and East Susitna lost an average of 58%.

**Figure 11.** Chinook Harvest Rates as modified from Reimer, 2020. (Reimer, A. M., and N. A. DeCovich. 2020. Susitna River Chinook salmon run reconstruction and escapement goal analysis. Alaska Department of Fish and Game, Fishery Manuscript No. 20-01, Anchorage. p.65)

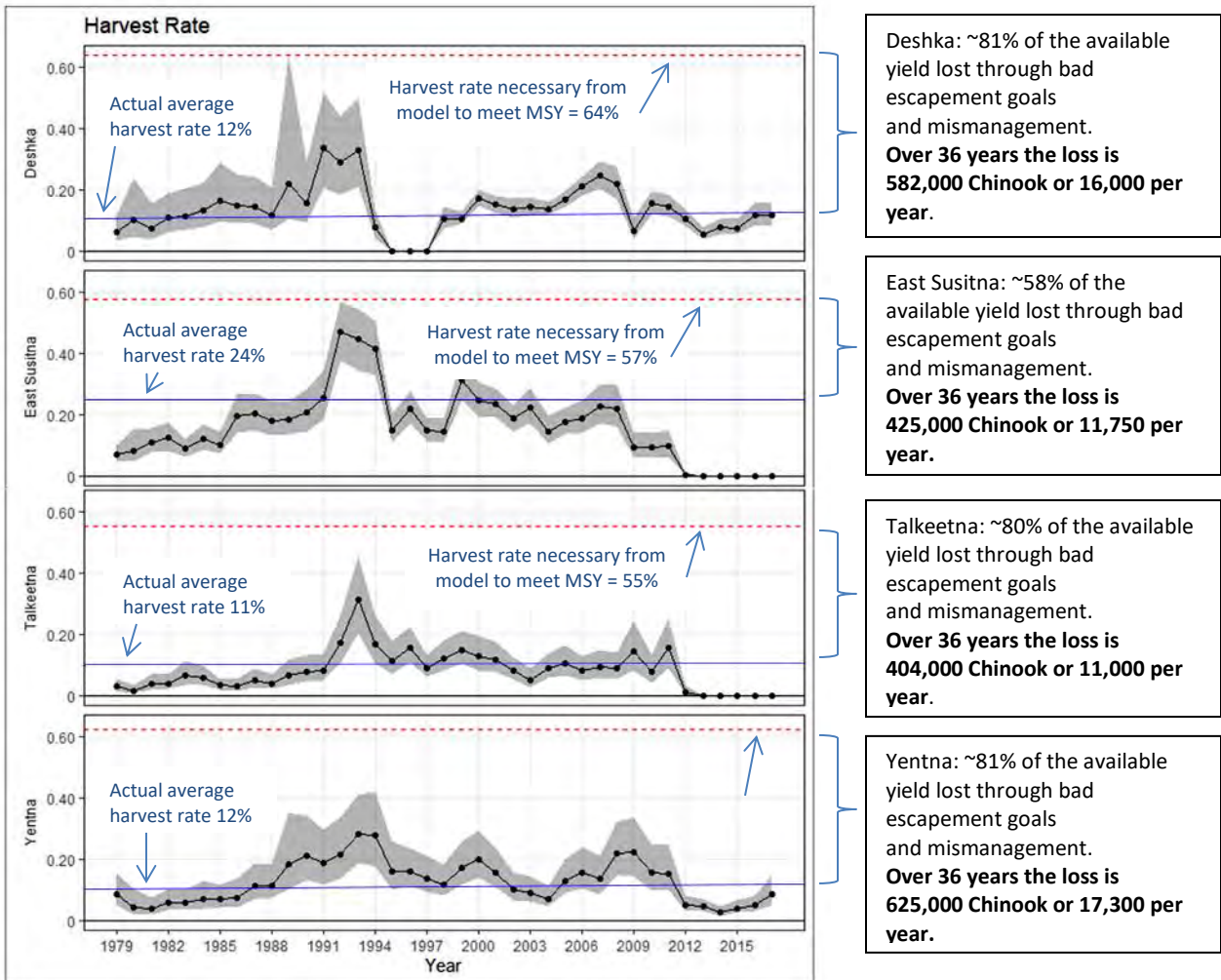


Figure 22.—Point estimates (posterior medians; solid lines) and 95% credibility intervals (shaded areas) of harvest rate from a state-space model by stock, 1979–2017.

Note: The posterior median of  $U_{MSY}$  is plotted as short-dash horizontal reference line.

The average annual lost yield from just these four examples adds up to well over 50,000 Chinook per year. These lost yield figures do not account for lost future yields within these systems or the significant lost yield of other species due to fishing restrictions. Bad management of these stocks perpetuate commercial, sport and subsistence fishing restrictions even though yields on these stocks are so low. These incorrect Chinook salmon goals and others just as contrived, like the Little Susitna River coho goal, are very deliberately used by the BOF and ADF&G as justifications for restricting commercial fishing on all stocks.

## Kasilof River sockeye

The escapement goal for Kasilof River sockeye salmon is also set far too broadly. It is not set at 90% of MSY. ADF&G has the goal set at 140,000 to 320,000 rather than 90% of MSY, which would be ~160,000 to 260,000 salmon. This goal range has a 50% chance of overfishing and a 50% chance of underfishing and only a 50% chance of achieving MSY.

**Figure 12.** Kasilof River Optimum Yield Profiles as modified from McKinley, 2019 McKinley, T., N. DeCovich, J. W. Erickson, T. Hamazaki, R. Begich, and T. L. Vincent. 2020. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2019. Alaska Department of Fish and Game, Fishery Manuscript No. 20-02, Anchorage. p.41

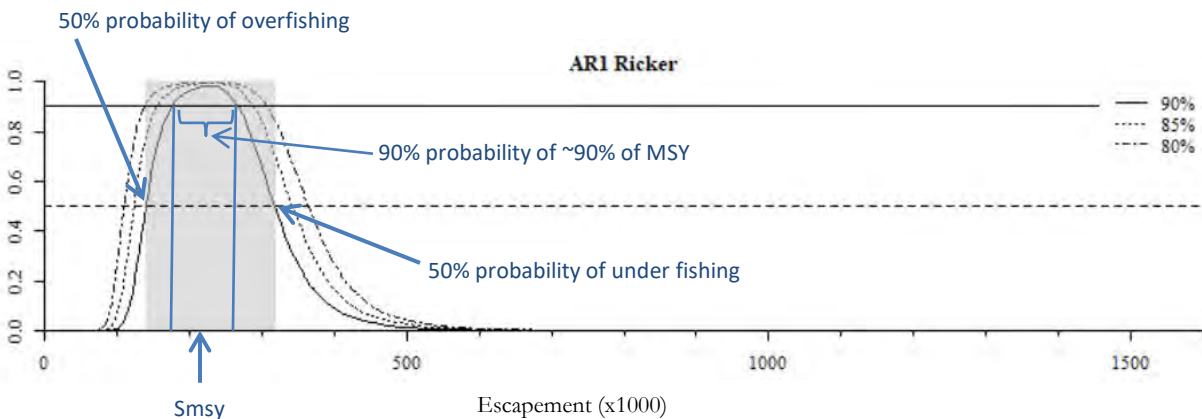


Figure 8.—Optimum yield profiles for Kasilof River sockeye salmon. Note: Profiles show the probability that a specified spawning abundance will result specified fractions (80%, 85%, and 90% lines) of maximum sustained yield for 5 spawner-recruit models fit to data from brood years 1968–2012. Shaded ranges represent the recommended escapement goal (140,000–320,000)

ADF&G’s in-season management of Kasilof River sockeye is also failing to keep escapement numbers within any defined goal range. In 14 of the last 20 years the Kasilof sockeye escapement exceeded the upper end of the inflated goal range and in 16 of the last 20 years the escapement exceeded the upper end of 90% of MSY. If the management practices are not achieving the goal of MSY, then those practices must change.

## Kenai River late-run sockeye

In the past, Kenai River late-run sockeye goals were set based on the Markov Table. Beginning about 20 years ago the department began using models to establish the goals. All the models predicted better returns at a higher level of escapement than the Markov Table demonstrated. **This 20 year experiment has been an undeniable failure.** In the last 20 years, the predicted higher level of return has never been realized from escapements over 1 million sockeye. **In the last 51 years of data, there has only been one year, 1987, that saw a higher than average yield from a spawning escapement of over 1 million.**

It is important to note that in the field of statistics, there is a truism that states “**All models are wrong, but some models are useful**”. The idea that complex physical or biological systems can be exactly and reliably described by a few mathematical formulas is absurd. In this application the models that ADF&G

are using to set escapement goals for the Kenai River sockeye are not only wrong, they are harmfully wrong. They are harmful to the salmon resource, they are harmful to the economies that are built around the harvest of surplus salmon stocks and they are harmful to the coastal communities whose social and economic well-being depend on these resources.

Figure 13, below, contains the empirical data from over four decades of Kenai River late-run sockeye. This is the best scientific information available (National Standard 2). The highlighted range of escapements shows the level of spawners that produces the highest average yield and the highest average return.

**Figure 13.** Kenai River late-run sockeye Markov Table for brood years 1969-2012 in 200,000-fish overlapping intervals of escapement.

Escapement Interval (000)	n	Mean	Mean	Return per Spawner	Yield	
		Spawners (000)	Returns (000)		Mean (000)	Range (000)
0-200	3	120	679	6	564	358-871
100-300	3	165	798	5	633	449-871
200-400	2	292	1,055	4	763	578-947
300-500	4	414	2,179	5	1,764	580-3,413
400-600	9	497	2,448	5	1,950	580-3,413
500-700	8	563	3,046	5	2,483	999-6,361
600-800	9	734	4,636	6	3,902	713-8,832
700-900	8	768	4,497	6	3,729	713-8,832
800-1,000	7	943	3,664	4	2,720	692-4,806
900-1,100	7	970	3,612	4	2,642	692-4,806
1,000-1,200	2	1,082	3,628	3	2,546	2,504-2,588
1,100-1,300	5	1,291	3,291	3	2,082	277-3,229
1,200-1,400	6	1,266	3,250	3	1,985	277-3,229
> 1,300	12	1,701	4,321	3	2,619	520-8,345

Returns per spawner and mean yields both decline significantly when mean spawners increase above 900,000.

Further analysis of historical data reinforces this conclusion. When spawners, returns and yields are sorted by the escapement size (number of spawners), there is a distinct range that produces the highest yield (see Figure 14). The same escapement range of 600,000 to 800,000 produced the highest average yield.



**Figure 14 (Part 1 of 2).** Yield from the number of spawners from ADF&G brood tables, 1969-2012, sorted by size of escapements/spawners, for Kenai River sockeye salmon.

Brood Year	Spawners	Returns	Yield	Return per Spawner	Harvest Rate
1969	72,901	430,947	358,046	5.91	0.83
1970	101,794	550,923	449,129	5.41	0.82
1975	184,262	1,055,373	871,111	5.73	0.83
1974	209,836	788,067	578,231	3.76	0.73
1979	373,810	1,321,039	947,229	3.53	0.72
1971	406,714	986,397	579,683	2.43	0.59
1972	431,058	2,547,851	2,116,793	5.91	0.83
1984	446,397	3,859,109	3,412,712	8.65	0.88
1973	507,072	2,125,986	1,618,914	4.19	0.76
1976	507,440	1,506,012	998,572	2.97	0.66
1978	511,781	3,785,040	3,273,259	7.40	0.86
1981	535,523	2,464,323	1,928,800	4.60	0.78
1986	555,207	2,165,138	1,609,931	3.90	0.74
1985	573,836	2,587,921	2,014,085	4.51	0.78
1980	615,382	2,673,295	2,057,913	4.34	0.77
2000	696,899	7,058,348	6,361,449	10.13	0.90
2008	708,833	3,377,884	2,669,051	4.77	0.79
1991	727,159	4,436,074	3,708,915	6.10	0.84
2001	738,229	1,698,142	959,913	2.30	0.57
1982	755,672	9,587,700	8,832,028	12.69	0.92
1995	776,880	1,899,870	1,122,990	2.45	0.59
1983	792,765	9,486,794	8,694,029	11.97	0.92
1990	794,754	1,507,693	712,939	1.90	0.47
2009	848,117	3,983,872	3,135,755	4.70	0.79

This highlighted range of spawners, between 600,000 and 800,000, produced the highest average yield of 3.9 million salmon. Four of the nine years have a yield over 3 million. No other range on this or the following section of the table is comparable.

**Figure 14 (Part 2 of 2).** Yield from the number of spawners from ADF&G brood tables, 1969-2012, sorted by size of escapements, for Kenai River sockeye salmon.

Brood				Return per	Harvest
Year	Spawners	Returns	Yield	Spawner	Rate
1998	929,091	4,465,328	3,536,237	4.81	0.79
1999	949,276	5,755,063	4,805,787	6.06	0.84
1977	951,038	3,112,620	2,161,582	3.27	0.69
1996	963,125	2,261,757	1,298,632	2.35	0.57
2007	964,261	4,376,406	3,412,145	4.54	0.78
1993	997,730	1,689,779	692,049	1.69	0.41
2010	1,037,666	3,625,388	2,587,722	3.49	0.71
2002	1,126,642	3,630,740	2,504,098	3.22	0.69
1992	1,207,382	4,271,576	3,064,194	3.54	0.72
2012	1,212,837	1,490,134	277,297	1.23	0.19
1988	1,213,047	2,546,639	1,333,592	2.10	0.52
2011	1,284,486	4,513,815	3,229,329	3.51	0.72
1994	1,309,695	3,052,634	1,742,939	2.33	0.57
1997	1,365,746	3,626,402	2,260,656	2.66	0.62
2003	1,402,340	1,922,165	519,825	1.37	0.27
2005	1,654,003	4,802,362	3,148,359	2.90	0.66
2004	1,690,547	3,240,428	1,549,881	1.92	0.48
2006	1,892,090	5,003,585	3,111,495	2.64	0.62
1987	2,011,772	10,356,627	8,344,855	5.15	0.81
1989	2,026,637	4,458,679	2,432,042	2.20	0.55

For the 21 data points within the range of 848,000 to 2,027,000 spawners, the average yield is 2.6 million salmon. This is about 33 percent less than the average yield of 3.9 million salmon within the range of 600,000 to 800,000 spawners. Only 2 of the 21 data points for escapements above 800,000 spawners have a yield equal to or above 3.9 million. The excess escapements put future returns at risk.

Despite this information, gathered from 44 years of Kenai River late-run sockeye runs, ADF&G and the BOF are still setting goals based on the various models, and they are still continuing to increase the goal range. In 2020, ADF&G raised the Kenai River late-run sockeye SEG goal range even higher, now set at 750,000 to 1.3 million. The BOF also raised the allocative “in-river goals”, in 3 different tiers, to range

from 1 million to 1.6 million sockeye. In addition, just like in the Kasilof River, the in-season management of the Kenai River late run sockeye is also failing to keep escapement numbers within any defined goal range. In 14 of the last 20 years and in 9 of the last 10 years, the Kenai sockeye escapement exceeded the upper end of the inflated goal range.

In 5 of the last 10 years the Kenai sockeye escapement has exceeded 1.5 million. The in-river sport-fishery does not have the capacity to harvest these excess sockeye, so the result is an immediate loss of 500,000 to a million sockeye that could be harvested by the commercial fishery. We cannot afford to waste these 500,000 or more sockeye that are surplus to spawning needs. Five hundred thousand sockeye, or more, equates to a minimum of 3 million pounds of salmon being wasted annually.

From ADF&G’s 2020 analysis shown in Figure 15 below, the estimate of MSY and the goal ranges do not come close to the empirical data estimates of MSY from the Markov Table (Figure 13) or the brood table (Figure 14). The fit of all the ADF&G’s models, including the brood year interaction model used since 1999, are very poor and get worse every year. They all over-predict the return from any level of escapement. None of the 90% goal ranges from the models come close to 90% of MSY.

**Figure 15.** Kenai Sockeye Return per Spawner model (Ricker) from Hasbrouck 2020 (Hasbrouck, J. J., W. D. Templin, A. R. Munro, K. G. Howard, and T. Hamazaki. Unpublished. Spawner–recruit analyses and escapement goal recommendation for Kenai River late-run sockeye salmon. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, Anchorage. 2020 p.25)

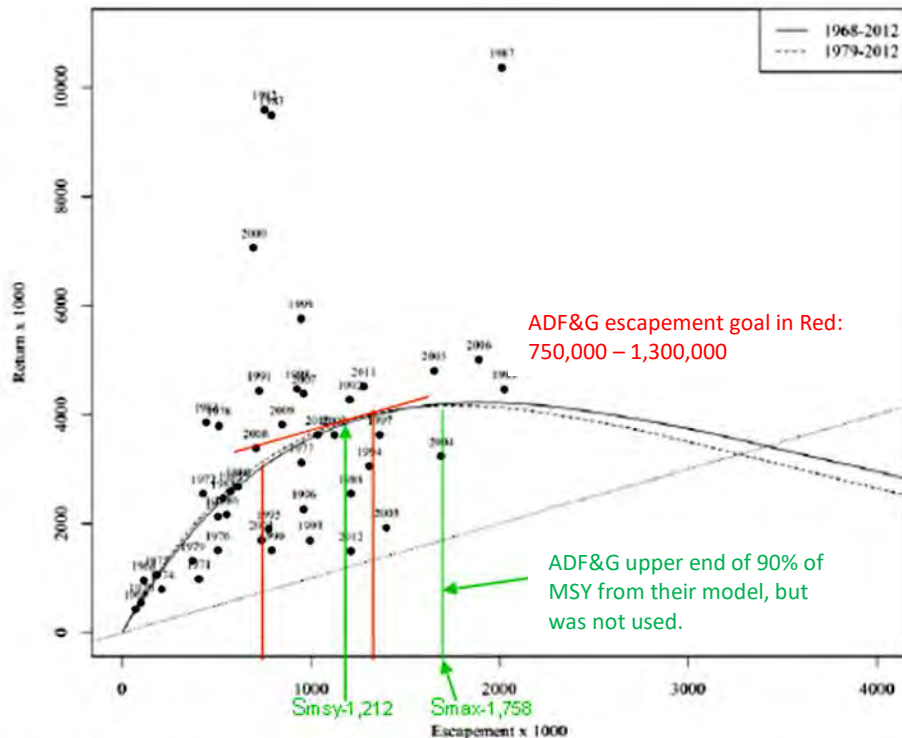
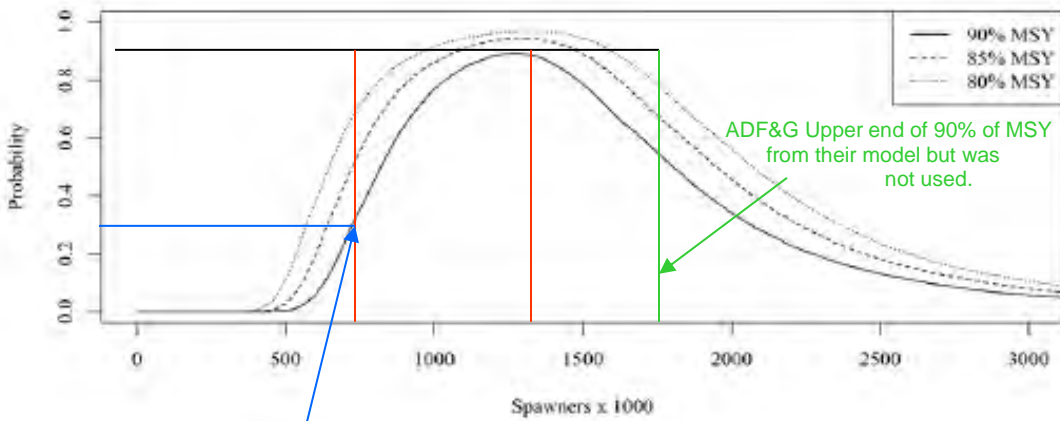


Figure 6.—Classic Ricker model fit to Kenai River late-run sockeye salmon spawner-recruit data from 1968–2012 (solid line) and 1979–2012 (dashed line).

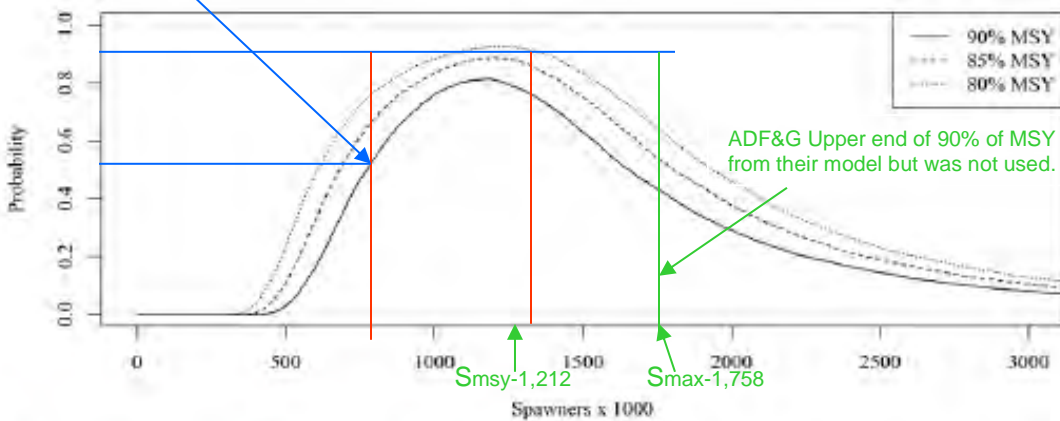
In Figure 16 the escapement goal ranges in red suggested by ADF&G in the yield profiles do not represent 90% of MSY as ADF&G reports in Hasbrouk, et al, 2020. In addition, these analyses do not agree with the empirical data in the Markov Table (Figure 12) from which they originate. A 50% to 70% chance of overfishing does not meet the 90% of MSY standard.

**Figure 16.** Kenai Sockeye Estimated Yield Profiles from Hasbrouck 2020 (Hasbrouck, J. J., W. D. Templin, A. R. Munro, K. G. Howard, and T. Hamazaki. Unpublished. Spawner–recruit analyses and escapement goal recommendation for Kenai River late-run sockeye salmon. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, Anchorage. 2020 p.227)



There is approximately a 70% chance of overfishing if one believes this analysis.

There is approximately a 50% chance of overfishing if one believes this analysis.



**Figure 8.**—Estimated yield profiles based on the classic Ricker model using spawner-recruit data from 1968–2012 (top panel) and 1979–2012 (bottom panel).

ADF&G is not setting the goal range using the methods they described to the Council in 2010. In using these yield profile models, they change the parameters so that they fall far outside of the standard of 90% of MSY.

Forty-four years of empirical data (Markov Table) are an asset in setting escapement goals, provided the data is utilized. The data is so clear it begs the question of why ADF&G is not using it to formulate escapement goals for the Kenai River late-run sockeye salmon. It would appear that ADF&G is

deliberately trying to reduce yield in the commercial fishery. Harvests have been reduced due to unnecessarily high escapement goals. Harvests have been further reduced by ADF&G's unwritten policy of managing for escapements at the high end of the goal range. Harvests have been even further reduced by escapements exceeding the upper limit of already too-high escapement goals. They are using incorrect escapement goals and prescriptive management plans that limit in-season adaptive management and the result is diminished returns and continued lost yield. In other words, the state is managing the Cook Inlet salmon fishery with the objective of putting the commercial fishing industry out of business.

Many of the methods that ADF&G and the BOF are using to manage the Cook Inlet salmon fishery are very similar to what occurred during the federal management era prior to Alaska statehood, when salmon fisheries were largely managed by fishing schedules and fishing areas defined in regulation pre-season, and in-season adjustments were delayed until they were too late to be effective.

Lost yields are not just lines on a graph or expressions of probability. The "too-high escapements," that ADF&G has declared they are not concerned about, constitute a deliberate waste of harvestable surplus salmon. This deliberate waste has resulted in shuttered seafood processing plants and fishing businesses and the loss of thousands of jobs. It has cost hundreds of millions of dollars of lost commerce for the state and nation and has caused tremendous hardships in coastal communities. This is an irresponsible and irretrievable loss. It does not meet basic standards of MSY or OY. The State of Alaska's salmon fishery management does not comply with the requirements of MSA or the 10 National Standards.

The examples of mismanaged Chinook and sockeye stocks illustrated above are just a few of the many examples that we could describe. The coho, pink and chum runs into Cook Inlet are largely unmonitored and unharvested. There is no attempt by the ADF&G to meet any of the requirements of the MSA or the National Standards for these stocks. The pink salmon run into Cook Inlet is the largest stock that enters Cook Inlet, some years exceeding 20 million salmon, yet there is no active management and only incidental harvest of this stock. This does not meet the NS1 requirement of MSY as the basis for fishery management. In Cook Inlet there are more wild-run pink salmon wasted because of bad management than some pink salmon hatcheries produce (at a cost of millions of dollars) in other areas of the state.

## **Meeting MSA Requirements in Managing the Cook Inlet Salmon Fishery**

UCIDA had the expectation that Cook Inlet stakeholders would be included in the process of developing an FMP for the obvious benefit of providing valuable local knowledge and experience with this particular fishery. Instead, the stakeholders on the Cook Inlet Salmon Committee were initially tasked with developing Status Determination Criteria (SDCs), ACLs and AMs for a portion of the fishery. The Salmon Working Group (consisting of staff members from Council, NMFS and ADF&G) repeatedly described this task to the Salmon Committee as an intractable, unsolvable problem. However, in 2010 the Council accepted the information regarding SDCs, ACLs, and AMs, provided to them by ADF&G and utilized it in developing Amendment 12.

When the Council adopted Amendment 12, they accepted the State's approach as described in the 2010 State of Alaska's Salmon Fisheries Management Program paper that described the exploitation rates,

conversions for escapement-based reference points and conversions for catch-based and exploitation rate-based management targets to fit in the OFL/ABC/ACL framework. (The state's document is attached.)

During Cook Inlet Salmon Committee meetings, the Salmon Working Group challenged the stakeholders' recommendations for appropriate exploitation rates of salmon species. However, the stakeholders' recommended exploitation rates were right in line with those described in the State's 2010 paper: "State of Alaska's Salmon Fisheries Management Program," excerpted here:

"Biological reference points estimated for many salmon stocks demonstrate that salmon populations are extremely productive, with the limit return per spawner ( $\alpha$ ) averaging 3.7, 4.0, 3.7, 6.0, and 6.9 for pink, chum, coho, sockeye, and Chinook salmon, respectively. **MSY exploitation rates (i.e., the average harvest rates employed to maintain constant escapement in the escapement goal range) are high, averaging 0.53, 0.56, 0.63, 0.65, and 0.68 for pink, chum, coho, sockeye, and Chinook salmon, respectively.** The overfishing exploitation rate (i.e., the fishing rate if continuously applied will deplete the stock) is also very high averaging 0.72, 0.74, 0.80, 0.81, and 0.83 for pink, chum, coho, sockeye, and Chinook salmon, respectively (Eggers and Clark in prep.)."<sup>6</sup>

The MSY exploitation rates shown above, in bold, are what the state is required to be achieving under the MSA and NS1. ADF&G is making no attempt to achieve those exploitation rates in the Cook Inlet salmon fishery. In 2002, ADF&G conducted a marine tagging project designed to estimate the total population size, escapement, and exploitation rates for coho, pink and chum salmon returning to Cook Inlet (Willette et al. 2003). This study estimated the harvest rate of pink salmon in the commercial fishery at about 0.02, the harvest rate of chum salmon in the commercial fishery at about 0.06, and the harvest rate of coho salmon in the commercial fishery at about 0.10 of the total run. (The harvest rate of coho was actually less than ten percent because the study ended before the Kenai coho run started.) The low harvest rates on these stocks are a direct result of restrictive management plans for the commercial fishery. We have not been allowed to harvest these abundant stocks.

In the current Discussion Paper, under "2.5.2 Alternative 2: Cooperative management with the State," the three tier method described is clearly designed to maintain the status quo in the exploitation rates of Cook Inlet salmon stocks. This is unacceptable to the stakeholders and, as described above, does not meet the requirement in NS1 that establishes maximum sustained yield as the basis for fishery management. Stakeholders on the Cook Inlet Salmon Committee have repeatedly explained that the three tier method that is used for the East Area in the Salmon FMP cannot be applied to the Cook Inlet salmon fishery. In Cook Inlet, except for Chinook stocks, all other stocks are intermingled spatially in one large stock complex with some temporal stratification.

In Cook Inlet Salmon Committee meetings, NMFS staff asserted that FMPs did not, and could not, address underfishing. It is clearly stated in the findings and the purpose of the MSA that FMPs are to develop fisheries on stocks that are underutilized. National Standard 1 requires that conservation and management measures "shall prevent overfishing while achieving, on a

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<sup>6</sup> ADF&G, 2010. State of Alaska's Salmon Fisheries Management Program. Response to Council request (June 30, 2010.) Correspondence. Juneau, Alaska. Attachment. p.5

continuing basis, the optimum yield from each fishery for the United States fishing industry." **Achieving optimum yield on a continuing basis on salmon stocks requires setting escapement goals closely centered on MSY and managing for exploitation rates (Fmsy) to achieve those goals. MSY or OY cannot be achieved if either underfishing or overfishing occurs.**

Members of the Salmon Committee brought these discussion points repeatedly to the table at the Cook Inlet Salmon Committee meetings and were rebuffed or dismissed by the Salmon Working Group. The Council and NMFS can no longer continue operating under the assumption that state salmon management practices comply with MSA in the face of this glaring discrepancy between what the MSA requires, what MSY exploitation rates must be to achieve OY, and what is actually occurring in the fishery.

The Salmon Committee was also tasked with reinterpreting ACLs and reference points for the Cook Inlet salmon fishery. In 2010, the State and Council agreed on the methodology, including how to assess the stocks with escapement goals, and how to assess the stocks without escapement goals, using exploitation rates and catch-based reference points. When stakeholders brought this methodology forward at a Salmon Committee meeting it was dismissed.

The parameters for the OFL/ABC/ACL framework for a salmon FMP, that were already accepted by the Council, NMFS and the Secretary of Commerce with Amendment 12, were described in the State of Alaska's Salmon Fisheries Management Program in this excerpt:

“NSI is implemented with the 2009 MSA Provisions; Annual Catch Limits; National Standards Guidelines; Final Rule, which specifies an OFL/ABC/ACL framework. A tier of reference points are defined: the overfishing limit (OFL) which corresponds with MSY; the acceptable biological catch (ABC) which cannot exceed the OFL; the annual catch limit (ACL); and the annual catch target (ACT). The difference between OFL and ABC depends on how scientific uncertainty is accounted for in the ABC control rule. The difference between ACL and ACT depends on management performance and uncertainty. For salmon, one can define reference points based on escapement, exploitation rate, or catch; however, catch based reference points and associated targets generally cannot be safely determined pre- season, and assessment of compliance can only be assessed post-season.

For escapement-based reference points in the OFL/ABC/ACL framework,

$$S_{OFL} < S_{ABC} = S_{MSY} \leq S_{ACL} < S_{ACT}$$

For exploitation rate- and catch- based reference points,

$$F_{OFL} > F_{ABC} = F_{MSY} \geq F_{ACL} > F_{ACT}$$

$$C_{OFL} > C_{ABC} = C_{MSY} \geq C_{ACL} > C_{ACT}”^7$$

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<sup>7</sup> Ibid, p. 3

Some of these basic elements of Alaska’s salmon management program, including the exploitation rates and conversions for escapement-based reference points and catch-based and exploitation rate-based management targets to fit in the OFL/ABC/ACL framework, are generally still applicable for this new amendment.

ADF&G is not currently following the salmon fisheries management program that they described in 2010 for any stock of salmon returning to Cook Inlet. They were not following their program in Cook Inlet in 2010 when they provided that information to the Council and NMFS. While some of Alaska’s salmon management program may comply with the requirements and standards of the MSA, their management practices and escapement goals do not.

The Council and NMFS did not meet their obligation and responsibility during the development of Amendment 12 to confirm that the management program described by ADF&G was actually being implemented. No effort has been made since then to fulfill that requirement. All the problems with the goals and the management that we have described above would have been revealed years ago, if the Council had met the requirement of a post season SAFE report; instead it’s been left to the stakeholders to bring this information forward.

The Council and NMFS must require and ensure, through diligent oversight, that all Cook Inlet salmon management plans, escapement goals, regulations, in-season management practices and post season SAFE reports are all designed and implemented to achieve what the MSA requires.

On May 7, 2020, President Trump signed an Executive Order titled “Executive Order on Promoting American Seafood Competitiveness and Economic Growth”. Section 4 of that executive order is excerpted below.

“Sec. 4. Removing Barriers to American Fishing. (a) The Secretary of Commerce shall request each Regional Fishery Management Council to submit within 180 days of the date of this order, a prioritized list of recommended actions to reduce burdens on domestic fishing and to increase production within 1 year of the date of this order.”

Clearly, the Cook Inlet salmon fishery is not being managed for MSY. There is tremendous potential to increase production rapidly and sustainably in this fishery, it just requires the fishery to be managed to the higher level of standards that are already required under the MSA.

Sincerely,

Erik Huebsch, Vice President



CC: James Armstrong, NPFMC  
Jeff Berger, Cook Inlet Processor Stakeholder  
Forrest Bowers, ADF&G  
Karla Bush, ADF&G  
Doug Duncan, NOAA  
Jordan Watson, NOAA  
Diana Evans, NPFMC  
Gretchen Harrington, NOAA  
Georgie Heaverley, Cook Inlet Stakeholder  
Hannah Heimbuch, Cook Inlet Stakeholder  
John Jensen, NPFMC  
Lauren Smoker, NOAA  
Mike Downs, SSC  
Marcus Hartley, Northern Economics

Attachment:1

State of Alaska's Salmon Fisheries Management Program

*Introduction*

The Fishery Management Plan (FMP) for salmon fisheries in the Exclusive Economic Zone (EEZ) off Alaska's coast defers salmon management to the State of Alaska. Compliance with the Magnuson - Stevens Fishery Conservation and Management Act (MSA) and National Standards (NS) guidelines requires the Regional Management Councils, with some exceptions, to establish a mechanism for specifying annual catch limits (ACLs) and accountability measures (AMs) to prevent overfishing of stocks that are covered under the FMP (MSA § 303(a)(15); 16 U.S.C. §1853(a)(15)). The North Pacific Fishery Management Council (Council) has requested the assistance of Alaska Department of Fish and Game (ADF&G) in evaluating the State of Alaska's salmon management program with regard to the requirements of the MSA. This document describes how the State of Alaska salmon management system is a successful and appropriate system for meeting MSA requirements to prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

The Council generally applies catch quota based fishery management systems for managing groundfish fisheries in the EEZ off Alaska. Annual catch quotas, often allocated among different users, are specified for each stock. The quota is based on the assessment of the stock biomass and the application of a suitable exploitation rate. Stock Assessment and Fishery Evaluation (SAFE) documents, which detail stock assessment and final acceptable biological catch (ABC) recommendations, are prepared in the year prior to the fishing season using stock assessment data collected as recently as the year prior to the fishery. However, proposed ABC recommendations are made for one and two years prior to the fishery based on data gathered up to two or three years before the fishery is conducted. This minimum 2-year lag between data acquisition and the years for the proposed recommendations allows suitable time for the lengthy public and government review process required under Federal law. The final ABC recommendations are very often close to the proposed ABCs, which require 2-year population projections. This is generally appropriate because groundfish fisheries under Council jurisdiction primarily occur on long-lived stocks where new recruits are not a significant component of the stock biomass, and projection models tend to use consistent growth and natural mortality rates. Because projections are reasonably accurate and quotas are small compared to the stock biomass, there is little risk of overfishing imposed by erroneous projection of stock assessment information; an inherent risk in relying on early projections to establish catch quotas. Furthermore, groundfish stocks are iteroparous, so management can adapt over time with conservation action taken in a subsequent year to increase the productive biomass and increase the allowable catch to respond to overly conservative management thereby minimizing foregone harvest.

Alaska salmon fisheries pose a different case because

- 1) unlike ground fish stocks salmon are semelparous reproducing once in the life cycle;

- 2) the harvestable surplus is entirely new recruits and catch is almost exclusively comprised of mature salmon;
- 3) the productivity of a specific year class cannot be improved by limiting harvest in subsequent years;
- 4) foregone harvest cannot be recaptured in future years; and
- 5) since abundance cannot be estimated effectively in advance, in-season estimations of abundance using contemporary data with appropriate management actions taken to assure escapement and optimum production in future years is the most effective way to avoid the risk of overfishing.

Alaskan salmon fisheries are managed by allowing fishing in specific times and areas. With the exception of Chinook salmon in the Southeast Alaska troll fishery, Alaska salmon fisheries generally occur on maturing fish in areas terminal or near-terminal to natal spawning systems, where fish are concentrated and highly vulnerable. Although salmon are vulnerable to fishing for only a short time, run timing is consistent and predictable from year to year. Salmon are relatively short-lived and highly productive, with sustainable catch levels large relative to the spawning stock. Because salmon run sizes are highly variable and unpredictable, specifying a catch quota based on pre-season abundance forecasts is a much inferior approach to salmon management than actively managing for monitored in-season abundance.

During the federal management era prior to Alaska statehood, salmon fisheries were largely managed by fishing schedules and fishing areas defined in regulation pre-season. There were provisions for in-season adjustments, but these were ineffective and rarely implemented due to the need for secretarial review and lack of in-season assessment information. By the time in-season adjustments were implemented it was too late for effective conservation measures. The inability to curtail fishing during weak runs and extended periods of poor productivity led to the depletion of Alaskan salmon stocks at the time of Alaska statehood. With the exception of the Southeast Alaska troll fishery and the Area M June net fisheries, catch quota based fishery management systems have never been used in State management of Alaska salmon fisheries (catch quotas were abandoned for the Area M June fishery in about 2003). These two fisheries occur on distant stocks with catch quotas comprising a relatively small portion of the overall stock.

In the State fishery management era, the vast majority of salmon may be taken only in fishing periods established in-season by emergency order. Fishing is allowed to continue only if in-season assessment of run strength indicates harvestable surpluses. The level of fishing time allowed depends on the strength of the in-season run. Authority to open and close fisheries is delegated to local area managers by the Commissioner of Fish and Game. This enables timely and effective fishery management responses to in-season information. Under State management, stock assessments are focused on obtaining escapement estimates for stocks targeted in fisheries. At the time of statehood, escapement data were available only for Bristol Bay sockeye salmon, a few Kodiak sockeye systems, Chignik sockeye, and aerial surveys were utilized to assess pink salmon escapement in coastal areas throughout the Gulf of Alaska. Escapement enumeration programs have since been greatly expanded, with direct or appropriate indicator stock monitoring of escapements for most sockeye, Chinook, and pink salmon stocks targeted in Alaska salmon fisheries, as well as important chum salmon stocks in Arctic-Yukon-Kuskokwim (AYK) region. This management and stock assessment framework addresses the principal overfishing risk in managing salmon fisheries: allowing intense fishing during weak runs. Because occasional weak runs are inevitable, timely and accurate

assessment of run strength avoids overfishing by implementing conservative fishing schedules conditioned on in-season abundance.

A fishery management system based on strict catch quotas and associated ACLs and AMs, implicit in the NS implementation, would be problematic for Alaska salmon fisheries. ACLs are inconsistent with the State's salmon fisheries management system which has a long-term, successful history of avoiding overfishing. Their implementation would not be beneficial for meeting the goals and requirements of MSA to prevent overfishing.

#### *National Standards Guidelines*

National Standards 1 (NS1) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that conservation and management measures "shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry."

Overfishing occurs whenever a stock or stock complex is subjected to a level of fishing mortality that jeopardizes the capacity of the stock or stock complex to produce maximum sustained yield (MSY) on a continuing basis. The MSA establishes MSY as the basis for fisheries management and requires that fishing mortality does not jeopardize the capacity of a fishery to produce MSY.

NS1 is implemented with the 2009 MSA Provisions; Annual Catch Limits; National Standards Guidelines; Final Rule, which specifies an OFL/ABC/ACL framework. A tier of reference points are defined: the overfishing limit (OFL) which corresponds with MSY; the acceptable biological catch (ABC) which cannot exceed the OFL; the annual catch limit (ACL); and the annual catch target (ACT). The difference between OFL and ABC depends on how scientific uncertainty is accounted for in the ABC control rule. The difference between ACL and ACT depends on management performance and uncertainty. For salmon, one can define reference points based on escapement, exploitation rate, or catch; however, catch based reference points and associated targets generally cannot be safely determined pre-season, and assessment of compliance can only be assessed post-season.

For escapement based reference points in the OFL/ABC/ACL framework,

$$S_{OFL} < S_{ABC} = S_{MSY} \leq S_{ACL} < S_{ACT}$$

For exploitation rate- and catch- based reference points,

$$F_{OFL} > F_{ABC} = F_{MSY} \geq F_{ACL} > F_{ACT}$$

$$C_{OFL} > C_{ABC} = C_{MSY} \geq C_{ACL} > C_{ACT}$$

NS1 requires that each FMP specify objective and measurable criteria (status determination criteria - SDC) for identifying when stocks or stock complexes covered by the FMP are overfished. The guidelines for NS1 specify that status determination criteria must specify both a maximum fishing mortality threshold (MFMT) and a minimum stock size threshold (MSST).

The fishing mortality threshold cannot exceed the MFMT or level associated with the MSY control rule. Exceeding MFMT for a period of 1 year constitutes overfishing. The MSST should be expressed in terms of spawning biomass or other measure of productive capacity, and should equal whichever of the following is the greater; one-half the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years. If the spawning stock size falls below the threshold for a year, the stock complex is considered overfished.

Due to their unique life history, implementation of the SDC as outlined in NS1 is problematic for salmon. Salmon are semelparous, short-lived (2-7 years), and generally vulnerable to exploitation only during their spawning migration (except immature salmon are vulnerable to some extent as bycatch in groundfish fisheries and immature Chinook salmon are targeted in ocean troll salmon fisheries). Thus, depending on maturity schedules, only a small to moderate fraction of the stock is vulnerable to fishing in a given return year. The inter-annual abundance of salmon spawning populations is typically highly variable, due to variable year-class strength and variable maturation schedules, and fishing mortality rates are expressed as a fraction of the spawning stock. This is very different than fishing mortality rates on long-lived iteroparous populations, where all fully recruited age classes are considered vulnerable to fishing. Status determinations for salmon must account for multiple return years from a single brood.

There are also difficult problems with implementation of an exploitation rate or catch based OFL/ABC/ACL/ACT framework for salmon. Alaskan salmon fisheries are generally managed under a constant escapement harvest policy where exploitation rates and catch fluctuate with variation in salmon run strength, with escapement targets fixed in time. The MSY control rules for salmon fisheries are more safely implemented by targeting management actions to achieve a target escapement level rather than a target fishing mortality rate or a target catch level. It is possible to determine catch-based and exploitation rate-based management targets for salmon on a post season basis. Here  $F_{MSY} = (1 - S_{MSY}/R)$  and  $C_{MSY} = F_{MSY} R$ . Because salmon runs are highly variable and impossible to accurately forecast, catch based management targets would be very risky and routinely result in over-harvest in the commonly encountered situation of an unanticipated weak run. Catch based MSY control rules are not appropriate for salmon fisheries. MSY exploitation rates on salmon are, on average, very high relative to those for iteroparous populations. With the highly variable and unpredictable nature of salmon spawning abundance, it is very difficult and risky to implement a fixed MSY exploitation rate harvest policy. ACLs and associated ACTs as described in NS1, clearly focus on a catch based management system. Because of high risk associated with catch-based management targets, which are based on inherently inaccurate pre-season forecasts of salmon runs, these approaches are inferior to escapement based management for avoiding overfishing of salmon stocks.

### *Salmon Stock Assessment and Management*

For salmon, maximum sustained yield is achieved by fishing appropriately to maintain the spawning escapement at levels that provide potential to maximize surplus production. Salmon populations

exhibit compensatory and density dependent stock recruitment dynamics, driven by intra-specific competition for limited spawning and rearing habitat. In salmon populations, sustained yield is driven by increased production in response to fishing induced reductions in spawning escapement and concomitant increased survival accompanying decreased competition. Sustained yield in iteroparous populations is driven by fishing induced increased growth in biomass over biomass lost to natural maturity (i.e., yield per recruit). This concept has no relevance for salmon since the vast majority of fish are harvested at the end of their life.

Biological reference points for salmon populations are estimated based on long-term, stock specific assessment of recruits from parent escapement or long-term assessment of escapement. Estimating biological reference points for salmon populations requires direct assessment of the spawning stock. Biological reference points for iteroparous populations can and usually are estimated without direct stock- recruit assessment data. The salmon stock assessment programs employed by ADF&G are designed to monitor stock and age-specific catch and escapements. The program employs comprehensive sampling of catch and escapements by age; comprehensive escapement monitoring using tower counts, weir counts, sonar counts, mark-recapture experiments, aerial counts, and foot counts; and routine monitoring and stock identification of catch using a variety of methods including, genetic stock identification (GSI) , coded wire tags , and otolith marks. These data enable the current season run (i.e., catch plus escapement) to be assigned to prior brood years (i.e., the return from stock specific parent escapement). Comprehensive implementation of the ADF&G salmon stock assessment programs, over time, provides stock- recruit data necessary for developing MSY based escapement goals. Since the catch and escapement monitoring programs are conducted in real-time, they provide in-season assessments of run strength necessary for managers to implement ADF&G's escapement based harvest polices. In fisheries, where escapement monitoring occurs distant from the fishery, test fisheries are employed to provide more real-time assessment.

The compensatory nature of salmon population dynamics is reflected in the Ricker stock recruit model (Figure 1). Appropriate biological reference points used as benchmarks in status determinations, and in setting escapement goals can be determined from the Ricker model parameters estimated by fitting the Ricker model to historical stock-recruit data (Ricker 1954). These include  $\alpha$ , the productivity of the stock and the overfishing harvest rate ( $U_{of} = 1 - 1/\alpha$ ); the equilibrium escapement ( $S_{eq}$ ); MSY escapement ( $S_{msy}$ ), (typically between .35 and .45 of the equilibrium escapement), and the MSY harvest rate ( $U_{msy}$ ). Escapement goals are typically set at the range of escapements that provides 90% or more of MSY. The approach of using the fitted Ricker stock-recruit model to set escapement goals is routinely used by ADF&G for stocks where stock specific runs can be estimated and there is sufficient contrast in the historical escapement data to reflect density dependence.

Biological reference points estimated for many salmon stocks demonstrate that salmon populations are extremely productive, with the limit return per spawner ( $\alpha$ ) averaging 3.7, 4.0, 3.7, 6.0, and 6.9 for pink, chum, coho, sockeye, and Chinook salmon, respectively. MSY exploitation rates (i.e., the average harvest rates employed to maintain constant escapement in the escapement goal range) are high, averaging 0.53, 0.56, 0.63, 0.65, and 0.68 for pink, chum, coho, sockeye, and Chinook salmon, respectively. The overfishing exploitation rate (i.e., the fishing rate if continuously applied will

deplete the stock) is also very high averaging 0.72, 0.74, 0.80, 0.81, and 0.83 for pink, chum, coho, sockeye, and Chinook salmon, respectively (Eggers and Clark in prep.).

Currently ADF&G has established 290 escapement goals (72 Chinook salmon stocks, 70 chum salmon stocks, 29 coho salmon stocks, 41 pink salmon stocks, and 78 sockeye salmon stocks) for stocks where escapements are routinely monitored (Munro and Volk 2010). Escapement goals have been established for target stocks in every salmon fishery that ADF&G manages. A variety of methods are used to estimate escapement goals. Most methods directly estimate MSY escapement range from stock productivity data as well as rearing and spawning habitat considerations. In the absence of stock-recruit information, many escapement goals are set based on the percentile method (Bue and Hasbrouck, (unpublished). **[Note – not only was this paper unpublished, it was not peer reviewed and should not be used because the upper tier recommended escapement goals that exceeded the carrying capacity of the habitat and were found to be unsustainable.]** For stocks with high contrast in historical escapement data, the escapement goal is the central 50 percentile range of historical escapements and for stocks with low contrast or low harvest rates, the escapement goal is the central 85 percentile of historical escapements. Eggers and Clark (in prep) show that the percentile method provides a reasonable and conservative proxy for MSY escapement goal ranges. Computer simulations demonstrate that results from the percentile method are virtually equal to the actual MSY escapement range (Eggers and Clark in prep.) if the stock is exploited in a manner that provides MSY (Figure 2). The simulations also demonstrate that the 25 percentile of historical escapements is well above the lower bound of the MSY escapement goal range, except for situations where the stock is heavily exploited above the level that provides for MSY (Figure 2). For situations where the stock is exploited below MSY levels, the percentile method estimates escapements above the MSY escapement range (Figure 2).

A meta-analysis of stock-recruit data from ADF&G salmon stocks (42 sockeye salmon stocks, 7 Chinook salmon stocks, 5 coho salmon stocks, 6 chum salmon stocks, and 7 pink salmon stocks) demonstrates that escapement goals estimated by applying the percentile method were consistent with or above MSY escapement ranges as well as the established ADF&G goals for stocks where the MSY escapement goal was estimable (Eggers and Clark in prep). There were several sockeye salmon stocks where the percentile method escapement goals appeared less conservative than the meta-analysis MSYs or the ADF&G established escapement goals. In these cases, there was a demonstrated lack of density dependence in the stock recruit data which precluded a statistically significant estimate of the MSY escapement level. In these cases, escapement goals were established based on yield analyses with escapement goals based on consistent and high levels of yield. The fact that the central 50 percentile escapement ranges were above the MSY escapement range for most stocks demonstrates that salmon are generally exploited below MSY. Fishing is constrained during weak runs and available surpluses with strong runs are rarely achieved due to conservative fishery management, market constraints, or limited fishing power.

#### *State of Alaska's Salmon Status Determination*

The State of Alaska stock assessment and fishery management system, as embodied in the *Escapement Goal Policy* (EGP, 5 AAC39.223) and *Policy for the Management of Sustainable*

*Salmon Fisheries* (PMSSF, 5 AAC 39.222) is consistent with NSI. Escapement goals are based on direct assessments of MSY escapement level ( $S_{msy}$ ) from stock recruit analysis (i.e., BEG) or a reasonable proxy (i.e., SEG) (c.f. Munro and Volk, 2010). Escapement goals are specified as a range or a lower bound threshold. In general, escapement goal ranges produce 90% of MSY, and escapements are considered neutral within the range. Because yield is relatively flat across escapements that constitute an escapement goal range, these ranges give managers the flexibility to moderate fishing to protect stocks of weak runs that are commonly exploited in mixed stock fisheries.

Alaska's salmon fisheries are managed to maintain escapement within levels that provide for MSY ( $S_{msy}$ ), escapements are assessed on an annual basis, all appropriate reference points are couched in terms of escapement level, and status determinations are made based on the stock's level of escapements. Three levels of concern are defined in the PMSSF—yield, management, and conservation. The level of concern relevant to status determination is the management concern. A management concern results from a continuing or anticipated inability to maintain escapements within the escapement goal range or above the threshold. Thus, the lower range or threshold of escapement goals is consistent with NSI minimum stock size threshold and a determination of a management concern is equivalent to a determination of an overfished state in NSI. Overfishing is defined in the PMSSF as a level of fishing that results in a management or conservation concern. With the determination of a management concern, ADF&G and the Board of Fisheries are required to develop an action plan to address the concern. This may include measures to restore and protect salmon habitat, identification of salmon stock rebuilding goals and objectives, implementation of specific management actions needed to achieve rebuilding goals and objectives, and development of performance measures appropriate for monitoring and gauging the effectiveness of the action plan.

ADF&G reviews salmon escapement goals and stock status for each salmon management area on a 3-year cycle, which is consistent with Board of Fisheries cycle of regulatory review of salmon fisheries by management area. Escapement goal and stock status reviews are prepared prior to the Board of Fisheries review. These documents for Southeast Alaska include DerHovanisian et al (2005), Eggers and Heintz (2008), Heintz et al (2008), Eggers et al. (2008), McPherson et al. (2008), Shaul et al.(2008); Prince William Sound includes Evenson et al. (2005) , Lower Cook Inlet includes Otis and Szarzi (2007), Upper Cook Inlet includes Bue and Hasbrouck (2001), Fair et al. (2007), Kodiak includes Nelson et al (2005), Chignik includes Witteveen et al. (2007), Alaska Peninsula includes Nelson et al. (2006), Bristol Bay includes Baker et al., (2005), and the Arctic-Yukon-Kuskokwim Region includes Brannian et al. (2007) and Molyneux and Brannian (2006).



# EXHIBIT G

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*Attorneys for United Cook Inlet Drift Association and  
Cook Inlet Fishermen's Fund*

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF ALASKA

UNITED COOK INLET DRIFT  
ASSOCIATION AND COOK INLET  
FISHERMEN'S FUND,

Plaintiffs,

v.

NATIONAL MARINE FISHERIES SERVICE  
ET AL.,

Defendants.

Case. No. 3:13-cv-00104-TMB

**DECLARATION OF ERIK HUEBSCH IN SUPPORT OF MOTION TO  
ENFORCE JUDGMENT**

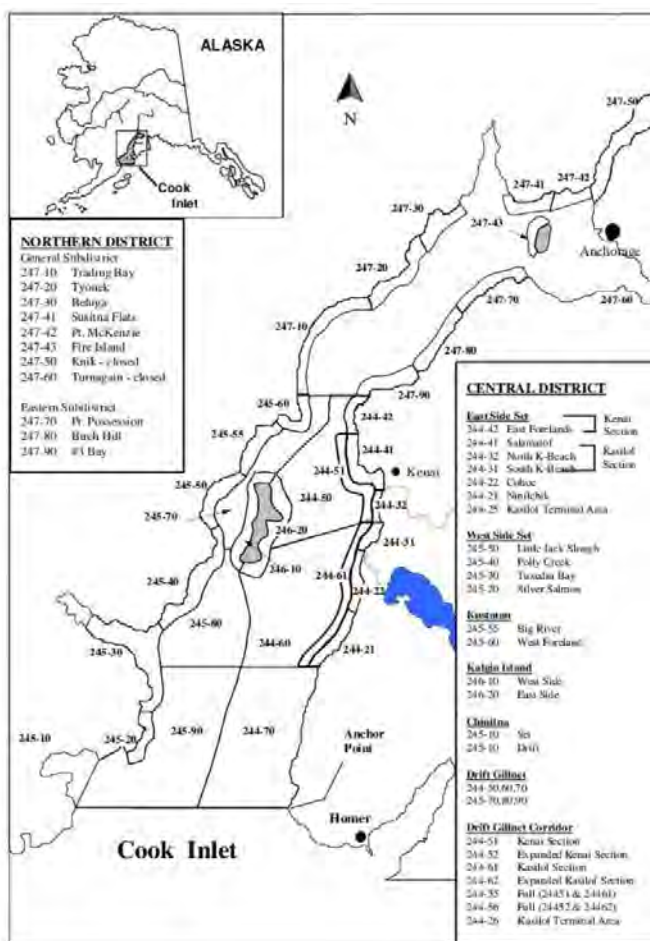
1. My name is Erik Huebsch. I am over 18 and have personal knowledge of the matters contained in this declaration, except where otherwise noted below.

2. I am a member of the United Cook Inlet Drift Association (UCIDA) and have been the Vice President of that organization for nine years.

DECLARATION OF ERIK HUEBSCH  
*United Cook Inlet Drift Association et al. v. NMFS et al.*, 3:13-cv-00104-TMB  
Page 1

3. I am a commercial fisherman and live in the town of Kasilof, a small fishing community near where the Kasilof River enters Cook Inlet. I own and operate a drift gillnet fishing boat and a limited entry permit that allows me to participate in the Cook Inlet drift gillnet salmon fishery. I fish predominately in Cook Inlet and have done so since 1977. I am married; my wife and I have fished together since 1992, and commercial salmon fishing is the primary source of our income.

4. Cook Inlet has been one of the nation's most productive salmon fisheries, and includes sockeye, chinook, pink, chum, and coho. My limited entry permit allows me to catch all five species of salmon. The area that I fish in is referred to as the Central District of Upper Cook Inlet and depicted on the map below (the area north of the Anchor Point line and south of the horizontal black line to the left of the words Central District):



The map above depicts various statistical areas historically used by the Alaska Department of Fish and Game (ADF&G).

5. Commercial fishing in Upper Cook Inlet occurs in both state and federal waters and has primarily two gear types: (1) “drift net” fishing vessels that operate in both state and federal waters; and (2) shore-based “set net” fishing operations. I operate a drift net vessel.

6. Drift net fishing occurs in the “Central District” depicted in the map in paragraph 4. A large section of the Central District is federal waters in the exclusive

DECLARATION OF ERIK HUEBSCH  
*United Cook Inlet Drift Association et al. v. NMFS et al.*, 3:13-cv-00104-TMB  
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economic zone (EEZ). Historically, salmon fishing occurred predominately in the EEZ portions of the Central District because that is one of the best places to catch salmon. The importance of this federal fishing area was expressly recognized by federal treaty when it was exempted from the general ban on drift net fishing under the 1954 International Convention for the High Seas Fisheries of the North Pacific Ocean.

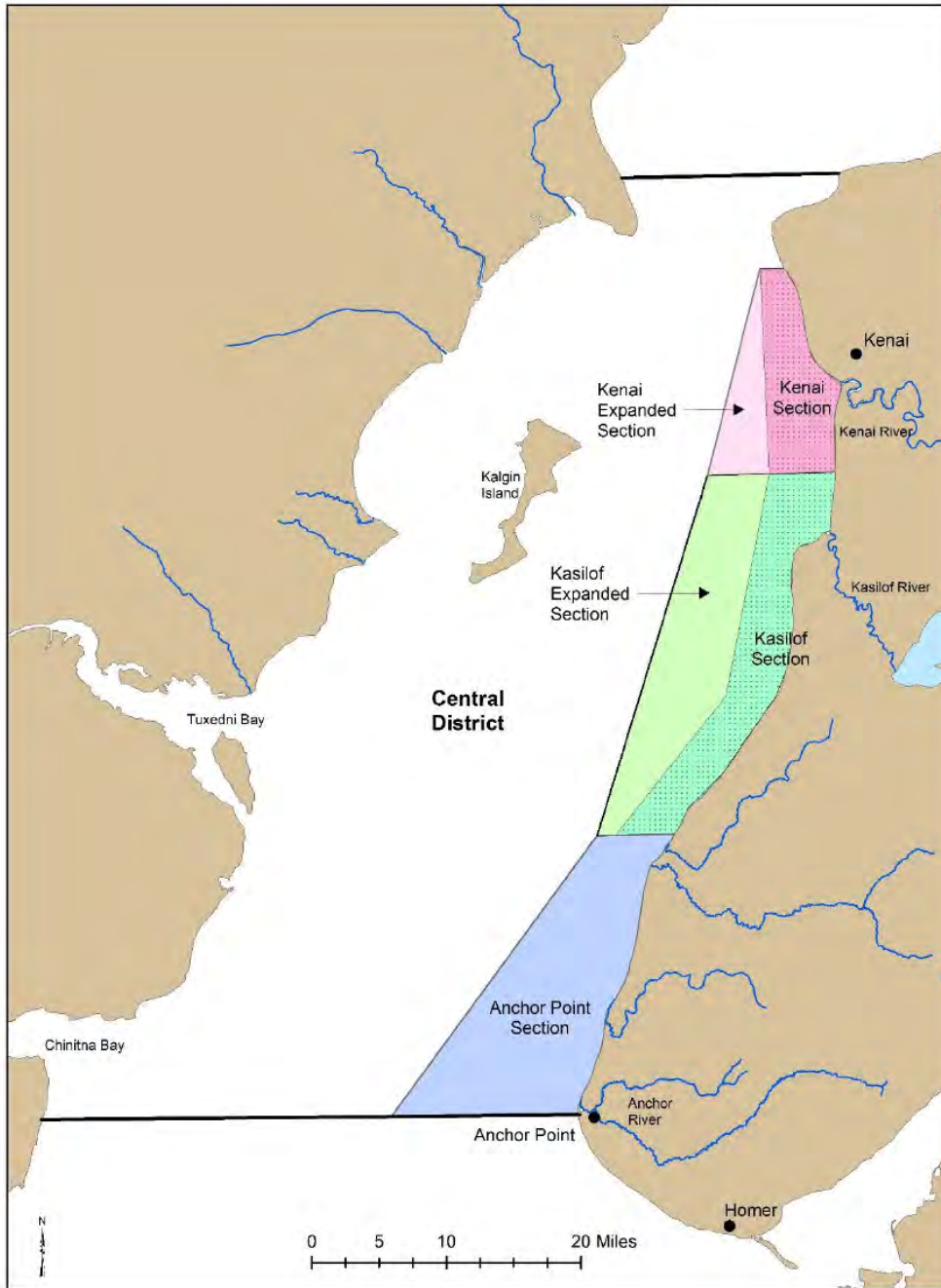
7. Drift gillnet fishers in Cook Inlet make a living by searching a large area to find schools of salmon. The area between our southern and northern fishing boundaries in the Central District is approximately 69 miles long by 32 miles wide. Fishing is not a precise science; no one knows exactly where the fish will be. I depend on the ability to move to different, potentially more productive, locations throughout a fishing period. I also depend on the ability to cross jurisdictional lines from state waters (up to three miles offshore) into federal waters within Cook Inlet.

8. The State of Alaska has been managing the salmon fishery in Cook Inlet (both in state and federal waters) since statehood. Prior to statehood, it was generally recognized that salmon stocks in Cook Inlet were overfished. Even after statehood and the banning of fish traps, commercial fishing still did not improve until 1976 when the Magnuson-Stevens Act (MSA) was enacted. Commercial fishing in Cook Inlet was a thriving industry for the next two decades. The commercial harvest in the 1980s and 1990s routinely exceeded four million sockeye, with harvests as high as nine million in 1987 and 1992. These historical harvests are recorded by the State of Alaska and

published annually by the state in its annual management reports. The most recent report is: Shields, P., and A. Frothingham, 2018. Upper Cook Inlet commercial fisheries annual management report, 2017. Alaska Department of Fish and Game, Fishery Management Report No. 18-10, Anchorage. I have attached true and correct excerpts of that report at Exhibit A to this declaration, including tables showing historical harvest data in Upper Cook Inlet from 1966 through 2017.

9. During the 1980s and 1990s, drift net fishing vessels operated a minimum of two days a week, throughout state and federal waters, from June through August, and routinely operated much more frequently (as much as seven days a week during the peak of the salmon run). During these decades, the fleet had few time or area restrictions, allowing the drift fleet to efficiently target areas with the highest concentration of sockeye. The commercial salmon fishery thrived during these decades, and the salmon runs remained strong and healthy.

10. Starting around 1996, the Alaska Board of Fisheries (the Board) began to change its approach to managing the salmon fisheries. As set forth in the Declaration of Jeff Fox, the Board began to impose a series of ever-increasing time and area restrictions on the commercial fleet. Instead of being allowed to fish inlet wide and pursue fish where located, the Board developed a set of increasing and shifting set of “corridors” (generally outside the EEZ) and increasingly restricted the time available for fishing. Some of these corridor experiments are depicted on the figure below:



Instead of being allowed to fish inlet wide, fishing periods were progressively limited to various sections (e.g. the Kasilof Section or the Anchor Point Section).

DECLARATION OF ERIK HUEBSCH  
*United Cook Inlet Drift Association et al. v. NMFS et al.*, 3:13-cv-00104-TMB  
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11. These restrictions were not based on science or sound principles of fishery management. Rather, these restrictions were imposed to create a fictional “conservation corridor” that would allow more sockeye to get to the Susitna River on the belief that the Susitna River had chronic under-escapement (not enough returning salmon). However, the restrictions have been proven to be both needless and ineffective. ADF&G thought that the Susitna River had chronic under-escapements of sockeye salmon beginning in 1982. However, a study conducted by ADF&G from 2006 through 2009 revealed that methods used for counting sockeye salmon in the Susitna River were grossly inaccurate and, in fact, *had been undercounting the fish returns for the prior 27 years.*<sup>1</sup> During that time, the Board imposed more and more restrictions on the drift gillnet fleet in an effort to increase sockeye returns to the Susitna River. The 2006-09 ADF&G study revealed that the Susitna River sockeye *escapement goal had been exceeded by 96 percent of the time* during that period. In some of those years the goal was exceeded by as much as 300 to 400 percent.<sup>2</sup> The sonar counter had only been counting one out of every three or four fish that swam past it. After 2009, the ADF&G switched to the Percentile Approach to

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<sup>1</sup> Fair, L. F., T. M. Willette, and J. Erickson. 2009. Escapement goal review for Susitna River sockeye salmon, 2009. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-01, Anchorage.

<sup>2</sup> Cassidy, C., E. Huebsch. 2014. Fishery related aspects of faulty sonar data, overescapement and impaired habitat for Susitna sockeye. United Cook Inlet Drift Association. Soldotna, AK.



set escapement goals for the Susitna River system. In 2014, they determined that those goals were also unsustainable, set too high, and likely exceeded the carrying capacity for many stocks. In 2017, after 35 years of having unsustainably high and incorrect goals, ADF&G finally lowered the escapement goals for three lakes in the Susitna River system. Genetic studies conducted by ADF&G in 2012 and 2013 also indicated that Susitna River-bound salmon were not concentrated in any particular area in Cook Inlet, so restrictions on where commercial fishing occurred made no difference. When all of this data was presented to the Board, it took no action to walk back the inappropriate fishing restrictions that had been developed for the non-existent problem. The restrictions – based on flawed science and faulty data – are still being used in the current management plans. The entire commercial fishing industry has suffered immense economic loss by not being allowed to harvest these surplus salmon stocks.

12. The state's arbitrary time and area restrictions on commercial fishing have also reduced the commercial harvest of other salmon species in Cook Inlet. Large surpluses of healthy populations of coho, pink, and chum salmon go unharvested every year. The run of pink salmon is the largest stock of salmon to enter Cook Inlet; in some years the pink run can exceed 20 million salmon. An ADF&G study revealed that the commercial harvest of pink salmon in Cook Inlet is about 2 percent of the total run, the commercial harvest of chum salmon is about 6 percent of the total run, and the

commercial harvest of coho salmon in Cook Inlet is about 10 percent of the total run.<sup>3</sup>

For most stocks, a 50 to 70 percent harvest rate on returning salmon is appropriate to achieve maximum sustainable yield (MSY), one of the primary goals of the MSA.

13. The management plans created by the Board and implemented by the ADF&G in the last 20 years have significantly reduced my ability to harvest these underutilized stocks of fish and make a productive living. These management plans also prevent achieving a harvest rate (fishing mortality rate) on these salmon stocks that will meet the MSY and optimum yield requirement of the MSA. In the MSA, Congress declared: “*A national program for the development of fisheries which are underutilized or not utilized by the United States fishing industry... is necessary to assure that our citizens benefit from the employment, food supply, and revenue which could be generated thereby.*” Current state management of the Cook Inlet salmon fishery is inconsistent with the MSA and with Congress’s intent.

14. At the same time the Board was shunting fishing into corridors, it was also increasing the escapement goals for major salmon stocks, such as sockeye, on the Kenai and Kasilof Rivers. A salmon escapement goal is the measure used to ensure that appropriate numbers of adult salmon return to their natal stream to spawn. This, in turn, should produce the appropriate numbers of offspring and subsequently the optimum

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<sup>3</sup> Willette, T.M., Robert DeCino, and Nancy Gove. 2003. Mark-Recapture Population Estimates of Coho, Pink and Chum Salmon Runs to Upper Cook Inlet in 2002. Alaska Department of Fish and Game Regional Information Report No. 2A03-20, Anchorage.

number of returning adults. If too few salmon return to their natal streams to spawn, then future populations of salmon will not be as robust as they should be. If escapement goals are exceeded and too many salmon return to a river system and exceed the carrying capacity of the spawning and rearing habitat, then resulting populations of salmon will also be diminished.<sup>4</sup> Maintaining the level of spawning salmon within what is known as the Biological Escapement Goal range will produce the MSY, over the long term. Yield equates to harvest.

15. Since 2001 ADF&G has been using a method known as the Percentile Approach to set nearly half the escapement goals across the state, including several goals in Cook Inlet. This methodology was based on incomplete data and was never peer reviewed. Not until 2014 did the ADF&G disclose that the Percentile Approach upper level escapement goals were “unsustainable” and “likely exceeded the carrying capacity for many stocks.”<sup>5</sup> In Cook Inlet the problem has been compounded by the Board and the ADF&G’s management policies and practices that have resulted in escapement goals being routinely exceeded. The Kenai River sockeye in-river goal has been exceeded in 9 of the last 10 years, and at least 14 of the last 20 years. The Kenai River system is the

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<sup>4</sup> Clark, R., M. Willette, S. Fleischman, and D. Eggers. 2007. Biological and fishery related aspects of overescapement in Alaskan sockeye salmon *Oncorhynchus nerka*. Alaska Department of Fish and Game Special Publication No. 07-17, Anchorage.

<sup>5</sup> Clark, R. A., D. M. Eggers, A. R. Munro, S. J. Fleischman, B. G. Bue, and J. J. Hasbrouck. 2014. An evaluation of the percentile approach for establishing sustainable escapement goals in lieu of stock productivity information. Alaska Department of Fish and Game, Fishery Manuscript No. 14-06, Anchorage.

best salmon producing river in Cook Inlet. Chronic over-escapements like these not only reduce future runs of salmon, they also waste harvestable surpluses of fish that would otherwise benefit all user groups, the seafood industry, and the regional and state economies. The reason the escapement goals have been exceeded is that restrictions placed on the time and areas discussed above have made it impossible to harvest the full surplus of salmon returning to these systems.

16. By the late 2000s, it was clear to me and many members of UCIDA that the State of Alaska was mismanaging the commercial fishing in Cook Inlet and had no intention of changing its direction. The Board was not making science-based management decisions, and the commercial fishing industry was suffering severe financial losses as a result. The average commercial harvest had dwindled to about half (or less) of what it once was. Many fishers were struggling to make any kind of profit or to even meet expenses.

17. As a result, UCIDA decided to seek help from the National Marine Fisheries Service (NMFS). NMFS has an express obligation to manage our nation's fisheries under the MSA and the Cook Inlet salmon fishery is obviously an important national resource. The North Pacific Fishery Management Council (Council) had developed a fishery management plan (FMP) for salmon that included Cook Inlet (the 1990 Salmon FMP). While the 1990 Salmon FMP deferred management of Cook Inlet

salmon to the State of Alaska, it contained provisions allowing NMFS to review state regulations.

18. In 2008, after the Board imposed a set of egregious and unwarranted restrictions, UCIDA filed a petition with the Secretary of Commerce and NMFS on June 16, 2008, asking for emergency rulemaking to address the state's improper management of fisheries in Cook Inlet. NMFS ignored the petition, and UCIDA had to file suit to try and compel NMFS to respond on March 5, 2009. *See United Cook Inlet Drift Association v. Wolf*, No. 3:09-cv-0043-RRB. A true and correct copy of the complaint in that matter is attached hereto as Exhibit B.

19. In response to that lawsuit, NMFS ultimately (17 months later) responded to UCIDA's petition by denying the petition and refusing to take any action. UCIDA then filed suit on December 2, 2009, challenging NMFS's denial of the petition. *See United Cook Inlet Drift Association v. Locke*, No. 3:09-cv-00241-TMB. The parties settled that dispute with a consent decree entered March 5, 2009, whereby NMFS agreed to timely consider a new petition submitted by UCIDA in compliance with the requirements of the 1990 Salmon FMP. A true and correct copy of that consent decree is attached hereto as Exhibit C.

20. While UCIDA went about to prepare a new petition, as per the consent decree, NMFS proceeded to work with the Council to amend the 1990 Salmon FMP in a manner that mooted the effectiveness of the 2009 consent decree. In 2010, the Council

undertook a comprehensive review of the 1990 Salmon FMP. Instead of addressing concerns with state management, the Council released a “Discussion Paper” that proposed to redefine the geographic scope of the 1990 Salmon FMP so that it could “defer” all federal management obligations to the State of Alaska.

21. Members of UCIDA, including myself, repeatedly objected to these proposed changes, explaining that a fishery management plan was required for the Cook Inlet salmon fishery and that the Council and NMFS could not defer their obligations to manage the fishery to the state. Our requests were met with hostility from both NMFS and the Council who stated that UCIDA members simply misunderstood the role and function of the MSA. One Council member (in open testimony) called UCIDA members “naïve and misguided” to request an FMP that covers the Cook Inlet salmon fishery. The Council ultimately adopted Amendment 12, removing Cook Inlet from the Salmon FMP.

22. UCIDA then had to file another lawsuit to require NMFS and the Council to produce an FMP. Then Ninth Circuit ultimately agreed with UCIDA’s reading of the MSA, and instructed NMFS that it could not “wriggle out” of its statutory obligations by deferring to the state or allow the fishery to be managed based on state parochial concerns.

23. On remand, NMFS and UCIDA negotiated a stipulated order governing remand. NMFS expressed that it wanted the state to continue to manage the fishery until a new FMP could be developed, and the regional director for NFMS expressly stated that

he would close the fishery if NMFS was forced to manage the fishery prior to completion of a new FMP. UCIDA ultimately agreed to allow continued state management in the interim with the understanding that it would at least preserve the status quo in the interim.

24. I have been actively involved in the Council process regarding the Salmon FMP, and how it would apply to the Cook Inlet salmon fishery, since 2010. I have testified to the Council and its Advisory Panel on numerous occasions on this topic and participated in the salmon workshop that was held prior to the adoption of Amendment 12 to the Salmon FMP.

25. On June 18, 2018, I was appointed to the Council's Cook Inlet Salmon Committee. The Council created this advisory committee to help inform an amendment to the Salmon FMP that would include Cook Inlet. The Salmon Committee meetings were held in Anchorage on December 4, 2018, March 6, 2019, and April 2, 2019. I have attended and participated in all three meetings.

26. As a stakeholder and as a Salmon Committee member, it is apparent that the Council's process to produce an amendment to the Salmon FMP for the Cook Inlet salmon fishery is presently stalled and at an impasse over fundamental issues governing the FMP. The issues relate to the scope of the Ninth Circuit's ruling and the scope of the FMP that must be produced. NMFS and the Council view their obligations narrowly. They believe that the FMP must only address salmon in the EEZ, rather than address the fishery throughout its range. NMFS and the Council also believe that they can satisfy the

requirements of the MSA by just adopting existing state measures for escapement goals and deferring to state decisions about when to open and close specific areas. These approaches are in direct conflict with the MSA and the Ninth Circuit's prior decision in this case.

27. As a stakeholder and a Salmon Committee member, I do not see any way that this impasse will be resolved short of judicial intervention. The issues at play are fundamental, and NMFS and the Council are once again treating stakeholders as naïve and misguided, this time saying that stakeholders do not understand the "boundaries of the ballfield."

28. UCIDA has now been at the process of trying to get NMFS and the Council to do their job since 2008. If the Court does not intervene now, this process either is going to stall perpetually at an impasse or will end up with a legally deficient FMP. As was the case leading up to Amendment 12, the Council and NMFS have released a "Discussion Paper" describing the alternatives that the Council is considering. None of the alternatives comply with the Ninth Circuit's instructions. This will result in another trip to this Court (and then the Ninth Circuit) and even more delay.

29. The fishing industry is unlikely to survive any further delay without a legally compliant FMP. My income is now less than 25% of what it was historically, and that is typical of the industry as a whole. In 1996 there were 23 salmon processors



operating in Cook Inlet; now there are only four.<sup>6</sup> The state is ruining the commercial fishery while NMFS and the Council sit idly by.

30. The state is not preserving the status quo during remand. Things have gotten appreciably worse in the three seasons under state management since the Ninth Circuit issued its ruling in the case. Each of the three commercial seasons since the Ninth Circuit issued its ruling (2017, 2018, and 2019) has been dismal for the commercial industry. The 10-year average annual commercial catch from 2008 to 2017 is down to 2.7 million sockeye. In 2017, the total commercial sockeye harvest was almost *a million* fish short of that average level at 1.8 million sockeye. The following year was even worse; the *total* commercial sockeye harvest in 2018 was only 814,516, the worst harvest in over 40 years. The total commercial harvest of all five salmon species in 2018 was approximately 1.3 million salmon, which was 61% less than the (already depressed) recent 10-year average annual harvest of 3.4 million fish. And despite the severe hardships caused by the 2018 season, Alaska's Governor refused to support requests for disaster declarations that would pave the way to make relief funds available to commercial fishers impacted by the disaster. The City of Kenai and the Kenai Peninsula Borough passed resolutions declaring an economic disaster for the 2018 commercial fishing industries and asked the Governor to do the same. Copies of those resolutions are

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<sup>6</sup> Ruesch, P, and Fox, J. Upper Cook Inlet Commercial Fisheries Annual Management Report, at 40 (1996).

attached hereto as Exhibits D and E. The City of Homer also asked the Governor to issue a disaster declaration. A true and correct copy of that letter is attached hereto as Exhibit F. Despite these requests, the Governor never issued a disaster declaration or even explained why he was refusing to do so.

31. The 2019 season was almost as dismal and was the third worst season since 1981. The total commercial catch of salmon was only 2 million fish, far below the 10-year average, and the total sockeye harvest was only 1.7 million. The poor results in 2019 were especially frustrating because the state severely restricted the fishery while once again grossly exceeding the escapement goals with surplus salmon. If the over-escapement numbers in the Kenai and Kasilof Rivers are indicators for all of Cook Inlet in 2019, then there were over a million surplus sockeye salmon that were not harvested. So the state in 2019 wasted nearly as many sockeye as it allowed the entire commercial fishery to harvest. This lost harvest wastes the potential economic and nutritional contribution to the nation. Continued restrictions on commercial fishers also prevented the harvest of other salmon stocks (pink, chum and coho). This is a continuing problem for the state, which has now over-escaped sockeye (allowing a recognized surplus to go unharvested) in the Kenai River for at least 9 of the last 10 years.


32. This situation is untenable; processors are going bankrupt and commercial fishers face insolvency, all the while the state plugs the rivers with harvestable surplus

salmon and NFMS and the Council do nothing. Neither I nor the commercial fishing industry in Cook Inlet can afford another season like this under state management.

33. The 2020 season is now only about 10 months away, and there is no reason to expect it to be any better. In fact it is likely to be significantly worse as the industry will likely face increasing time and area closures. The commercial fishing industry cannot afford any more delays, and urgently needs this Court to intervene and get the remand back on track toward the prompt completion of a legally compliant FMP.

I hereby declare under penalty of perjury of the law of the United States of America that the foregoing information is true and correct to the best of my knowledge and belief.

**DATED:** August 29, 2019



Erik Huebsch

**CERTIFICATE OF SERVICE**

I hereby certify that on September 4, 2019 I filed a copy of the foregoing document, *Declaration of Erik Huebsch*, was served electronically on the below parties.

Aaron C. Peterson	<a href="mailto:aaron.peterson@alaska.gov">aaron.peterson@alaska.gov</a>
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*/s/ Jason T. Morgan* \_\_\_\_\_

Jason T. Morgan

DECLARATION OF ERIK HUEBSCH  
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**Fishery Management Report No. 18-10**

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**Upper Cook Inlet Commercial Fisheries Annual  
Management Report, 2017**

by

**Pat Shields**

and

**Alyssa Frothingham**

May 2018

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



Exhibit A - 1

## **APPENDIX B: HISTORICAL DATA**

Appendix B1.-Upper Cook Inlet commercial Chinook salmon harvest by gear type and area, 1966-2017.

Year	Central District						Northern District			Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet			
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	%	
1966	392	4.6	7,329	85.8	401	4.7	422	4.9	8,544	
1967	489	6.2	6,686	85.1	500	6.4	184	2.3	7,859	
1968	182	4.0	3,304	72.8	579	12.8	471	10.4	4,536	
1969	362	2.9	5,834	47.1	3,286	26.5	2,904	23.4	12,386	
1970	356	4.3	5,368	64.4	1,152	13.8	1,460	17.5	8,336	
1971	237	1.2	7,055	35.7	2,875	14.5	9,598	48.6	19,765	
1972	375	2.3	8,599	53.5	2,199	13.7	4,913	30.5	16,086	
1973	244	4.7	4,411	84.9	369	7.1	170	3.3	5,194	
1974	422	6.4	5,571	84.5	434	6.6	169	2.6	6,596	
1975	250	5.2	3,675	76.8	733	15.3	129	2.7	4,787	
1976	690	6.4	8,249	75.9	1,469	13.5	457	4.2	10,865	
1977	3,411	23.1	9,730	65.8	1,084	7.3	565	3.8	14,790	
1978	2,072	12.0	12,468	72.1	2,093	12.1	666	3.8	17,299	
1979	1,089	7.9	8,671	63.1	2,264	16.5	1,714	12.5	13,738	
1980	889	6.4	9,643	69.9	2,273	16.5	993	7.2	13,798	
1981	2,320	19.0	8,358	68.3	837	6.8	725	5.9	12,240	
1982	1,293	6.2	13,658	65.4	3,203	15.3	2,716	13.0	20,870	
1983	1,125	5.5	15,042	72.9	3,534	17.1	933	4.5	20,634	
1984	1,377	13.7	6,165	61.3	1,516	15.1	1,004	10.0	10,062	
1985	2,048	8.5	17,723	73.6	2,427	10.1	1,890	7.8	24,088	
1986	1,834	4.7	19,826	50.5	2,108	5.4	15,488	39.5	39,256	
1987	4,552	11.5	21,159	53.6	1,029	2.6	12,700	32.2	39,440	
1988	2,237	7.7	12,859	44.2	1,148	3.9	12,836	44.1	29,080	
1989	0	0.0	10,914	40.8	3,092	11.6	12,731	47.6	26,737	
1990	621	3.9	4,139	25.7	1,763	10.9	9,582	59.5	16,105	
1991	246	1.8	4,893	36.1	1,544	11.4	6,859	50.6	13,542	
1992	615	3.6	10,718	62.4	1,284	7.5	4,554	26.5	17,171	

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Year	Central District				Northern District			
	Drift Gillnet		Upper Subdistrict Set		Kajin/West Side Set		Set Gillnet	
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%
1993	765	4.1	14,079	74.6	720	3.8	3,307	17.5
1994	464	2.3	15,575	78.0	730	3.7	3,193	16.0
1995	594	3.3	12,068	67.4	1,101	6.2	4,130	23.1
1996	389	2.7	11,564	80.8	395	2.8	1,958	13.7
1997	627	4.7	11,325	85.2	207	1.6	1,133	8.5
1998	335	4.1	5,087	62.6	155	1.9	2,547	31.4
1999	575	4.0	9,463	65.8	1,533	10.7	2,812	19.6
2000	270	3.7	3,684	50.1	1,089	14.8	2,307	31.4
2001	619	6.7	6,009	64.6	856	9.2	1,811	19.5
2002	415	3.3	9,478	74.5	926	7.3	1,895	14.9
2003	1,240	6.7	14,810	80.0	770	4.2	1,683	9.1
2004	1,104	4.1	21,684	80.5	2,208	8.2	1,926	7.2
2005	1,958	7.1	21,597	78.1	739	2.7	3,373	12.2
2006	2,782	15.4	9,956	55.2	1,030	5.7	4,261	23.6
2007	912	5.2	12,292	69.7	603	3.4	3,818	21.7
2008	653	4.9	7,573	56.8	1,124	8.4	3,983	29.9
2009	859	9.8	5,588	63.9	672	7.7	1,631	18.6
2010	538	5.4	7,059	71.3	553	5.6	1,750	17.7
2011	593	5.3	7,697	68.4	659	5.9	2,299	20.4
2012	218	8.6	705	27.9	555	22.0	1,049	41.5
2013	493	9.1	2,988	55.4	590	10.9	1,327	24.6
2014	382	8.2	2,301	49.4	507	10.9	1,470	31.5
2015	556	5.1	7,781	72.1	538	5.0	1,923	17.8
2016	606	6.0	6,759	67.4	460	4.6	2,202	22.0
2017	264	3.4	4,779	62.4	387	5.1	2,230	29.1
1966-16 Avg <sup>a</sup>	954	6.5	9,365	65.0	1,216	9.2	3,038	19.3
2007-16 Avg	581	6.8	6,074	60.2	626	8.4	2,145	24.6

Note: Harvest data prior to 2017 reflect minor adjustments to historical catch database.

<sup>a</sup> 1989 not used in average because the drift fleet did not fish due to the Exxon Valdez oil spill; this had an effect on all other fisheries.



Appendix B2.-Upper Cook Inlet commercial sockeye salmon harvest by gear type and area, 1966-2017.

Year	Central District				Northern District				Total
	Drift Gillnet		Upper Subdistrict Set		Kaigin/West Side Set		Set Gillnet		
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	
1966	1,103,261	59.6	485,330	26.2	132,443	7.2	131,080	7.1	1,852,114
1967	890,152	64.5	305,431	22.1	66,414	4.8	118,065	8.6	1,380,062
1968	561,737	50.8	317,535	28.7	85,049	7.7	140,575	12.7	1,104,896
1969	371,747	53.7	210,834	30.5	71,184	10.3	38,050	5.5	691,815
1970	460,690	62.9	142,701	19.5	62,723	8.6	66,458	9.1	732,572
1971	423,107	66.5	111,505	17.5	61,144	9.6	40,533	6.4	636,289
1972	506,281	57.5	204,599	23.3	83,176	9.5	85,755	9.7	879,811
1973	375,695	56.1	188,816	28.2	59,973	8.9	45,614	6.8	670,098
1974	265,771	53.5	136,889	27.5	52,962	10.7	41,563	8.4	497,185
1975	368,124	53.8	177,336	25.9	73,765	10.8	65,526	9.6	684,751
1976	1,055,786	63.4	476,376	28.6	62,338	3.7	69,649	4.2	1,664,149
1977	1,073,098	52.3	751,178	36.6	104,265	5.1	123,750	6.0	2,052,291
1978	1,803,479	68.8	660,797	25.2	105,767	4.0	51,378	2.0	2,621,421
1979	454,707	49.2	247,359	26.8	108,422	11.7	113,918	12.3	924,406
1980	770,247	48.9	559,812	35.6	137,882	8.8	105,647	6.7	1,573,588
1981	633,380	44.0	496,003	34.5	60,217	4.2	249,662	17.3	1,439,262
1982	2,103,429	64.5	971,423	29.8	66,952	2.1	118,060	3.6	3,259,864
1983	3,222,428	63.8	1,508,511	29.9	134,575	2.7	184,219	3.6	5,049,733
1984	1,235,337	58.6	490,273	23.3	162,139	7.7	218,965	10.4	2,106,714
1985	2,032,957	50.1	1,561,200	38.4	285,081	7.0	181,191	4.5	4,060,429
1986	2,837,857	59.2	1,658,671	34.6	153,714	3.2	141,830	3.0	4,792,072
1987	5,638,916	59.5	3,457,724	36.5	208,036	2.2	164,572	1.7	9,469,248
1988	4,139,358	60.5	2,428,385	35.5	146,377	2.1	129,713	1.9	6,843,833
1989	5	0.0	4,543,492	90.7	186,828	3.7	280,801	5.6	5,011,126
1990	2,305,742	64.0	1,117,621	31.0	84,949	2.4	96,398	2.7	3,604,710
1991	1,118,138	51.3	844,603	38.8	99,855	4.6	116,201	5.3	2,178,797
1992	6,069,495	66.6	2,838,076	31.2	131,304	1.4	69,478	0.8	9,108,353

-continued-

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Year	Drift Gillnet			Central District			Northern District			Total
	Number <sup>b</sup>	%	Upper Subdistrict Set	Number <sup>b</sup>	%	Kalgim/West Side Set	Number <sup>b</sup>	%	Set Gillnet	
1993	2,558,732	53.8	1,941,798	40.8	108,181	2.3	146,633	3.1	4,755,344	
1994	1,901,475	53.3	1,458,162	40.9	85,830	2.4	120,142	3.4	3,565,609	
1995	1,773,873	60.1	961,227	32.6	107,898	3.7	109,098	3.7	2,952,096	
1996	2,205,067	56.7	1,483,008	38.1	96,719	2.5	104,128	2.7	3,888,922	
1997	2,197,961	52.6	1,832,856	43.9	48,723	1.2	97,455	2.3	4,176,995	
1998	599,396	49.2	512,306	42.0	47,165	3.9	60,650	5.0	1,219,517	
1999	1,413,995	52.8	1,092,946	40.8	114,454	4.3	59,123	2.2	2,680,518	
2000	656,427	49.6	529,747	40.1	92,477	7.0	43,831	3.3	1,322,482	
2001	846,275	46.3	870,019	47.6	59,709	3.3	50,848	2.8	1,826,851	
2002	1,367,251	49.3	1,303,158	47.0	69,609	2.5	33,100	1.2	2,773,118	
2003	1,593,638	45.8	1,746,841	50.3	87,193	2.5	48,489	1.4	3,476,161	
2004	2,529,642	51.3	2,235,810	45.4	134,356	2.7	27,276	0.6	4,927,084	
2005	2,520,327	48.1	2,534,345	48.4	157,612	3.0	26,415	0.5	5,238,699	
2006	784,771	35.8	1,301,275	59.3	94,054	4.3	12,630	0.6	2,192,730	
2007	1,823,481	55.0	1,353,407	40.8	122,424	3.7	17,467	0.5	3,316,779	
2008	983,303	41.3	1,303,236	54.8	67,366	2.8	26,230	1.1	2,380,135	
2009	968,075	47.3	905,853	44.3	131,214	6.4	40,652	2.0	2,045,794	
2010	1,587,657	56.1	1,085,789	38.4	114,719	4.1	40,177	1.4	2,828,342	
2011	3,201,035	60.6	1,877,939	35.6	163,539	3.1	35,482	0.7	5,277,995	
2012	2,924,144	93.3	96,675	3.1	90,440	2.9	22,580	0.7	3,133,839	
2013	1,662,561	62.0	921,533	34.3	75,707	2.8	23,423	0.9	2,683,224	
2014	1,501,678	64.1	724,398	30.9	80,271	3.4	37,687	1.6	2,344,034	
2015	1,012,684	38.2	1,481,336	55.9	99,771	3.8	55,876	2.1	2,649,667	
2016	1,266,746	52.8	997,853	41.6	85,194	3.6	47,150	2.0	2,396,943	
2017	880,279	47.6	832,220	45.0	79,788	4.3	56,956	3.1	1,849,243	
1966-16 Avg <sup>a</sup>	1,634,022	55.6	1,058,010	35.2	102,707	4.9	83,888	4.3	2,878,627	
2007-16 Avg	1,693,136	57.1	1,074,802	38.0	103,065	3.7	34,672	1.3	2,905,675	

Note: Harvest data prior to 2017 reflect minor adjustments to historical catch database.

<sup>a</sup> 1989 not used in average because the drift fleet did not fish due to the Exxon Valdez oil spill; this had an effect on all other fisheries.

Appendix B3.-Upper Cook Inlet commercial coho salmon harvest by gear type and area, 1966-2017.

Year	Central District				Northern District				Total
	Drift Gillnet		Upper Subdistrict Set		Kalgai/West Side Set		Set Gillnet		
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	
1966	80,901	27.9	68,877	23.8	59,509	20.5	80,550	27.8	289,837
1967	53,071	29.9	40,738	22.9	40,066	22.5	43,854	24.7	177,729
1968	167,383	35.8	80,828	17.3	63,301	13.5	156,648	33.5	468,160
1969	33,053	32.8	18,988	18.9	28,231	28.0	20,412	20.3	100,684
1970	110,070	40.0	30,114	10.9	52,299	19.0	82,722	30.1	275,205
1971	35,491	35.4	16,589	16.5	26,188	26.1	22,094	22.0	100,362
1972	21,577	26.7	24,673	30.5	15,300	18.9	19,346	23.9	80,896
1973	31,784	30.4	23,901	22.9	24,784	23.7	23,951	22.9	104,420
1974	75,640	37.8	36,837	18.4	40,610	20.3	47,038	23.5	200,125
1975	88,579	39.0	46,209	20.3	59,537	26.2	33,051	14.5	227,376
1976	80,712	38.7	47,873	22.9	42,243	20.2	37,835	18.1	208,663
1977	110,184	57.2	23,693	12.3	38,093	19.8	20,623	10.7	192,593
1978	76,259	34.8	34,134	15.6	61,711	28.2	47,089	21.5	219,193
1979	114,496	43.2	29,284	11.0	68,306	25.8	53,078	20.0	265,164
1980	89,510	33.0	40,281	14.8	51,527	19.0	90,098	33.2	271,416
1981	226,366	46.7	36,024	7.4	88,390	18.2	133,625	27.6	484,405
1982	416,274	52.5	108,393	13.7	182,205	23.0	85,352	10.8	792,224
1983	326,965	63.3	37,694	7.3	97,796	18.9	53,867	10.4	516,322
1984	213,423	47.4	37,166	8.3	84,618	18.8	114,786	25.5	449,993
1985	357,388	53.6	70,657	10.6	147,331	22.1	91,837	13.8	667,213
1986	506,818	66.9	76,495	10.1	85,932	11.4	88,108	11.6	757,353
1987	202,506	44.8	74,981	16.6	75,201	16.6	97,062	21.9	449,750
1988	278,828	49.6	54,975	9.9	77,503	13.8	149,742	26.7	561,048
1989	856	0.2	82,333	24.1	81,004	23.9	175,738	51.8	339,931
1990	247,453	49.3	40,351	8.0	73,429	14.6	140,506	28.0	501,739
1991	176,245	41.2	30,436	7.1	87,515	20.6	132,302	31.0	426,498
1992	267,300	57.0	57,078	12.2	53,419	11.4	91,133	19.4	468,930

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Year	Central District				Northern District		Total
	Drift Gillnet		Upper Subdistrict Set		Set Gillnet		
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	
1993	121,829	39.7	43,098	14.0	35,661	11.6	306,882
1994	310,114	52.7	68,449	11.9	61,166	10.5	583,793
1995	241,473	54.0	44,751	10.0	71,606	16.0	447,130
1996	171,434	53.3	40,724	12.6	31,405	9.8	321,668
1997	78,666	51.6	19,668	12.9	16,705	11.0	152,408
1998	83,338	51.9	18,677	11.6	24,286	15.1	160,688
1999	64,814	51.5	11,923	9.3	17,725	14.1	126,105
2000	131,478	55.5	11,078	4.7	22,840	9.6	236,871
2001	39,418	34.8	4,246	3.7	23,719	20.9	113,311
2002	125,831	51.1	35,153	14.3	35,005	14.2	246,281
2003	52,432	51.5	10,171	10.0	15,138	14.9	101,756
2004	199,587	64.2	30,154	9.7	36,498	11.7	311,058
2005	144,753	64.4	19,543	8.7	29,502	13.1	224,657
2006	98,473	55.4	22,167	12.5	36,845	20.7	177,853
2007	108,703	61.3	23,610	13.3	23,495	13.2	177,339
2008	89,428	52.0	21,823	12.7	18,441	10.7	171,869
2009	82,096	53.6	11,435	7.5	22,050	14.4	153,210
2010	110,275	53.2	32,683	15.8	26,281	12.7	207,350
2011	40,858	42.9	15,560	16.3	16,760	17.6	95,291
2012	74,678	69.9	6,537	6.1	12,354	11.6	106,775
2013	184,771	70.8	2,266	0.9	31,513	12.1	260,963
2014	76,932	56.0	5,908	4.3	19,379	14.1	137,419
2015	130,720	60.5	17,948	8.3	20,748	9.6	216,032
2016	90,242	61.2	11,606	7.9	15,171	10.3	147,495
2017	191,490	63.1	29,916	9.9	29,535	9.7	303,642
1966-16 Avg <sup>a</sup>	144,812	48.6	34,329	12.6	47,787	16.8	288,830
2007-16 Avg	98,870	58.1	14,938	9.3	20,619	12.6	167,374

Note: Harvest data prior to 2017 reflect minor adjustments to historical catch database.

<sup>a</sup> 1989 not used in average because the drift fleet did not fish due to the Exxon Valdez oil spill; this had an effect on all other fisheries.

Appendix B4.-Upper Cook Inlet commercial pink salmon harvest by gear type and area, 1966-2017.

Year	Central District				Northern District				Total
	Drift Gillnet		Upper Subdistrict Set		Kalgim/West Side Set		Set Gillnet		
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	
1966	593,654	29.6	969,624	48.3	70,507	3.5	371,960	18.5	2,005,745
1967	7,475	23.2	13,038	40.5	3,256	10.1	8,460	26.2	32,229
1968	880,512	38.7	785,887	34.5	75,755	3.3	534,839	23.5	2,276,993
1969	8,233	25.3	10,968	33.7	5,711	17.6	7,587	23.3	32,499
1970	334,737	41.1	281,067	34.5	24,763	3.0	174,193	21.4	814,760
1971	6,433	18.1	18,097	50.8	2,637	7.4	8,423	23.7	35,590
1972	115,117	18.3	403,706	64.2	18,913	3.0	90,830	14.5	628,566
1973	91,901	28.2	80,596	24.7	16,437	5.0	137,250	42.1	326,184
1974	140,432	29.0	291,408	60.2	9,014	1.9	42,876	8.9	483,730
1975	113,868	33.9	112,423	33.4	19,086	5.7	90,953	27.0	336,330
1976	599,594	47.7	479,024	38.1	30,030	2.4	148,080	11.8	1,256,728
1977	286,308	51.7	125,817	22.7	25,212	4.6	116,518	21.0	553,855
1978	934,442	55.3	372,601	22.1	54,785	3.2	326,614	19.3	1,688,442
1979	19,554	26.8	19,983	27.4	7,061	9.7	26,382	36.1	72,980
1980	964,526	54.0	299,444	16.8	47,963	2.7	474,488	26.6	1,786,421
1981	53,888	42.4	15,654	12.3	4,276	3.4	53,325	41.9	127,143
1982	270,380	34.2	432,715	54.7	14,242	1.8	73,307	9.3	790,644
1983	26,629	37.9	18,309	26.0	3,785	5.4	21,604	30.7	70,327
1984	273,565	44.3	220,895	35.8	16,708	2.7	106,284	17.2	617,452
1985	34,228	39.0	17,715	20.2	5,653	6.4	30,232	34.4	87,828
1986	615,522	47.3	530,974	40.8	15,460	1.2	139,002	10.7	1,300,958
1987	38,714	35.4	47,243	43.2	5,229	4.8	18,203	16.6	109,389
1988	227,885	48.4	176,043	37.4	12,942	2.7	54,210	11.5	471,080
1989	2	0.0	37,982	56.3	5,580	8.3	23,878	35.4	67,442
1990	323,955	53.7	225,429	37.3	10,302	1.7	43,944	7.3	603,630
1991	5,791	39.5	2,670	18.2	1,049	7.2	5,153	35.1	14,663
1992	423,738	60.9	244,068	35.1	4,250	0.6	23,805	3.4	695,861

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Year	Drift Gillnet			Central District			Northern District			Total
	Number <sup>b</sup>	%	Upper Subdistrict Set	Number <sup>b</sup>	%	Kalign/West Side Set	Number <sup>b</sup>	%	Set Gillnet	
1993	46,463	46.0	41,690	41.3	2,313	2.3	10,468	10.4	100,934	
1994	256,248	49.0	234,827	44.9	3,178	0.6	29,181	5.6	523,434	
1995	64,632	48.4	53,420	40.0	3,813	2.9	11,713	8.8	133,578	
1996	122,728	50.5	95,717	39.4	3,792	1.6	20,674	8.5	242,911	
1997	29,920	42.2	32,055	45.2	4,701	6.6	4,269	6.0	70,945	
1998	200,382	36.3	332,484	60.3	7,231	1.3	11,640	2.1	551,737	
1999	3,552	22.0	9,357	57.8	2,674	16.5	593	3.7	16,176	
2000	90,508	61.8	23,746	16.2	11,983	8.2	20,245	13.8	146,482	
2001	31,219	43.0	32,998	45.5	3,988	5.5	4,355	6.0	72,560	
2002	224,229	50.2	214,771	48.1	1,736	0.4	6,224	1.4	446,960	
2003	30,376	62.3	16,474	33.8	375	0.8	1,564	3.2	48,789	
2004	235,524	65.8	107,838	30.1	12,560	3.5	2,017	0.6	357,939	
2005	31,230	64.5	13,619	28.1	2,747	5.7	823	1.7	48,419	
2006	212,808	52.7	184,990	45.8	4,684	1.2	1,629	0.4	404,111	
2007	67,398	45.8	69,918	47.6	6,177	4.2	3,527	2.4	147,020	
2008	103,867	61.3	59,620	35.2	2,357	1.4	3,524	2.1	169,368	
2009	139,676	65.2	55,845	26.1	12,246	5.7	6,554	3.1	214,321	
2010	164,005	56.0	121,817	41.6	3,106	1.1	3,778	1.3	292,706	
2011	15,333	44.9	15,527	45.5	2,424	7.1	839	2.5	34,123	
2012	303,216	64.6	159,003	33.9	3,376	0.7	4,003	0.9	469,598	
2013	30,605	63.4	14,671	30.4	1,014	2.1	1,985	4.1	48,275	
2014	417,344	64.9	213,616	33.2	4,331	0.7	7,695	1.2	642,986	
2015	21,653	45.1	22,983	47.9	1,175	2.4	2,193	4.6	48,004	
2016	268,908	70.3	103,503	27.1	2,089	0.5	7,968	2.1	382,468	
2017	89,963	53.6	59,995	35.7	7,775	4.6	10,109	6.0	167,842	
1966-16 Avg <sup>a</sup>	210058	45.6	168518	37.2	12182	4.1	65920	13.2	456677	
2007-16 Avg	153,201	58.2	83,650	36.8	3,830	2.6	4,207	2.4	244,887	

Note: Harvest data prior to 2017 reflect minor adjustments to historical catch database.

<sup>a</sup> 1989 not used in average because the drift fleet did not fish due to the Exxon Valdez oil spill; this had an effect on all other fisheries.

Appendix B5.—Upper Cook Inlet commercial chum salmon harvest by gear type and area, 1966–2017.

Year	Central District				Northern District				Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet		
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	
1966	424,972	79.8	7,461	1.4	64,725	12.1	35,598	6.7	532,756
1967	233,041	78.5	399	0.1	25,013	8.4	38,384	12.9	296,837
1968	1,002,900	90.5	1,563	0.1	44,986	4.1	58,454	5.3	1,107,903
1969	238,497	89.1	399	0.1	16,954	6.3	11,836	4.4	267,686
1970	678,448	90.4	1,228	0.2	48,591	6.5	22,507	3.0	750,774
1971	274,567	84.8	128	0.0	32,647	10.1	16,603	5.1	323,945
1972	564,726	90.2	1,727	0.3	40,179	6.4	19,782	3.2	626,414
1973	605,738	90.7	1,965	0.3	29,019	4.3	30,851	4.6	667,573
1974	344,496	86.8	506	0.1	15,346	3.9	36,492	9.2	396,840
1975	886,474	93.2	980	0.1	33,347	3.5	30,787	3.2	951,588
1976	405,769	86.5	1,484	0.3	47,882	10.2	14,045	3.0	469,180
1977	1,153,454	93.5	1,413	0.1	54,708	4.4	23,861	1.9	1,233,436
1978	489,119	85.5	4,563	0.8	40,946	7.2	37,151	6.5	571,779
1979	609,239	93.8	867	0.1	30,342	4.7	9,310	1.4	649,758
1980	339,970	87.7	2,147	0.6	28,970	7.5	16,728	4.3	387,815
1981	756,922	91.0	2,386	0.3	26,461	3.2	46,208	5.6	831,977
1982	1,348,510	94.1	4,777	0.3	36,647	2.6	43,006	3.0	1,432,940
1983	1,044,636	93.7	2,822	0.3	38,079	3.4	29,321	2.6	1,114,858
1984	568,097	83.5	3,695	0.5	34,207	5.0	74,727	11.0	680,726
1985	700,848	90.7	4,133	0.5	31,746	4.1	36,122	4.7	772,849
1986	1,012,669	89.2	7,030	0.6	39,078	3.4	76,040	6.7	1,134,817
1987	211,745	60.6	16,733	4.8	53,771	15.4	66,901	19.2	349,150
1988	582,699	82.0	11,763	1.7	40,425	5.7	75,728	10.7	710,615
1989	72	0.1	12,326	10.1	27,705	22.7	81,948	67.1	122,051
1990	289,521	82.4	4,611	1.3	21,355	6.1	35,710	10.2	351,197
1991	215,476	76.9	2,387	0.9	22,974	8.2	39,393	14.1	280,230
1992	232,955	84.9	2,867	1.0	13,180	4.8	25,301	9.2	274,303

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Year	Central District				Northern District				Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet		
	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	Number <sup>b</sup>	%	
1993	88,826	72.4	2,977	2.4	5,566	4.5	25,401	20.7	122,770
1994	249,748	82.4	2,927	1.0	10,443	3.4	40,059	13.2	303,177
1995	468,224	88.4	3,711	0.7	13,826	2.6	43,667	8.2	529,428
1996	140,987	90.1	1,448	0.9	2,314	1.5	11,771	7.5	156,520
1997	92,163	89.4	1,222	1.2	1,770	1.7	7,881	7.6	103,036
1998	88,080	92.0	688	0.7	2,953	3.1	3,983	4.2	95,704
1999	166,612	95.5	373	0.2	3,567	2.0	4,002	2.3	174,554
2000	118,074	92.9	325	0.3	4,386	3.5	4,284	3.4	127,069
2001	75,599	89.5	248	0.3	6,445	7.6	2,202	2.6	84,494
2002	224,587	94.4	1,790	0.8	6,671	2.8	4,901	2.1	237,949
2003	106,468	88.2	1,933	1.6	7,883	6.5	4,483	3.7	120,767
2004	137,041	93.8	2,019	1.4	4,957	3.4	2,148	1.5	146,165
2005	65,671	94.2	710	1.0	2,632	3.8	727	1.0	69,740
2006	59,965	93.6	347	0.5	3,241	5.1	480	0.7	64,033
2007	74,836	96.9	521	0.7	1,275	1.7	608	0.8	77,240
2008	46,010	91.4	433	0.9	2,243	4.5	1,629	3.2	50,315
2009	77,073	93.1	319	0.4	2,339	2.8	3,080	3.7	82,811
2010	216,977	94.8	3,035	1.3	4,947	2.2	3,904	1.7	228,863
2011	111,082	85.8	1,612	1.2	9,995	7.7	6,718	5.2	129,407
2012	264,513	98.1	49	0.0	2,872	1.1	2,299	0.9	269,733
2013	132,172	94.8	102	0.1	4,854	3.5	2,237	1.6	139,365
2014	108,345	93.3	548	0.5	4,828	4.2	2,406	2.1	116,127
2015	252,331	91.4	2,248	0.8	15,312	5.5	6,069	2.2	275,960
2016	113,258	91.6	1,203	1.0	6,050	4.9	3,168	2.6	123,679
2017	232,501	95.4	601	0.2	5,684	2.3	4,814	2.0	243,600
1966-16 Avg <sup>a</sup>	373,883	88.8	2,416	0.7	20,859	5.0	22,779	5.5	419,937
2007-16 Avg	139,660	93.1	1,007	0.7	5,472	3.8	3,212	2.4	149,350

Note: Harvest data prior to 2017 reflect minor adjustments to historical catch database.

<sup>a</sup> 1989 not used in average because the drift fleet did not fish due to the Exxon Valdez oil spill; this had an effect on all other fisheries.



Appendix B6.—Upper Cook Inlet commercial salmon harvest by species, 1966–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1966	8,544	1,852,114	289,837	2,005,745	532,756	4,688,996
1967	7,859	1,380,062	177,729	32,229	296,837	1,894,716
1968	4,536	1,104,904	469,850	2,278,197	1,119,114	4,976,601
1969	12,397	692,175	100,777	33,383	269,847	1,108,579
1970	8,336	732,605	275,399	814,895	776,229	2,607,464
1971	19,765	636,303	100,636	35,624	327,029	1,119,357
1972	16,086	879,824	80,933	628,574	630,103	2,235,520
1973	5,194	670,098	104,420	326,184	667,573	1,773,469
1974	6,596	497,185	200,125	483,730	396,840	1,584,476
1975	4,787	684,752	227,379	336,333	951,796	2,205,047
1976	10,865	1,664,150	208,695	1,256,728	469,802	3,610,240
1977	14,790	2,052,291	192,599	553,855	1,233,722	4,047,257
1978	17,299	2,621,421	219,193	1,688,442	571,779	5,118,134
1979	13,738	924,415	265,166	72,982	650,357	1,926,658
1980	13,798	1,573,597	271,418	1,786,430	389,675	4,034,918
1981	12,240	1,439,277	484,411	127,164	833,542	2,896,634
1982	20,870	3,259,864	793,937	790,648	1,433,866	6,299,185
1983	20,634	5,049,733	516,322	70,327	1,114,858	6,771,874
1984	10,062	2,106,714	449,993	617,452	680,726	3,864,947
1985	24,088	4,060,429	667,213	87,828	772,849	5,612,407
1986	39,256	4,792,072	757,353	1,300,958	1,134,817	8,024,456
1987	39,440	9,469,248	449,750	109,389	349,150	10,416,977
1988	29,080	6,843,833	561,048	471,080	710,615	8,615,656
1989	26,738	5,011,159	339,931	67,443	122,051	5,567,322
1990	16,105	3,604,710	501,739	603,630	351,197	5,077,381

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Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1991	13,542	2,178,797	426,498	14,663	280,230	2,913,730
1992	17,171	9,108,353	468,930	695,861	274,303	10,564,618
1993	18,871	4,755,344	306,882	100,934	122,770	5,304,801
1994	19,962	3,565,609	583,793	523,434	303,177	4,995,975
1995	17,893	2,952,096	447,130	133,578	529,428	4,080,125
1996	14,306	3,888,922	321,668	242,911	156,520	4,624,327
1997	13,292	4,176,995	152,408	70,945	103,036	4,516,676
1998	8,124	1,219,517	160,688	551,737	95,704	2,035,770
1999	14,383	2,680,518	126,105	16,176	174,554	3,011,736
2000	7,350	1,322,482	236,871	146,482	127,069	1,840,254
2001	9,295	1,826,851	113,311	72,560	84,494	2,106,511
2002	12,714	2,773,118	246,281	446,960	237,949	3,717,022
2003	18,503	3,476,161	101,756	48,789	120,767	3,765,976
2004	26,922	4,927,084	311,058	357,939	146,165	5,769,168
2005	27,667	5,238,699	224,657	48,419	69,740	5,609,182
2006	18,029	2,192,730	177,853	404,111	64,033	2,856,756
2007	17,625	3,316,779	177,339	147,020	77,240	3,736,003
2008	13,333	2,380,135	171,869	169,368	50,315	2,785,020
2009	8,750	2,045,794	153,210	214,321	82,808	2,504,883
2010	9,900	2,828,342	207,350	292,706	228,863	3,567,161
2011	11,248	5,277,995	95,291	34,123	129,407	5,548,064
2012	2,527	3,133,839	106,775	469,598	269,733	3,982,472
2013	5,398	2,683,224	260,963	48,275	139,365	3,137,225
2014	4,660	2,344,034	137,419	642,986	116,127	3,245,226
2015	10,798	2,649,667	216,032	48,004	275,960	3,200,461
2016	10,027	2,396,943	147,495	382,468	123,679	3,060,612
2017	7,660	1,849,234	303,642	167,842	243,600	2,571,987
1966-2016 Avg <sup>a</sup>	14,573	2,878,636	288,911	456,724	420,970	4,059,814
2007-2016 Avg	9,427	2,905,675	167,374	244,887	149,350	3,476,713

*Note:* Harvest statistics prior to 2017 reflect minor adjustments to catch database.

Appendix B7.-Approximate exvessel value of Upper Cook Inlet commercial salmon harvest by species, 1960-2017.

Year	Chinook	%	Sockeye	%	Coho	%	Pink	%	Chum	%	Total
1960	\$ 140,000	5.0%	\$ 1,334,000	47.9%	\$ 307,000	11.0%	\$ 663,000	23.8%	\$ 343,000	12.3%	\$ 2,787,000
1961	\$ 100,000	4.7%	\$ 1,687,000	79.4%	\$ 118,000	5.6%	\$ 16,000	0.8%	\$ 204,000	9.6%	\$ 2,125,000
1962	\$ 100,000	2.5%	\$ 1,683,000	42.3%	\$ 342,000	8.6%	\$ 1,274,000	32.0%	\$ 582,000	14.6%	\$ 3,981,000
1963	\$ 89,000	4.6%	\$ 1,388,000	72.3%	\$ 193,000	10.1%	\$ 13,000	0.7%	\$ 236,000	12.3%	\$ 1,919,000
1964	\$ 20,000	0.5%	\$ 1,430,000	38.9%	\$ 451,000	12.3%	\$ 1,131,000	30.8%	\$ 646,000	17.6%	\$ 3,678,000
1965	\$ 50,000	2.0%	\$ 2,099,000	82.1%	\$ 109,000	4.3%	\$ 70,000	2.7%	\$ 230,000	9.0%	\$ 2,558,000
1966	\$ 50,000	1.2%	\$ 2,727,000	64.4%	\$ 295,000	7.0%	\$ 823,000	19.4%	\$ 338,000	8.0%	\$ 4,233,000
1967	\$ 49,000	1.9%	\$ 2,135,000	82.6%	\$ 187,000	7.2%	\$ 13,000	0.5%	\$ 202,000	7.8%	\$ 2,586,000
1968	\$ 30,000	0.7%	\$ 1,758,000	40.4%	\$ 515,000	11.8%	\$ 1,209,000	27.8%	\$ 843,000	19.4%	\$ 4,355,000
1969	\$ 70,000	4.0%	\$ 1,296,697	73.9%	\$ 134,003	7.6%	\$ 18,291	1.0%	\$ 236,404	13.5%	\$ 1,755,394
1970	\$ 89,382	3.0%	\$ 1,190,303	39.9%	\$ 468,179	15.7%	\$ 456,354	15.3%	\$ 780,622	26.2%	\$ 2,984,840
1971	\$ 189,504	9.2%	\$ 1,250,771	61.0%	\$ 137,815	6.7%	\$ 18,402	0.9%	\$ 454,483	22.2%	\$ 2,050,974
1972	\$ 224,396	6.3%	\$ 1,863,177	52.6%	\$ 137,315	3.9%	\$ 478,246	13.5%	\$ 840,057	23.7%	\$ 3,543,192
1973	\$ 121,156	2.0%	\$ 3,225,847	52.3%	\$ 318,950	5.2%	\$ 362,658	5.9%	\$ 2,135,025	34.6%	\$ 6,163,635
1974	\$ 209,712	3.2%	\$ 3,072,221	46.8%	\$ 843,048	12.8%	\$ 919,916	14.0%	\$ 1,517,637	23.1%	\$ 6,562,535
1975	\$ 63,990	1.0%	\$ 2,628,036	39.2%	\$ 838,859	12.5%	\$ 419,173	6.3%	\$ 2,752,555	41.1%	\$ 6,702,612
1976	\$ 274,172	2.0%	\$ 8,668,095	63.4%	\$ 819,006	6.0%	\$ 1,874,915	13.7%	\$ 2,041,225	14.9%	\$ 13,677,413
1977	\$ 523,776	2.4%	\$ 13,318,720	61.8%	\$ 932,540	4.3%	\$ 767,273	3.6%	\$ 5,995,611	27.8%	\$ 21,537,920
1978	\$ 661,375	2.0%	\$ 26,167,741	80.3%	\$ 1,380,312	4.2%	\$ 2,154,176	6.6%	\$ 2,217,510	6.8%	\$ 32,581,114
1979	\$ 616,360	4.2%	\$ 8,093,280	55.3%	\$ 1,640,277	11.2%	\$ 82,339	0.6%	\$ 4,199,765	28.7%	\$ 14,632,021
1980	\$ 414,771	3.2%	\$ 7,937,699	61.7%	\$ 891,098	6.9%	\$ 2,114,283	16.4%	\$ 1,513,960	11.8%	\$ 12,871,810
1981	\$ 424,390	2.3%	\$ 11,080,411	60.1%	\$ 2,623,598	14.2%	\$ 170,038	0.9%	\$ 4,150,158	22.5%	\$ 18,448,596
1982	\$ 763,267	2.4%	\$ 25,154,115	80.0%	\$ 4,080,570	13.0%	\$ 553,635	1.8%	\$ 886,129	2.8%	\$ 31,437,716
1983	\$ 590,730	2.0%	\$ 24,016,294	81.8%	\$ 1,601,976	5.5%	\$ 41,338	0.1%	\$ 3,109,814	10.6%	\$ 29,360,152
1984	\$ 310,899	1.8%	\$ 12,450,532	71.8%	\$ 2,039,681	11.8%	\$ 522,795	3.0%	\$ 2,011,253	11.6%	\$ 17,335,160
1985	\$ 799,318	2.3%	\$ 27,497,929	80.0%	\$ 3,359,824	9.8%	\$ 57,412	0.2%	\$ 2,644,995	7.7%	\$ 34,359,478
1986	\$ 915,189	2.0%	\$ 38,683,950	83.3%	\$ 2,909,043	6.3%	\$ 724,367	1.6%	\$ 3,197,973	6.9%	\$ 46,430,522
1987	\$ 1,609,777	1.6%	\$ 95,915,522	94.9%	\$ 2,373,254	2.3%	\$ 84,439	0.1%	\$ 1,116,165	1.1%	\$ 101,099,156

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Year	Chinook	%	Socketeye	%	Coho	%	Pink	%	Chum	%	Total
1988	\$ 1,120,885	0.9%	\$ 111,537,736	91.3%	\$ 4,738,463	3.9%	\$ 650,931	0.5%	\$ 4,129,002	3.4%	\$ 122,177,017
1989	\$ 803,494	1.4%	\$ 56,194,753	95.0%	\$ 1,674,393	2.8%	\$ 86,012	0.1%	\$ 415,535	0.7%	\$ 59,174,188
1990	\$ 436,822	1.1%	\$ 35,804,485	88.0%	\$ 2,422,214	6.0%	\$ 512,591	1.3%	\$ 1,495,827	3.7%	\$ 40,671,938
1991	\$ 348,522	2.3%	\$ 12,249,200	80.4%	\$ 1,996,049	13.1%	\$ 5,478	0.0%	\$ 643,400	4.2%	\$ 15,242,649
1992	\$ 634,466	0.6%	\$ 96,026,864	96.0%	\$ 2,261,862	2.3%	\$ 404,772	0.4%	\$ 740,294	0.7%	\$ 100,068,258
1993	\$ 617,092	2.1%	\$ 27,969,409	93.1%	\$ 1,081,175	3.6%	\$ 36,935	0.1%	\$ 322,205	1.1%	\$ 30,026,815
1994	\$ 642,291	1.9%	\$ 29,441,442	85.5%	\$ 3,297,865	9.6%	\$ 240,545	0.7%	\$ 831,121	2.4%	\$ 34,453,264
1995	\$ 474,475	2.2%	\$ 19,168,077	87.1%	\$ 1,295,353	5.9%	\$ 53,114	0.2%	\$ 1,023,926	4.7%	\$ 22,014,944
1996	\$ 402,980	1.4%	\$ 28,238,578	95.0%	\$ 800,423	2.7%	\$ 44,386	0.1%	\$ 225,751	0.8%	\$ 29,712,117
1997	\$ 365,316	1.1%	\$ 31,439,536	97.1%	\$ 434,327	1.3%	\$ 12,004	0.0%	\$ 143,244	0.4%	\$ 32,394,427
1998	\$ 181,318	2.1%	\$ 7,686,993	88.5%	\$ 497,050	5.7%	\$ 187,759	2.2%	\$ 132,025	1.5%	\$ 8,685,145
1999	\$ 343,545	1.6%	\$ 20,029,356	95.5%	\$ 331,342	1.6%	\$ 6,011	0.0%	\$ 265,460	1.3%	\$ 20,975,713
2000	\$ 183,400	2.3%	\$ 7,104,456	87.2%	\$ 626,032	7.7%	\$ 47,075	0.6%	\$ 186,344	2.3%	\$ 8,147,307
2001	\$ 169,593	2.2%	\$ 7,134,560	92.3%	\$ 297,387	3.8%	\$ 20,313	0.3%	\$ 111,028	1.4%	\$ 7,732,881
2002	\$ 326,077	2.8%	\$ 10,679,780	91.7%	\$ 329,198	2.8%	\$ 84,859	0.7%	\$ 224,011	1.9%	\$ 11,643,925
2003	\$ 358,886	2.8%	\$ 12,275,919	95.3%	\$ 132,059	1.0%	\$ 8,663	0.1%	\$ 99,783	0.8%	\$ 12,875,310
2004	\$ 673,088	3.3%	\$ 19,416,259	93.8%	\$ 416,071	2.0%	\$ 65,884	0.3%	\$ 129,791	0.6%	\$ 20,701,093
2005	\$ 688,993	2.2%	\$ 30,165,827	95.2%	\$ 708,620	2.2%	\$ 12,796	0.0%	\$ 101,106	0.3%	\$ 31,677,341
2006	\$ 617,278	4.4%	\$ 12,311,850	88.5%	\$ 679,463	4.9%	\$ 174,522	1.3%	\$ 121,265	0.9%	\$ 13,904,377
2007	\$ 629,643	2.7%	\$ 21,916,852	93.6%	\$ 682,747	2.9%	\$ 53,029	0.2%	\$ 141,097	0.6%	\$ 23,423,367
2008	\$ 544,042	3.3%	\$ 15,530,144	93.0%	\$ 482,298	2.9%	\$ 64,466	0.4%	\$ 75,766	0.5%	\$ 16,696,717
2009	\$ 266,548	1.8%	\$ 13,720,051	94.1%	\$ 399,704	2.7%	\$ 71,582	0.5%	\$ 115,965	0.8%	\$ 14,573,849
2010	\$ 359,184	1.1%	\$ 30,556,535	92.1%	\$ 1,090,191	3.3%	\$ 311,199	0.9%	\$ 851,004	2.6%	\$ 33,168,113
2011	\$ 634,836	1.2%	\$ 51,363,720	96.7%	\$ 406,726	0.8%	\$ 27,548	0.1%	\$ 688,878	1.3%	\$ 53,121,708
2012	\$ 121,626	0.3%	\$ 32,008,304	91.6%	\$ 480,119	1.4%	\$ 622,809	1.8%	\$ 1,723,098	4.9%	\$ 34,955,955
2013	\$ 210,638	0.5%	\$ 37,787,069	93.9%	\$ 1,362,395	3.4%	\$ 53,754	0.1%	\$ 828,113	2.1%	\$ 40,241,970
2014	\$ 206,119	0.6%	\$ 32,819,090	93.6%	\$ 778,672	2.2%	\$ 588,409	1.7%	\$ 687,214	2.0%	\$ 35,079,504
2015	\$ 359,903	1.5%	\$ 22,285,338	92.2%	\$ 753,078	3.1%	\$ 39,197	0.2%	\$ 726,696	3.0%	\$ 24,164,211
2016	\$ 546,931	2.4%	\$ 20,624,849	92.1%	\$ 552,273	2.5%	\$ 271,150	1.2%	\$ 404,459	1.8%	\$ 22,399,662
2017	\$ 634,666	2.7%	\$ 19,711,470	82.7%	\$ 2,168,037	9.1%	\$ 89,448	0.4%	\$ 1,234,825	5.2%	\$ 23,838,446

Appendix B8.—Commercial herring harvest by fishery, Upper Cook Inlet, 1973–2017.

Year	Harvest (short tons)				Total
	Upper Subdistrict	Chinitna Bay	Tuxedni Bay	Kalgin Isl	
1973	13.8	–	–	–	13.8
1974	36.7	–	–	–	36.7
1975	6.2	–	–	–	6.2
1976	5.8	–	–	–	5.8
1977	17.3	–	–	–	17.3
1978	8.3	55.3	–	–	63.6
1979	67.3	96.2	24.8	–	188.3
1980	37.4	20.0	86.5	–	143.9
1981	86.2	50.5	84.9	–	221.6
1982	60.2	91.8	50.2	–	202.2
1983	165.3	49.2	238.2	–	452.7
1984	117.5	90.6	159.0	–	367.1
1985	136.3	46.1	215.9	–	398.4
1986	142.6	111.1	191.9	–	445.6
1987	126.5	65.1	152.5	–	344.1
1988	50.7	23.4	14.1	–	88.1
1989	55.2	122.3	34.3	–	211.8
1990	55.4	55.9	16.1	–	127.5
1991	13.4	15.7	1.6	–	30.7
1992	24.7	10.4	–	–	35.2
1993	–	–	–	–	–
1994	–	–	–	–	–
1995	–	–	–	–	–
1996	–	–	–	–	–
1997	–	–	–	–	–
1998	19.5	–	–	–	19.4
1999	10.4	–	–	–	10.4
2000	14.7	–	–	–	16.3
2001	9.9	–	–	–	10.4
2002	16.2	1.9	0.0	–	18.1
2003	3.7	0.0	0.0	–	3.7
2004	6.7	0.1	0.0	–	6.8
2005	17.1	0.2	0.0	0.0	17.3
2006	14.4	0.0	0.0	0.0	14.4
2007	12.6	0.0	0.0	0.0	12.6
2008	13.5	0.0	0.0	0.0	13.5
2009	9.2	0.0	0.0	0.0	9.2
2010	16.4	0.2	0.0	0.0	16.6
2011	13.7	2.5	0.0	0.0	16.2
2012	16.7	7.0	0.0	0.0	23.8
2013	29.6	6.0	0.0	0.0	35.6
2014	29.0	0.0	0.0	0.0	29.0
2015	24.6	1.6	0.0	0.0	26.2
2016	22.9	0.0	0.0	0.0	22.9
2017	28.2	0.1	0.0	0.0	28.3

Note: Dashes represent years when fisheries were closed.

Appendix B9.—Commercial harvest of razor clams in Upper Cook Inlet, 1919–2017.

Year	Pounds	Year	Pounds
1919	76,963	1969	0
1920	11,952	1970	0
1921	72,000	1971	14,755
1922	510,432	1972	31,360
1923	470,280	1973	34,415
1924	156,768	1974	0
1925	0	1975	10,020
1926	0	1976	0
1927	25,248	1977	1,762
1928	0	1978	45,931
1929	0	1979	144,358
1930	0	1980	140,420
1931	No Record	1981	441,949
1932	93,840	1982	460,639
1933	No Record	1983	269,618
1934	No Record	1984	261,742
1935	No Record	1985	319,034
1936	No Record	1986	258,632
1937	8,328	1987	312,349
1938	No Record	1988	399,376
1939	No Record	1989	222,747
1940	No Record	1990	323,602
1941	0	1991	201,320
1942	0	1992	296,727
1943	0	1993	310,481
1944	0	1994	355,165
1945	15,000	1995	248,358
1946	11,424	1996	355,448
1947	11,976	1997	366,532
1948	2,160	1998	371,877
1949	9,672	1999	352,910
1950	304,073	2000	369,397
1951	112,320	2001	348,917
1952	0	2002	338,938
1953	0	2003	411,403
1954	0	2004	419,697
1955	0	2005	371,395
1956	0	2006	368,953
1957	0	2007	283,085
1958	0	2008	390,999
1959	0	2009	361,388
1960	372,872	2010	379,547
1961	277,830	2011	189,172
1962	195,650	2012	307,409
1963	0	2013	380,912
1964	0	2014	348,294
1965	0	2015	318,538
1966	0	2016	284,800
1967	0	2017	177,147
1968	0		

Appendix B10.—Enumeration goals and counts of sockeye salmon in selected streams of Upper Cook Inlet, 1978–2017.

Year	Kenai River		Kasilof River		Fish Creek	
	Enumeration goal <sup>a</sup>	Enumeration estimate <sup>a, b</sup>	Enumeration goal <sup>a</sup>	Enumeration estimate <sup>a, b</sup>	Enumeration goal	Enumeration Estimate <sup>c</sup>
1978	350,000–500,000	398,900	75,000–150,000	116,600	–	3,555
1979	350,000–500,000	285,020	75,000–150,000	152,179	–	68,739
1980	350,000–500,000	464,038	75,000–150,000	184,260	–	62,828
1981	350,000–500,000	407,639	75,000–150,000	256,625	–	50,479
1982	350,000–500,000	619,831	75,000–150,000	180,239	50,000	28,164
1983	350,000–500,000	630,340	75,000–150,000	210,271	50,000	118,797
1984	350,000–500,000	344,571	75,000–150,000	231,685	50,000	192,352
1985	350,000–500,000	502,820	75,000–150,000	505,049	50,000	68,577
1986	350,000–500,000	501,157	75,000–150,000	275,963	50,000	29,800
1987	400,000–700,000	1,596,871	150,000–250,000	249,250	50,000	91,215
1988	400,000–700,000	1,021,469	150,000–250,000	204,000 <sup>d</sup>	50,000	71,603
1989	400,000–700,000	1,599,959	150,000–250,000	158,206	50,000	67,224
1990	400,000–700,000	659,520	150,000–250,000	144,289	50,000	50,000
1991	400,000–700,000	647,597	150,000–250,000	238,269	50,000	50,500
1992	400,000–700,000	994,798	150,000–250,000	184,178	50,000	71,385
1993	400,000–700,000	813,617	150,000–250,000	149,939	50,000	117,619
1994	400,000–700,000	1,003,446	150,000–250,000	205,117	50,000	95,107
1995	450,000–700,000	630,447	150,000–250,000	204,935	50,000	115,000
1996	550,000–800,000	797,847	150,000–250,000	249,944	50,000	63,160
1997	550,000–825,000	1,064,818	150,000–250,000	266,025	50,000	54,656
1998	550,000–850,000	767,558	150,000–250,000	273,213	50,000	22,853
1999	750,000–950,000	803,379	150,000–250,000	312,587	50,000	26,667
2000	600,000–850,000	624,578	150,000–250,000	256,053	50,000	19,533
2001	600,000–850,000	650,036	150,000–250,000	307,570	50,000	43,469
2002	750,000–950,000	957,924	150,000–250,000	226,682	20,000–70,000	90,483
2003	750,000–950,000	1,181,309	150,000–250,000	359,633	20,000–70,000	92,298
2004	850,000–1,100,000	1,385,981	150,000–250,000	577,581	20,000–70,000	22,157
2005	850,000–1,100,000	1,376,452	150,000–250,000	348,012	20,000–70,000	14,215
2006	750,000–950,000	1,499,692	150,000–250,000	368,092	20,000–70,000	32,566
2007	750,000–950,000	867,572	150,000–250,000	336,866	20,000–70,000	27,948
2008	650,000–850,000	614,946	150,000–250,000	301,469	20,000–70,000	19,339
2009	650,000–850,000	745,170	150,000–250,000	297,125	20,000–70,000	83,477
2010	750,000–950,000	970,662	150,000–250,000	267,013	20,000–70,000	126,829
2011	1,100,000–1,350,000	1,599,217	160,000–390,000	245,721	20,000–70,000	66,678
2012	1,100,000–1,350,000	1,581,555	160,000–390,000	374,523	20,000–70,000	18,813
2013	1,000,000–1,200,000	1,359,893	160,000–390,000	489,654	20,000–70,000	18,912
2014	1,000,000–1,200,000	1,520,340	160,000–340,000	439,977	20,000–70,000	43,915
2015	1,000,000–1,200,000	1,704,767	160,000–340,000	470,677	20,000–70,000	102,296
2016	1,100,000–1,350,000	1,383,692	160,000–340,000	239,981	20,000–70,000	46,202
2017	1,000,000–1,300,000	1,308,498	160,000–340,000	358,724	15,000–45,000	61,469

-continued-

Appendix B10.—Page 2 of 2.

Year	Yentna River		Crescent River		Packers Creek	
	Enumeration goal <sup>a</sup>	Enumeration estimate <sup>c</sup>	Enumeration goal	Enumeration estimate <sup>e, f</sup>	Enumeration goal	Enumeration estimate <sup>f, g</sup>
1980	100,000	–	50,000	90,863	–	16,477
1981	100,000	139,401	50,000	41,213	–	13,024
1982	100,000	113,847	50,000	58,957	–	15,687
1983	100,000	104,414	50,000	92,122	–	18,403
1984	100,000	149,375	50,000	118,345	–	30,684
1985	100,000	107,124	50,000	128,628	–	36,850
1986	100,000–150,000	92,076	50,000	20,385 <sup>e</sup>	–	29,604
1987	100,000–150,000	66,054	50,000–100,000	120,219	15,000–25,000	35,401
1988	100,000–150,000	52,330	50,000–100,000	57,716	15,000–25,000	18,607
1989	100,000–150,000	96,269	50,000–100,000	71,064	15,000–25,000	22,304
1990	100,000–150,000	140,290	50,000–100,000	52,238	15,000–25,000	31,868
1991	100,000–150,000	109,632	50,000–100,000	44,578	15,000–25,000	41,275
1992	100,000–150,000	66,054	50,000–100,000	58,229	15,000–25,000	28,361
1993	100,000–150,000	141,694	50,000–100,000	37,556	15,000–25,000	40,869
1994	100,000–150,000	128,032	50,000–100,000	30,355	15,000–25,000	30,788
1995	100,000–150,000	121,479	50,000–100,000	52,311	15,000–25,000	29,473
1996	100,000–150,000	90,781	50,000–100,000	28,729	15,000–25,000	19,095
1997	100,000–150,000	157,822	50,000–100,000	70,768	15,000–25,000	33,846
1998	100,000–150,000	119,623	50,000–100,000	62,257	15,000–25,000	17,732
1999	100,000–150,000	99,029	25,000–50,000	66,519	15,000–25,000	25,648
2000	100,000–150,000	133,094	25,000–50,000	56,599	15,000–25,000	20,151
2001	100,000–150,000	83,532	25,000–50,000	78,081	15,000–25,000	–
2002	90,000–160,000	78,591	25,000–50,000	62,833	15,000–30,000	–
2003	90,000–160,000	180,813	25,000–50,000	122,457	15,000–30,000	–
2004	90,000–160,000	71,281	25,000–50,000	103,201	15,000–30,000	–
2005	75,000–180,000	36,921	30,000–70,000	125,623	–	22,000 <sup>h</sup>
2006	90,000–160,000	92,896	30,000–70,000	92,533	–	–
2007	90,000–160,000	79,901	30,000–70,000	79,406	15,000–30,000	46,637
2008	90,000–160,000	90,146	30,000–70,000	90,684	15,000–30,000	25,247
2009 <sup>e</sup>	–	–	30,000–70,000	–	15,000–30,000	16,473 <sup>h</sup>
2010 <sup>e</sup>	–	–	30,000–70,000	86,333	15,000–30,000	–
2011 <sup>e</sup>	–	–	30,000–70,000	81,952	15,000–30,000	–
2012 <sup>e</sup>	–	–	30,000–70,000	58,838	15,000–30,000	–
2013 <sup>e</sup>	–	–	30,000–70,000	ND	15,000–30,000	–
2014 <sup>e</sup>	–	–	30,000–70,000	ND	15,000–30,000	19,242 <sup>h</sup>
2015 <sup>e</sup>	–	–	30,000–70,000	ND	15,000–30,000	28,072 <sup>h</sup>
2016 <sup>e</sup>	–	–	30,000–70,000	ND	15,000–30,000	–
2017 <sup>e</sup>	–	–	30,000–70,000	ND	15,000–30,000	17,106 <sup>i</sup>

<sup>a</sup> Inriver goal

<sup>b</sup> Enumeration estimates prior to 2016 reflect minor adjustments to the escapement database.

<sup>c</sup> Yentna River escapement goal only.

<sup>d</sup> Weir counts.

<sup>e</sup> Yentna River SEG replaced with lake goals at Judd, Chelatna, and Larson lakes.

<sup>f</sup> From 1978 to 2010 enumeration and goals were Bendix sonar; from 2011 to 2016 goals are DIDSON based.

<sup>g</sup> Escapement estimates via remote camera; an unknown number of salmon escaped into the lake after the camera was removed.

<sup>h</sup> Combined counts from weirs on Bear and Glacier Flat Creeks and surveys of remaining spawning streams; Bendix sonar count was 151,856.

<sup>i</sup> Partial count only; an unknown number of salmon escaped into the lake while the camera did not have power.



Appendix B11.—Average price per pound for commercially-harvested salmon, Upper Cook Inlet, 1975–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum
1975	0.54	0.63	0.54	0.35	0.41
1976	0.92	0.76	0.61	0.37	0.54
1977	1.26	0.86	0.72	0.38	0.61
1978	1.16	1.32	0.99	0.34	0.51
1979	1.63	1.41	0.98	0.34	0.88
1980	1.15	0.85	0.57	0.34	0.53
1981	1.46	1.20	0.83	0.38	0.65
1982	1.27	1.10	0.72	0.18	0.49
1983	0.97	0.74	0.45	0.18	0.36
1984	1.08	1.00	0.64	0.21	0.39
1985	1.20	1.20	0.70	0.20	0.45
1986	0.90	1.40	0.60	0.15	0.38
1987	1.40	1.50	0.80	0.22	0.45
1988	1.30	2.47	1.20	0.37	0.76
1989	1.25	1.70	0.75	0.40	0.47
1990	1.20	1.55	0.75	0.25	0.60
1991	1.20	1.00	0.77	0.12	0.35
1992	1.50	1.60	0.75	0.15	0.40
1993	1.20	1.00	0.60	0.12	0.45
1994	1.00	1.45	0.80	0.12	0.40
1995	1.00	1.15	0.45	0.12	0.27
1996	1.00	1.15	0.40	0.05	0.19
1997	1.00	1.15	0.45	0.05	0.19
1998	1.00	1.15	0.45	0.09	0.19
1999	1.00	1.30	0.45	0.12	0.19
2000	1.10	0.85	0.40	0.09	0.19
2001	1.00	0.65	0.40	0.08	0.19
2002	1.15	0.60	0.20	0.05	0.12
2003	0.95	0.60	0.20	0.05	0.12
2004	1.00	0.65	0.20	0.05	0.12
2005	1.00	0.95	0.50	0.08	0.20
2006	1.75	1.10	0.60	0.10	0.25
2007	1.75	1.05	0.60	0.10	0.25
2008	1.75	1.10	0.40	0.10	0.20
2009	1.75	1.10	0.40	0.10	0.20
2010	1.75	1.75	0.80	0.25	0.55
2011	2.80	1.50	0.75	0.25	0.80
2012	2.80	1.50	0.75	0.35	0.80
2013	2.80	2.25	0.85	0.35	0.80
2014	2.80	2.25	0.90	0.25	0.80
2015	2.00	1.60	0.60	0.25	0.40
2016	2.50	1.50	0.60	0.20	0.40
2017	3.78	1.86	1.14	0.15	0.62

*Note:* Price expressed as dollars per pound. Data source: 1969–1983: Commercial Fisheries Entry Commission; 1984–2017: random fish ticket averages, which do not include bonuses or postseason adjustments.

Appendix B12.—Average weight (pounds) of commercially-harvested salmon, Upper Cook Inlet, 1975–2017.

Year	Chinook	Sockeye	Coho	Pink	Chum
1975	24.8	6.1	6.8	3.6	7.1
1976	27.4	6.9	6.4	4.0	8.1
1977	28.1	7.6	6.7	3.7	8.0
1978	33.0	7.6	6.4	3.8	7.6
1979	27.5	6.2	6.3	3.3	7.3
1980	26.1	5.9	5.8	3.5	7.3
1981	23.8	6.4	6.5	3.5	7.7
1982	28.8	7.0	7.1	3.9	8.2
1983	29.5	6.4	6.9	3.3	7.8
1984	28.6	5.9	7.1	4.0	7.6
1985	27.7	5.6	7.2	3.3	7.6
1986	25.9	5.8	6.4	3.7	7.4
1987	29.0	6.7	6.6	3.5	7.1
1988	29.7	6.6	7.0	3.7	7.7
1989	24.1	6.6	6.6	3.2	7.2
1990	22.6	6.4	6.4	3.4	7.1
1991	21.5	5.6	6.1	3.1	6.6
1992	23.6	6.6	6.4	3.9	6.7
1993	25.8	5.9	5.9	3.0	5.7
1994	31.6	5.7	7.1	3.9	6.9
1995	25.5	5.6	6.4	3.3	7.2
1996	28.3	6.3	6.2	3.7	7.6
1997	27.6	6.5	6.3	3.4	7.3
1998	22.8	5.5	6.9	3.8	7.3
1999	23.9	5.7	5.8	3.1	8.0
2000	22.7	6.3	6.6	3.6	7.7
2001	18.2	6.0	6.6	3.5	6.9
2002	22.3	6.4	6.7	3.8	7.8
2003	20.4	5.9	6.5	3.6	6.9
2004	25.0	6.1	6.7	3.7	7.4
2005	24.9	6.1	6.3	3.3	7.2
2006	19.6	5.1	6.4	4.3	7.6
2007	20.4	6.3	6.4	3.6	7.3
2008	23.3	5.9	7.0	3.8	7.5
2009	17.4	6.1	6.5	3.3	7.0
2010	20.7	6.2	6.6	4.3	6.8
2011	20.2	6.5	5.7	3.2	6.7
2012	17.2	6.8	6.0	3.8	8.0
2013	13.9	6.3	6.1	3.2	7.4
2014	15.8	6.2	6.3	3.7	7.4
2015	16.7	5.3	5.8	3.3	6.6
2016	19.6	5.8	6.3	4.3	7.1
2007-2016 Avg	18.5	6.1	6.3	3.6	7.2
1975-2016 Avg	23.9	6.2	6.5	3.6	7.3
2017	21.9	5.7	6.3	3.6	8.2

Note: Total poundage divided by numbers of fish from fish ticket totals.

Appendix B13.—Registered units of gillnet fishing effort by gear type in Cook Inlet, 1975–2017.

Year	Drift Gillnet			Set Gillnet			Total
	Resident	Non-Resident	Subtotal	Resident	Non-Resident	Subtotal	
1975	539	245	784	695	63	758	1,542
1976	410	186	596	675	44	719	1,315
1977	387	188	575	690	43	733	1,308
1978	401	190	591	701	46	747	1,338
1979	410	189	599	705	44	749	1,348
1980	407	190	597	699	48	747	1,344
1981	412	186	598	687	60	747	1,345
1982	413	178	591	695	53	748	1,339
1983	415	172	587	684	61	745	1,332
1984	423	165	588	670	74	744	1,332
1985	418	173	591	669	76	745	1,336
1986	412	176	588	665	78	743	1,331
1987	415	171	586	662	81	743	1,329
1988	421	164	585	660	83	743	1,328
1989	415	170	585	645	98	743	1,328
1990	412	173	585	644	99	743	1,328
1991	412	172	584	642	103	745	1,329
1992	404	179	583	636	109	745	1,328
1993	398	185	583	633	112	745	1,328
1994	395	187	582	628	117	745	1,327
1995	393	189	582	622	123	745	1,327
1996	392	190	582	621	124	745	1,327
1997	392	189	581	621	124	745	1,326
1998	393	186	579	621	124	745	1,324
1999	390	185	575	621	124	745	1,320
2000	394	182	576	621	124	745	1,321
2001	395	179	574	625	119	744	1,318
2002	396	176	572	620	123	743	1,315
2003	400	172	572	617	125	742	1,314
2004	402	169	571	616	123	739	1,310
2005	404	167	571	609	128	737	1,308
2006	400	169	570	614	124	738	1,308
2007	400	171	571	609	129	738	1,309
2008	405	166	571	613	125	738	1,309
2009	401	169	570	608	130	738	1,308
2010	407	162	569	604	132	736	1,305
2011	409	160	569	609	127	736	1,305
2012	410	159	569	620	116	736	1,305
2013	409	160	569	624	112	736	1,305
2014	414	155	569	623	112	735	1,304
2015	408	160	568	624	110	734	1,302
2016	409	159	568	613	122	735	1,303
2017	417	152	569	619	116	735	1,304

Source: Commercial Fisheries Entry Commission. <http://www.cfec.state.ak.us/pstatus/14052016.htm>

Appendix B14.—Forecast and projected commercial harvests of salmon by species, Upper Cook Inlet, 1990–2017.

Year	Sockeye			Coho			Pink			Chum			Chinook		
	Forecast <sup>a</sup>	Actual <sup>b,d</sup>	Error	Projected	Actual <sup>c,d</sup>	Error	Projected	Actual <sup>c,d</sup>	Error	Projected	Actual <sup>c,d</sup>	Error	Projected	Actual <sup>c,d</sup>	Error
1990	4,300,000	3,822,864	-12%	250,000	501,739	50%	600,000	603,630	1%	400,000	351,197	-14%	25,000	16,105	-55%
1991	3,200,000	2,472,589	-29%	400,000	426,498	6%	90,000	14,663	-514%	500,000	280,230	-78%	20,000	13,542	-48%
1992	3,600,000	9,502,392	62%	400,000	468,930	15%	400,000	695,861	43%	350,000	274,303	-28%	20,000	17,171	-16%
1993	2,500,000	5,042,799	50%	450,000	306,882	-47%	25,000	100,934	75%	350,000	122,770	-185%	15,000	18,871	21%
1994	2,000,000	3,826,508	48%	400,000	583,793	31%	600,000	523,434	-15%	250,000	303,177	18%	15,000	19,962	25%
1995	2,700,000	3,224,087	16%	400,000	447,130	11%	100,000	133,578	25%	250,000	529,428	53%	15,000	17,893	16%
1996	3,300,000	4,262,377	23%	400,000	321,668	-24%	600,000	242,911	-147%	350,000	156,520	-124%	15,000	14,306	-5%
1997	5,300,000	4,546,125	-17%	400,000	152,408	-162%	100,000	70,945	-41%	250,000	103,036	-143%	15,000	13,292	-13%
1998	2,500,000	1,619,119	-54%	300,000	160,688	-87%	300,000	551,737	46%	200,000	95,704	-109%	17,000	8,124	-109%
1999	2,000,000	3,164,355	37%	300,000	126,105	-138%	75,000	16,176	-364%	200,000	174,554	-15%	16,000	14,383	-11%
2000	3,000,000	1,778,547	-69%	150,000	236,871	37%	500,000	146,482	-241%	200,000	127,069	-57%	15,000	7,350	-104%
2001	2,700,000	2,304,670	-17%	300,000	113,311	-165%	50,000	72,560	31%	250,000	84,494	-196%	13,000	9,295	-40%
2002	2,200,000	3,356,572	34%	160,000	246,281	35%	170,000	446,960	62%	120,000	237,949	50%	10,000	12,714	21%
2003	2,400,000	4,145,981	42%	170,000	101,756	-67%	80,000	48,789	-64%	140,000	120,767	-16%	10,000	18,503	46%
2004	3,700,000	5,639,628	34%	160,000	311,058	49%	380,000	357,939	-6%	150,000	146,165	-3%	10,000	26,922	63%
2005	4,100,000	5,962,572	31%	200,000	224,657	11%	70,000	48,419	-45%	140,000	69,740	-101%	10,000	27,667	64%
2006	2,100,000	2,653,446	21%	200,000	177,853	-12%	350,000	404,111	13%	140,000	64,033	-119%	20,000	18,029	-11%
2007	3,300,000	4,044,832	18%	210,000	177,339	-18%	50,000	147,020	66%	130,000	77,240	-68%	20,000	17,625	-13%
2008	3,900,000	3,005,299	-30%	200,000	171,869	-16%	380,000	169,368	-124%	100,000	50,315	-99%	20,000	13,333	-50%
2009	3,000,000	2,842,335	-6%	210,000	153,210	-37%	70,000	214,321	67%	80,000	82,808	3%	20,000	8,750	-129%
2010	2,300,000	3,695,633	38%	179,000	207,350	14%	305,000	292,706	-4%	70,000	228,863	69%	17,000	9,900	-72%
2011	4,600,000	6,359,116	28%	178,000	95,291	-87%	106,000	34,123	-211%	101,000	129,407	22%	14,000	11,248	-24%
2012	4,400,000	4,271,018	-3%	159,000	106,775	-49%	334,000	469,598	29%	113,000	269,733	58%	12,000	2,527	-375%
2013	4,900,000	3,639,862	-35%	147,000	260,963	44%	99,000	48,275	-105%	152,000	139,365	-9%	9,000	5,398	-67%
2014	4,300,000	3,329,970	-29%	165,000	137,376	-20%	338,000	642,879	47%	170,000	116,093	-46%	7,600	4,660	-63%
2015	3,700,000	3,685,160	0%	161,000	216,032	25%	98,000	48,004	-104%	176,000	275,960	36%	6,700	10,798	38%
2016	5,300,000	3,342,183	-59%	160,000	147,469	-8%	393,000	382,436	-3%	184,000	123,711	-49%	6,700	10,027	33%
2017	4,016,000	4,608,000	13%	167,000	303,642	45%	98,000	167,842	42%	184,000	243,600	24%	6,300	7,660	18%
Avg.	3,404,143	3,933,859	13%	249,143	245,891	-1%	241,464	253,418	5%	203,571	177,794	-14%	14,296	13,431	-6%

<sup>a</sup> Harvest forecasts have typically been prepared using average return per spawner values, parent-year escapements, and average marine maturity schedules or time series modeling tempered by available juvenile production data or combinations of these data sets.

<sup>b</sup> Sockeye salmon harvest estimates include commercial, sport, personal use, educational, and subsistence fisheries.

<sup>c</sup> Actual harvests prior to 2017 reflect minor adjustments to the harvest database.

<sup>d</sup> Harvest projections are prepared using subjective estimates of parent-year escapements, gross trends in harvest, and expected intensity of fishery.

Appendix B15.—Upper Cook Inlet state subsistence fisheries salmon harvest, 1980–2017.

Tyonek Subsistence Fishery								
Year	No. of Permits		Chinook	Sockeye	Coho	Pink	Chum	Total
	Issued	Returned						
1980	67	67	1,936	262	0	0	0	2,198
1981	70	70	2,002	269	64	32	15	2,382
1982	69	69	1,590	310	113	4	14	2,031
1983	73	73	2,755	251	78	6	0	3,090
1984	70	70	2,364	310	66	23	3	2,766
1985	176	ND	1,967	163	91	10	0	2,231
1986	101	ND	1,674	198	210	44	45	2,171
1987	64	61	1,689	174	156	25	10	2,055
1988	47	42	1,776	102	283	13	9	2,183
1989	49	47	1,303	89	120	1	0	1,513
1990	42	37	886	75	400	14	23	1,397
1991	57	54	925	20	69	0	0	1,014
1992	57	44	1,170	96	294	24	9	1,594
1993	62	54	1,566	68	88	25	23	1,769
1994	58	49	905	101	122	27	0	1,154
1995	70	55	1,632	54	186	18	0	1,891
1996	73	49	1,615	88	177	9	27	1,917
1997	70	42	1,051	200	241	13	0	1,505
1998	74	49	1,430	251	97	3	2	1,783
1999	77	54	1,620	247	175	20	66	2,127
2000	60	47	1,461	78	103	0	8	1,649
2001	84	58	1,450	254	72	9	6	1,790
2002	101	71	1,609	314	162	6	14	2,106
2003	87	74	1,384	136	54	12	9	1,595
2004	97	75	1,751	121	168	0	0	2,040
2005	78	67	1,183	65	159	2	0	1,409
2006	82	55	1,366	32	23	1	0	1,422
2007	84	67	1,526	249	164	3	4	1,946
2008	94	77	1,492	146	227	11	16	1,892
2009	89	69	817	229	320	2	1	1,369
2010	105	77	1,116	281	223	3	3	1,626
2011	114	63	851	202	34	10	10	1,107
2012	89	69	1,102	223	174	3	5	1,507
2013	82	48	1,352	278	311	0	32	1,973
2014	92	73	896	487	575	15	5	1,978
2015	83	72	1,070	505	568	16	6	2,165
2016	74	64	1,030	188	225	8	12	1,462
2017	74	47	1,284	457	265	32	6	2,045

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Yentna Subsistence Fishery								
Year	No. of Permits		Chinook	Sockeye	Coho	Pink	Chum	Total
	Issued	Returned						
<b>Personal Use</b>								
1996	17	14	0	242	46	115	51	454
1997	24	21	0	549	83	30	10	672
<b>Subsistence</b>								
1998	21	18	0	495	113	30	15	653
1999	18	16	0	516	48	18	13	595
2000	19	19	0	379	92	4	7	482
2001	16	15	0	545	50	10	4	609
2002	25	22	0	454	133	14	31	632
2003	19	15	0	553	67	2	8	630
2004	21	19	0	441	146	36	3	626
2005	18	17	0	177	42	24	25	268
2006	22	22	0	368	175	14	26	583
2007	22	22	0	367	66	17	18	468
2008	16	16	0	310	57	23	7	397
2009	17	17	0	253	14	0	6	273
2010	32	32	0	642	50	38	18	748
2011	25	25	0	598	90	337	21	1,046
2012	21	21	0	279	24	21	19	343
2013	22	19	0	160	92	128	32	412
2014	20	18	0	328	84	17	32	461
2015	29	27	0	578	151	47	69	845
2016	26	25	0	514	204	36	37	791
2017	26	26	0	454	185	47	10	696

*Note:* Harvest estimated from returned permits only, not expanded for non-returned permits.

Appendix B16.—Upper Cook Inlet educational fisheries salmon harvest, 2017.

Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
2017	Kenaitze	22	9,372	285	90	0	9,769
	NTC	48	873	482	224	0	1,627
	NND	31	220	55	39	0	345
	NES	16	110	34	20	0	180
	Sons of American Legion	0	7	58	10	0	75
	APVFW	0	4	9	7	0	20
	Kasilof H.A.	0	27	42	0	0	69
	SCF	0	54	15	12	0	81
	Knik	0	48	22	17	12	99
	Big Lake	2	19	14	1	13	49
	Eklutna	0	128	3	9	26	166
	Territorial Homestead Lodge	3	106	23	21	6	159
	Chickaloon Native Village	-	-	-	-	-	0
	Total	122	10,968	1,042	450	57	12,639

*Note:* Harvest data include both early- and late-run Kenai River Chinook and sockeye salmon.

Appendix B17.—Effort and harvest in Upper Cook Inlet personal use salmon fisheries, 1996–2016.

Kasilof River Gillnet															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	5	582	16	9,506	156	46	3	0	0	8	0	1	0	9,561	157
1997	5	815	26	17,997	231	65	2	1	0	102	7	3	1	18,168	233
1998	5	1,075	24	15,975	425	126	7	0	0	15	4	12	10	16,128	426
1999	10	1,287	39	12,832	371	442	27	25	2	10	0	10	0	13,319	374
2000	13	1,252	23	14,774	275	514	15	9	0	17	2	10	0	15,324	276
2001	8	1,001	20	17,201	394	174	6	6	0	11	0	7	5	17,399	397
2002	10	1,025	16	17,980	274	192	5	12	0	30	2	13	4	18,227	277
2003	10	1,206	17	15,706	277	400	13	107	0	9	0	4	0	16,226	284
2004	10	1,272	10	25,417	203	163	4	58	13	6	1	0	0	25,644	205
2005	11	1,506	6	26,609	104	87	1	326	5	16	1	1	0	27,039	104
2006	10	1,724	5	28,867	91	287	2	420	16	11	0	6	0	29,591	94
2007	10	1,570	7	14,943	66	343	3	68	4	2	0	0	0	15,356	66
2008	10	1,534	7	23,432	107	151	2	65	3	35	4	23	3	23,706	107
2009	10	1,761	9	26,646	167	127	2	165	0	14	1	11	2	26,963	167
2010	10	1,855	13	21,924	170	136	3	23	5	23	5	1	0	22,106	170
2011	10	1,846	16	26,780	244	167	4	47	10	23	1	3	0	27,020	244
2012	10	1,696	21	15,638	197	103	3	161	19	53	19	15	1	15,969	199
2013	5	1,082	13	14,439	187	46	2	129	32	3	0	5	1	14,621	187
2014	10	1,386	17	22,567	302	50	2	30	10	105	44	18	0	22,770	306
2015	10	1,741	22	27,567	339	61	3	191	41	20	5	2	1	27,841	341
2016	10	1,963	23	26,539	342	141	3	23	0	5	0	23	1	26,731	342
2017	10	1,874	27	21,927	309	118	4	5	1	48	8	43	9	22,141	309
Min.	5	582		9,506		46		0		2		0		9,561	
Mean	9	1,389		20,159		182		89		25		8		20,539	
Max.	13	1,963		28,867		514		420		105		23		29,591	

Kasilof River Dip Net															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	27	1,300	23	11,197	127	50	1	334	18	103	2	17	0	11,701	130
1997	27	1,091	32	9,737	150	35	2	90	3	19	2	19	1	9,900	153
1998	27	3,421	33	45,161	525	134	3	731	18	610	25	74	32	46,710	528
1999	27	3,611	43	37,176	507	127	5	286	50	264	12	52	8	37,905	511
2000	27	2,622	36	23,877	403	134	7	1,004	16	841	39	34	0	25,890	407
2001	27	3,382	37	37,612	505	138	6	766	25	307	14	23	0	38,846	511
2002	44	4,020	38	46,769	530	106	6	1,197	59	1,862	73	139	7	50,073	553
2003	44	3,874	28	43,870	440	57	4	592	49	286	21	30	1	44,835	447
2004	44	4,432	19	48,315	259	44	3	668	21	396	15	90	5	49,513	263
2005	44	4,500	9	43,151	100	16	1	538	16	658	12	102	2	44,465	103
2006	44	5,763	10	56,144	113	55	1	1,057	15	992	8	105	4	58,353	117
2007	44	4,627	9	43,293	105	35	1	487	8	383	6	136	2	44,334	106
2008	44	5,552	14	54,051	153	46	3	509	11	787	10	143	4	55,536	154
2009	44	7,650	21	73,035	246	34	1	1,441	30	1,274	19	173	3	75,957	248
2010	44	7,588	27	70,774	303	31	2	1,768	45	974	24	279	9	73,826	307
2011	44	6,571	35	49,766	351	24	3	977	39	652	40	144	14	51,562	355
2012	44	6,536	32	73,419	448	16	1	1,170	42	896	38	147	11	75,649	452
2013	44	8,556	36	85,528	473	18	1	1,666	84	683	19	339	15	88,233	481
2014	44	10,236	51	88,513	547	0	0	2,606	106	2,769	66	342	15	94,230	561
2015	44	10,346	52	89,000	566	0	0	2,723	95	1,607	74	597	31	93,927	579
2016	44	9,334	50	58,273	414	26	2	1,255	57	1,733	46	329	23	61,618	421
2017	44	9,458	63	78,260	621	14	2	605	30	2,850	80	969	72	82,698	631
Min.	27	1,091		9,737		0		90		19		17		9,900	
Mean	39	5,658		53,042		52		1,021		952		195		55,262	
Max.	44	10,346		89,000		138		2,723		2,850		969		94,230	

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Kenai River Dip Net																
Year	Days Open	Days Fished			Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	
1996	27	10,503	60	102,821	367	295	5	1,932	29	2,404	33	175	10	107,627	375	
1997	22	11,023	87	114,619	439	364	13	559	21	619	14	58	5	116,219	448	
1998	18	10,802	59	103,847	716	254	10	1,011	62	1,032	62	85	3	106,229	724	
1999	22	13,738	79	149,504	1,084	488	13	1,009	108	1,666	64	102	13	152,769	1,094	
2000	22	12,354	69	98,262	752	410	18	1,449	62	1,457	75	193	31	101,771	762	
2001	22	14,772	66	150,766	909	638	15	1,555	105	1,326	37	155	19	154,440	926	
2002	22	14,840	56	180,028	844	606	11	1,721	64	5,662	102	551	36	188,568	874	
2003	22	15,263	50	223,580	891	1,016	18	1,332	68	1,647	98	249	22	227,824	905	
2004	22	18,513	35	262,831	583	792	7	2,661	66	2,103	27	387	12	268,774	905	
2005	22	20,977	18	295,496	273	997	3	2,512	24	1,806	12	321	2	301,132	275	
2006	20	12,685	16	127,630	183	1,034	3	2,235	15	11,127	37	551	9	142,577	203	
2007	22	21,908	23	291,270	335	1,509	4	2,111	24	1,939	23	472	17	297,301	337	
2008	22	20,772	27	234,109	338	1,362	10	2,609	21	10,631	49	504	8	249,215	343	
2009	22	26,171	35	339,993	524	1,189	7	2,401	29	5,482	27	285	7	349,350	525	
2010	22	28,342	44	389,552	702	865	7	2,870	56	3,655	28	508	15	397,451	705	
2011	22	32,818	60	537,765	1,105	1,243	10	4,745	107	3,914	86	915	47	548,583	1,115	
2012	22	34,374	61	526,992	1,109	40	3	4,008	117	3,770	101	424	14	535,236	1,120	
2013	22	33,193	63	347,222	822	11	1	3,169	74	3,625	49	701	29	354,727	827	
2014	22	36,380	81	379,823	1,023	0	0	4,710	157	19,140	184	1,194	51	404,866	1,053	
2015	22	31,487	75	377,532	1,088	66	2	4,150	130	4,147	99	957	45	386,853	1,101	
2016	22	30,745	75	259,057	817	638	8	3,277	106	7,834	90	717	34	271,524	830	
2017	22	27,775	87	297,049	1,103	1,194	14	732	41	7,962	117	886	75	307,824	1,112	
Min.	18	10,503		98,262		0		559		619		58		101,771		
Mean	22	21,792		263,170		682		2,398		4,679		472		271,403		
Max.	27	36,380		537,765		1,509		4,745		19,140		1,194		548,583		

Unknown Fishery																
Year	Days Open	Days Fished			Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	
1996	-	472	33	4,761	463	24	7	131	37	127	37	4	3	5,047	467	
1997	-	1,003	50	3,310	276	0	0	64	14	51	21	4	3	3,429	282	
1998	-	921	39	7,562	287	34	5	294	77	196	19	20	0	8,106	301	
1999	-	684	20	7,994	352	51	5	76	7	126	2	4	0	8,251	353	
2000	-	648	23	5,429	274	44	13	218	60	84	11	24	15	5,799	282	
2001	-	1,339	34	12,673	380	188	17	292	30	175	24	90	34	13,418	394	
2002	-	1,339	26	14,846	353	166	10	341	25	916	81	54	8	16,323	380	
2003	-	1,325	21	15,675	247	238	25	219	14	140	9	88	9	16,360	254	
2004	-	1,143	13	13,527	179	99	3	366	25	210	10	25	4	14,227	185	
2005	-	270	2	4,520	38	32	1	39	1	40	2	4	0	4,635	38	
2006	-	371	2	3,406	34	29	1	47	2	304	16	84	0	3,870	41	
2007	-	534	3	6,729	52	37	1	61	3	28	1	6	0	6,861	52	
2008	-	622	4	6,890	63	41	2	66	3	412	9	58	3	7,467	64	
2009	-	719	7	7,968	84	25	1	144	10	133	4	57	5	8,327	85	
2010	-	760	8	8,300	125	15	1	168	7	109	2	12	1	8,605	125	
2011	-	836	11	10,695	136	17	1	80	5	135	17	72	7	10,962	137	
2012	-	937	14	13,295	219	4	1	173	25	127	9	36	5	13,635	221	
2013	-	867	15	7,126	154	9	2	155	17	113	8	8	2	7,411	154	
2014	-	1,022	14	9,315	131	0	0	129	18	563	22	78	15	10,085	135	
2015	-	820	14	8,626	183	0	0	263	19	153	12	41	3	9,084	184	
2016	-	645	14	4,837	155	15	1	34	7	233	23	81	12	5,200	158	
2017	-	543	16	4,760	147	19	2	41	4	107	9	10	2	4,937	148	
Min.		270		3,310		0		34		28		4		3,429		
Mean		810		8,284		49		155		204		39		8,729		
Max.		1,339		15,675		238		366		916		90		16,360		

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Kenai River Dip Net															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	27	10,503	60	102,821	367	295	5	1,932	29	2,404	33	175	10	107,627	375
1997	22	11,023	87	114,619	439	364	13	559	21	619	14	58	5	116,219	448
1998	18	10,802	59	103,847	716	254	10	1,011	62	1,032	62	85	3	106,229	724
1999	22	13,738	79	149,504	1,084	488	13	1,009	108	1,666	64	102	13	152,769	1,094
2000	22	12,354	69	98,262	752	410	18	1,449	62	1,457	75	193	31	101,771	762
2001	22	14,772	66	150,766	909	638	15	1,555	105	1,326	37	155	19	154,440	926
2002	22	14,840	56	180,028	844	606	11	1,721	64	5,662	102	551	36	188,568	874
2003	22	15,263	50	223,580	891	1,016	18	1,332	68	1,647	98	249	22	227,824	905
2004	22	18,513	35	262,831	583	792	7	2,661	66	2,103	27	387	12	268,774	905
2005	22	20,977	18	295,496	273	997	3	2,512	24	1,806	12	321	2	301,132	275
2006	20	12,685	16	127,630	183	1,034	3	2,235	15	11,127	37	551	9	142,577	203
2007	22	21,908	23	291,270	335	1,509	4	2,111	24	1,939	23	472	17	297,301	337
2008	22	20,772	27	234,109	338	1,362	10	2,609	21	10,631	49	504	8	249,215	343
2009	22	26,171	35	339,993	524	1,189	7	2,401	29	5,482	27	285	7	349,350	525
2010	22	28,342	44	389,552	702	865	7	2,870	56	3,655	28	508	15	397,451	705
2011	22	32,818	60	537,765	1,105	1,243	10	4,745	107	3,914	86	915	47	548,583	1,115
2012	22	34,374	61	526,992	1,109	40	3	4,008	117	3,770	101	424	14	535,236	1,120
2013	22	33,193	63	347,222	822	11	1	3,169	74	3,625	49	701	29	354,727	827
2014	22	36,380	81	379,823	1,023	0	0	4,710	157	19,140	184	1,194	51	404,866	1,053
2015	22	31,487	75	377,532	1,088	66	2	4,150	130	4,147	99	957	45	386,853	1,101
2016	22	30,745	75	259,057	817	638	8	3,277	106	7,834	90	717	34	271,524	830
2017	22	27,775	87	297,049	1,103	1,194	14	732	41	7,962	117	886	75	307,824	1,112
Min.	18	10,503		98,262		0		559		619		58		101,771	
Mean	22	21,792		263,170		682		2,398		4,679		472		271,403	
Max.	27	36,380		537,765		1,509		4,745		19,140		1,194		548,583	

Unknown Fishery															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	-	472	33	4,761	463	24	7	131	37	127	37	4	3	5,047	467
1997	-	1,003	50	3,310	276	0	0	64	14	51	21	4	3	3,429	282
1998	-	921	39	7,562	287	34	5	294	77	196	19	20	0	8,106	301
1999	-	684	20	7,994	352	51	5	76	7	126	2	4	0	8,251	353
2000	-	648	23	5,429	274	44	13	218	60	84	11	24	15	5,799	282
2001	-	1,339	34	12,673	380	188	17	292	30	175	24	90	34	13,418	394
2002	-	1,339	26	14,846	353	166	10	341	25	916	81	54	8	16,323	380
2003	-	1,325	21	15,675	247	238	25	219	14	140	9	88	9	16,360	254
2004	-	1,143	13	13,527	179	99	3	366	25	210	10	25	4	14,227	185
2005	-	270	2	4,520	38	32	1	39	1	40	2	4	0	4,635	38
2006	-	371	2	3,406	34	29	1	47	2	304	16	84	0	3,870	41
2007	-	534	3	6,729	52	37	1	61	3	28	1	6	0	6,861	52
2008	-	622	4	6,890	63	41	2	66	3	412	9	58	3	7,467	64
2009	-	719	7	7,968	84	25	1	144	10	133	4	57	5	8,327	85
2010	-	760	8	8,300	125	15	1	168	7	109	2	12	1	8,605	125
2011	-	836	11	10,695	136	17	1	80	5	135	17	72	7	10,962	137
2012	-	937	14	13,295	219	4	1	173	25	127	9	36	5	13,635	221
2013	-	867	15	7,126	154	9	2	155	17	113	8	8	2	7,411	154
2014	-	1,022	14	9,315	131	0	0	129	18	563	22	78	15	10,085	135
2015	-	820	14	8,626	183	0	0	263	19	153	12	41	3	9,084	184
2016	-	645	14	4,837	155	15	1	34	7	233	23	81	12	5,200	158
2017	-	543	16	4,760	147	19	2	41	4	107	9	10	2	4,937	148
Min.		270		3,310		0		34		28		4		3,429	
Mean		810		8,284		49		155		204		39		8,729	
Max.		1,339		15,675		238		366		916		90		16,360	

-continued-

Appendix B17.–Page 4 of 4.

<i>Unknown Fishery</i>															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	-	472	33	4,761	463	24	7	131	37	127	37	4	3	5,047	467
1997	-	1,003	50	3,310	276	0	0	64	14	51	21	4	3	3,429	282
1998	-	921	39	7,562	287	34	5	294	77	196	19	20	0	8,106	301
1999	-	684	20	7,994	352	51	5	76	7	126	2	4	0	8,251	353
2000	-	648	23	5,429	274	44	13	218	60	84	11	24	15	5,799	282
2001	-	1,339	34	12,673	380	188	17	292	30	175	24	90	34	13,418	394
2002	-	1,339	26	14,846	353	166	10	341	25	916	81	54	8	16,323	380
2003	-	1,325	21	15,675	247	238	25	219	14	140	9	88	9	16,360	254
2004	-	1,143	13	13,527	179	99	3	366	25	210	10	25	4	14,227	185
2005	-	270	2	4,520	38	32	1	39	1	40	2	4	0	4,635	38
2006	-	371	2	3,406	34	29	1	47	2	304	16	84	0	3,870	41
2007	-	534	3	6,729	52	37	1	61	3	28	1	6	0	6,861	52
2008	-	622	4	6,890	63	41	2	66	3	412	9	58	3	7,467	64
2009	-	719	7	7,968	84	25	1	144	10	133	4	57	5	8,327	85
2010	-	760	8	8,300	125	15	1	168	7	109	2	12	1	8,605	125
2011	-	836	11	10,695	136	17	1	80	5	135	17	72	7	10,962	137
2012	-	937	14	13,295	219	4	1	173	25	127	9	36	5	13,635	221
2013	-	867	15	7,126	154	9	2	155	17	113	8	8	2	7,411	154
2014	-	1,022	14	9,315	131	0	0	129	18	563	22	78	15	10,085	135
2015	-	820	14	8,626	183	0	0	263	19	153	12	41	3	9,084	184
2016	-	645	14	4,837	155	15	1	34	7	233	23	81	12	5,200	158
2017	-	543	16	4,760	147	19	2	41	4	107	9	10	2	4,937	148
Min.		270		3,310		0		34		28		4		3,429	
Mean		810		8,284		49		155		204		39		8,729	
Max.		1,339		15,675		238		366		916		90		16,360	

<i>Upper Cook Inlet Personal Use Fisheries Total</i>														
Year	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	16,606	85	145,545	644	452	12	4,811	56	2,973	50	350	12	154,131	655
1997	14,923	114	148,940	592	464	13	777	26	844	27	88	6	151,113	604
1998	17,360	84	176,581	1,032	549	14	2,685	102	1,933	70	220	34	181,968	1,043
1999	19,752	101	208,589	1,309	1,108	31	1,413	119	2,078	66	168	15	213,356	1,320
2000	17,930	88	149,267	961	1,102	28	3,638	114	2,482	86	290	35	156,779	976
2001	20,625	86	218,688	1,176	1,138	24	2,637	112	1,821	46	276	39	224,560	1,197
2002	21,224	74	259,623	1,092	1,070	17	3,271	91	8,470	149	757	38	273,191	1,136
2003	21,668	63	298,831	1,061	1,711	34	2,250	85	2,082	101	371	24	305,245	1,079
2004	25,360	43	350,091	678	1,098	9	3,754	75	2,715	32	502	14	358,158	689
2005	27,253	21	369,776	311	1,132	3	3,415	29	2,520	17	428	3	377,271	314
2006	20,543	20	216,047	236	1,405	4	3,759	27	12,434	41	746	10	234,391	242
2007	28,677	29	356,717	386	1,924	5	2,727	26	2,352	24	614	17	364,334	388
2008	28,491	34	318,594	412	1,601	11	3,249	24	11,869	52	727	10	336,040	416
2009	37,754	46	457,539	629	1,384	7	4,204	45	6,969	34	559	13	470,655	631
2010	41,387	56	514,254	808	1,059	8	8,405	113	6,482	47	1,091	20	531,291	818
2011	43,450	72	630,242	1,176	1,453	11	6,754	122	4,880	100	1,169	50	644,498	1,187
2012	43,543	74	629,344	1,232	163	5	5,512	128	4,846	111	623	19	640,489	1,244
2013	43,698	73	454,314	958	83	3	5,119	122	4,423	53	1,052	35	464,993	968
2014	50,819	94	506,047	1,164	50	2	9,370	199	26,795	217	1,859	56	544,121	1,202
2015	46,697	91	521,985	1,256	127	4	10,648	191	7,257	137	1,927	62	541,943	1,279
2016	42,687	90	348,707	958	820	10	4,590	122	9,805	105	1,150	45	365,072	972
2017	40,961	105	406,889	1,247	1,346	15	1,665	55	11,241	144	1,962	105	423,102	665
Min.	14,923		145,545		50		777		844		88		151,113	
Mean	30,021		346,653		947		4,428		6,001		713		358,743	
Max.	50,819		630,242		1,924		10,648		26,795		1,927		644,498	

Note: Does not include Beluga River dip net fishery.

# EXHIBIT H

Case No. 20-35029

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**UNITED STATES COURT OF APPEALS  
FOR THE NINTH CIRCUIT**

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UNITED COOK INLET DRIFT ASSOCIATION, *et al.*,  
Plaintiffs-Appellees,

v.

NATIONAL MARINE FISHERIES SERVICE; REBECCA BLANK, *et al.*,  
Defendants-Appellants,

and

STATE OF ALASKA,  
Intervenor-Defendant-Appellant.

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Appeal from the United States District Court, District of Alaska,  
District Court No. 3:13-cv-00104-TMB

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**SUPPLEMENTAL DECLARATION OF ERIK HUEBSCH**

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Attorneys for Plaintiffs-Appellees United Cook Inlet Drift Association and  
Cook Inlet Fisherman's Fund

I, Erik Huebsch, testify as follows:

1. My name is Erik Huebsch. I am over 18 and have personal knowledge of the matters contained in this declaration, except where otherwise noted below.
2. I am a member of the United Cook Inlet Drift Association (UCIDA) and have been the Vice President of that organization for over ten years.
3. I am a commercial fisherman and live in the town of Kasilof, a small fishing community near Cook Inlet. I own and operate a drift gillnet fishing boat and participate in the Cook Inlet drift gillnet salmon fishery. I fish predominately in Cook Inlet and have done so since 1977.
4. I previously submitted two declarations in support of UCIDA's Motion to Enforce before the district court in this case. *See* ER 43-49, 347-365. This declaration is intended to supplement those prior declarations to discuss events that have occurred since the filing of this appeal. Specifically, this declaration discusses regulatory actions taken by the Alaska Board of Fisheries (the "Board of Fish") in February of 2020 that will directly and materially affect the commercial salmon fishing industry in Cook Inlet in 2020 and beyond. These changes are relevant to both the UCIDA's pending motion to expedite appellate review, as well as UCIDA's request for equitable relief as set forth in its Opening Brief on appeal.

5. The State of Alaska, through its Board of Fish and Department of Fish and Game (“ADF&G”) is currently regulating the Cook Inlet salmon fishery while the National Marine Fisheries Service (“NMFS”) and North Pacific Fishery Management Council (the “Council”) prepare an FMP as instructed by the Ninth Circuit in *United Cook Inlet v. National Marine Fisheries Service*, 837 F.3d 1055 (9<sup>th</sup> Cir. 2016). The many problems with the State’s management are set out in my prior declarations, as well as the Declaration of Jeff Fox. ER 431-440.

6. Since the filing of the appeal the State has taken actions that will make commercial fishing in Cook Inlet appreciably worse, as set forth below.

7. The Board of Fish is the policy making body for the State with respect to fisheries. The Board typically reviews and discusses “proposals” generated by stakeholders, ADF&G and (sometimes) by the Board itself. The Board then votes to accept or reject proposals (or modify and accept proposals). If the proposal is accepted, the proposal is encapsulated in a regulatory change, and (once signed by the Lieutenant Governor) becomes regulation. There is often a lag of one to three months between the Board’s approval of a regulatory change, and the formal adoption of that regulation.

8. The Board of Fish met in February of 2020 to discuss changes for the Cook Inlet salmon fishery, among other fisheries. I attended the Board of Fish Meetings on February 10th, 11th, 12th, and 13th of 2020. At the meetings, the

Board received, heard, and voted on various proposals to change the regulations applicable to the Cook Inlet salmon fishery. The proposals approved during the February 2020 meetings will be promulgated in the Alaska Administrative Code (AAC) in a few months and will govern fishing season 2020.

9. Provided below is a discussion of some of various measures that the Board of Fish adopted (and refused to adopt) during the February 2020 meeting. It easy to get lost in the details of this regulatory scheme. The short version is that the Board of Fish's suite of regulatory measures largely gutted what is left of the commercial drift gillnet salmon fishery. Based on the 2020 ADF&G run forecast and the newly passed regulations that will further restrict the Cook Inlet commercial salmon fishery during the upcoming fishing season, UCIDA estimates that the average commercial driftnet fishing vessel in 2020 will catch about 1,000 sockeye salmon. This harvest equates to an average per-vessel annual *gross* revenue of only approximately \$10,000. That level of gross revenue does not even cover the costs of fishing. Many UCIDA members have barely been surviving the last few years under State management, and many have already given up. With these new restrictions, the commercial fishing industry is unlikely to survive past 2020 as a viable enterprise.

10. Equally troubling, all these state restrictions were put in place without any consultation or coordination with NMFS , or any effort by the State to



comply with the Magnuson-Stevens Act or its National Standards. In fact, many of the decision were undeniably inconsistent with the Magnuson-Stevens Act, such as taking harvest that historically went to the commercial fishery and allocating that harvest to Alaska-resident-only personal use fisheries including another newly created resident-only personal use fishery . Federal law (National Standard 4), by contrast, is clear that fishery measures “shall not discriminate between residents of different states.” 16 U.S.C. § 1851.

11. Attached hereto as Exhibits A through I are certain proposals, on which the Board voted at the February 11, 12 and 13, 2020 meetings, that will affect—or, where rejected, would have affected—the Cook Inlet commercial salmon fishery. Per Board custom, proposed deletions to existing regulatory language appears [CAPITALIZED IN BRACKETS] and proposed additions are **underlined in bold**. In addition to the written proposals attached, audio recordings of the meetings are available at the Board’s website at [http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/swf/2019-2020/uci\\_audio/index.html](http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/swf/2019-2020/uci_audio/index.html).

12. Attached hereto as Exhibit A is a true and correct copy of Proposal 133, submitted and addressed during the February 11, 2020 Board meeting, at approximately 2:08 pm. This is a public document, available on the Board’s website at <https://www.adfg.alaska.gov/static/regulations/regprocess/>

[fisheriesboard/pdfs/2019-2020/proposals/133.pdf](https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/133.pdf). The Board voted six to one to approve the proposal, which will now become regulation.

13. In addition to other restrictions, Proposal 133 prohibits commercial harvest of pink, chum, sockeye, and coho salmon stocks; closes a third of the Cook Inlet salmon fishing area (over 500 square miles); closes a large swath of the western side of the Inlet to drift gillnetters for a two-week period at the peak of the coho run; and rescinds Inlet-wide regular fishing periods in August, regardless of whether escapement goals are met or exceeded. That is, even if adequate or excess numbers of salmon are in the river and available to spawn, UCIDA's members will be unable to harvest potentially millions of surplus salmon. The resulting over-escapement of salmon into the river systems will result in smaller future returns. In short, Proposal 133 will seriously and negatively impact commercial salmon fishing in the near term and have continuing negative consequences for years to come.

14. Attached hereto as Exhibits B and C are true and correct copies of Proposals 136 and 137, respectively, both submitted and addressed during the February 11, 2020 Board meeting, at approximately 4:50 pm. These are public documents, available on the Board's website at <https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/136.pdf> and <https://www.adfg.alaska.gov/static/regulations/>

[regprocess/fisheriesboard/pdfs/2019-2020/proposals/137.pdf](https://www.regprocess.com/fisheriesboard/pdfs/2019-2020/proposals/137.pdf), respectively. The Board voted seven to zero to *deny* the proposals.

15. The Board of Fish’s rejection of these reasonable proposals means that millions of salmon will go unharvested. Under current State management, the harvest of pink salmon, the largest stock returning to Cook Inlet, is less than 2% of the return. This foregoes a potential healthy harvest of five to 40 million even-year pink salmon returns,<sup>1</sup> equating to a loss of approximately 35 to 280 million meals entering domestic commerce. Proposals 136 and 137 would have opened two additional fishing periods for three weeks in late-July and early-August to allow for limited commercial fishing for surplus even-year pink salmon. The proposals, if adopted, would have aimed for a commercial yield in the accepted 40–70% exploitation range. The denial of these proposals means tens of millions of excess pink salmon will not be harvested and be kept out of the nation’s food supply. This implicates the Magnuson-Stevens Fishery Conservation and Management Act’s Nation Standard 1, requiring that fisheries be managed to achieve and maintain the “optimum yield” from each fishery.

16. Attached hereto as Exhibit D is a true and correct copy of Proposal 178, submitted and heard during the February 11, 2020 Board meeting, at

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<sup>1</sup> Pink salmon generally return in abundant numbers in even numbered years. In odd numbered years the runs are generally smaller.

approximately 3:50 pm. This is a public document, available on the Board's website at <https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/178.pdf>. The Board voted seven to zero to approve the proposal, which will now become regulation.

17. Proposal 178 will eliminate access to a highly productive 65-square mile fishing area that has been used by the Cook Inlet drift net fleet for over 75 years. The change is grounded not on any identified need or scientific data, but rather is justified by a hypothetical "buyback" program to reduce the number of Upper Cook Inlet setnet permits on the Inlet's Eastside by 45%, with a gear reduction of about 600 nets. The proposal neglects to mention that the program has not yet been developed, does not yet exist, and would need legislative approval before commencement. So even if the set net buyback program never happens, the drift fleet is still restricted from our traditional fishing area.

18. Attached hereto as Exhibit E is a true and correct copy of Proposal 192, submitted and heard during the February 12, 2020 Board meeting, at approximately 8:30 am. This is a public document, available on the Board's website at <https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/192.pdf>. The Board voted four to three to approve the proposal, which will now become regulation.

19. Current State regulations impose what is colloquially known as the “1% rule,” under which the set gillnet fishery in the Kenai, Kasilof, and East Forelands sections of Cook Inlet is closed if less than 1% of the season’s total sockeye harvest has been taken per fishing period for two consecutive fishing periods.<sup>2</sup> The upshot is, once the 1% trigger is met, by either the drift fleet or the set net fleet, the drifters lose 90% of their fishing area and are forced to fish within roughly one mile from shore on the West side of the Inlet. The east side set nets are closed for the season. Thus, all remaining surplus salmon, including about 5 to 40 million pink salmon, enter the rivers virtually unharvested. Proposal 192 *extends the time period in which the 1% rule is in effect*, exacerbating its impacts. The proposal’s proponent, Kenai River Professional Guide Association, expressly stated that the amendments were intended to “err to the side of sport-fish priority,” to the detriment of “commercial fishing.” *See* Ex. E.

20. Attached hereto as Exhibits F and G are true and correct copies of Proposal 124, and Proposal 124 as amended at Record Copy 90, respectively, submitted and heard during the Board meeting on February 12, 2020, at approximately 12:00 pm. These are public documents, available on the Board’s website at <https://www.adfg.alaska.gov/static/regulations/regprocess/>

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<sup>2</sup> A “fishing period” is a time period open to commercial fishing as measured by a 24-hour calendar day.

[fisheriesboard/pdfs/2019-2020/proposals/124.pdf](https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/uci/rcs/rc090_ADF&G_for_Payton_substitute_language_prop_124.pdf) and [https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/uci/rcs/rc090\\_ADF&G\\_for\\_Payton\\_substitute\\_language\\_prop\\_124.pdf](https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/uci/rcs/rc090_ADF&G_for_Payton_substitute_language_prop_124.pdf), respectively. The Board voted four to three to approve the amended proposal, which will now become regulation.

21. Proposal 124, originally drafted and proposed by the Alaska Outdoor Council, an outdoor recreation advocacy group, sought to add, among other changes, regulatory language to “minimize” the harvest of North-bound salmon “in order to provide sport and guided sport fisherman . . . a reasonable opportunity to harvest these salmon stocks over the entire run.” *See* Ex. F. Perhaps recognizing the egregiousness of this obvious allocation scheme, ADF&G the next day introduced “[s]ubstitute language” changing “sport and guided sport fisherman” to “all users” before ultimately approving the proposal. *See* Ex. G. Regardless of the amended language, the effect is the same. The new rule represents pure allocation of excess harvest away from the commercial fishery to the powerful state sport fishing industry.

22. Attached hereto as Exhibit H is a true and correct copy of Proposal 234, submitted and heard during the Board meeting on February 13, 2020, at approximately 1:20 pm. This is a public document, available on the Board’s website at <https://www.adfg.alaska.gov/static/regulations/regprocess/>

fisheriesboard/pdfs/2019-2020/uci/rcs/rc132\_ADF&G\_for\_Payton\_Substitute\_language\_prop\_234.pdf. The Board voted five to two to approve the amended proposal, which will now become regulation.

23. Proposal 234 will create a new “dip net”<sup>3</sup> salmon fishery, available to only Alaska residents. Somewhat ironically, the Board justified its approval based on the “abundance” of chum, pink, and sockeye salmon. Why the Board did not take the abundance of these species into account in ruling on the several proposals that would have allowed harvest by the *commercial* fishery for these species is unclear. That the Board would create a brand new recreational fishery after repeatedly refusing even to maintain the current allowances for the commercial fishery is illogical and inequitable.

24. Attached hereto as Exhibit I is a true and correct copy of Proposal 88 as modified at Record Copy 89, as heard by the Board on February 11, 2020. This is a public document, available on the Board’s website at [https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/uci/rcs/rc089\\_KSRA\\_sub\\_language\\_prop\\_89.pdf](https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/uci/rcs/rc089_KSRA_sub_language_prop_89.pdf). The Board voted six to one to approve the amended proposal, which will now become regulation.

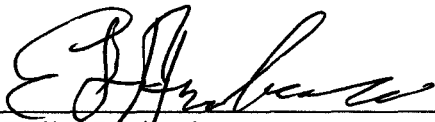
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<sup>3</sup> Dip nets are handheld nets used to capture fish in Alaska’s resident-only personal use salmon fisheries.

25. Proposal 88 as modified raises the in-river goal for sockeye in the Kenai River by 100,000 fish on both the lower end and the upper end of the goal range. This will raise the average in-river goal range from 1.1 million to 1.4 million. This escapement has nothing to do with biological needs (the biological based escapement goal is 600,000 to 800,000 sockeye), and the in-river goal has no scientific basis. It is just an allocation of hundreds of thousands of salmon away from the commercial harvest and will significantly reduce commercial fishing opportunities and future salmon runs.

I hereby declare under penalty of perjury of the law of the United States of America that the foregoing information is true and correct to the best of my knowledge and belief.

**DATED:** February 19, 2020

  
Erik Huebsch



# **EXHIBIT A**

**PROPOSAL 133**

**5 AAC 21.353. Central District Drift Gillnet Fishery Management Plan.**

Amend the *Central District Drift Gillnet Fishery Management Plan* with additional mandatory area restrictions to regular fishing periods, as follows:

The Changes to the existing plan are as follows:

(A)(iv) Drift Gillnet Area 1; [NOTWITHSTANDING THE PROVISIONS OF SUBPARAGRAPH (d)(2)(A) OF THIS SECTION, ONE REGULAR 12-HOUR FISHING PERIOD FROM JULY 16 THROUGH JULY 31 MAY OCCUR IN THE CENTRAL DISTRICT INSTEAD OF IN DRIFT GILLNET AREA 1;]

(e) From August 1 through August 15, [THERE ARE NO MANDATORY AREA RESTRICTIONS TO REGULAR FISHING PERIODS]

**(1) fishing during both regular 12 hour fishing periods per week will be restricted to one or more of the following sections and areas: (A) Expanded Kenai Section: (B) Expanded Kasilof Section (C) Anchor Point Section (D) Drift Gillnet Area 1,** except that if the Upper Subdistrict set gillnet fishery is closed under 5 AAC 21.310(b)(2)(C)9iii), or the department determines that less than one percent of the seasons total drift gillnet sockeye salmon harvest has been taken per fishing period for two consecutive fishing periods in the drift gillnet fishery, regular fishing periods will be restricted to Drift Gillnet Area 3 and 4. [IN THIS SUBSECTION "FISHING PERIOD" MEANS A TIME PERIOD OPEN TO COMMERCIAL FISHING AS MEASURED BY A 24-HOUR CALENDAR DAY FROM 12:01 AM UNTIL 11:59 P.M.]

**(2) additional fishing time under this subsection is allowed only in one or more of the following sections: (A) Expanded Kenai Section: (B) Expanded Kasilof Section: (C) Anchor Point Section.**

(f) From August 16 until closed by emergency order, Drift Gillnet Areas 3 and 4 are open for fishing during regular fishing periods.

**What is the issue you would like the board to address and why?** Amend the *Central District Drift Gillnet Fishery Management Plan* in order to increase passage of salmon into the Northern District. This proposal would eliminate the option for a District wide opening during the July 16 through July 31 period and would further replace District wide openings from August 1 through August 15 with more restricted fishing opportunities.

**PROPOSED BY:** Mat-Su Borough Fish and Wildlife Commission/Mike Wood (HQ-F19-046)  
\*\*\*\*\*

# **EXHIBIT B**

**PROPOSAL 136**

**5 AAC 21.354. Cook Inlet Pink Salmon Management Plan.**

Open two additional inlet-wide fishing periods per week between July 24 and August 15 in even-numbered years, as follows:

5 AAC 21.354. Cook Inlet Pink Salmon Management Plan. (a) The purpose of this management plan is to allow for harvest of surplus pink salmon in the Upper Subdistrict for set gillnet and drift gillnet gear. Notwithstanding 5 AAC 21.310(B)(2)(C)(iii), from **July 24** [AUGUST 11] through August 15, the commissioner **shall** [MAY], by emergency order, open a commercial pink salmon fishery in an even-numbered year for [UP TO] two **additional** [REGULAR] 12-hour fishing periods **inlet-wide per week** if the commissioner determines that sockeye salmon escapement goals in the Kenai **or** [AND] Kasilof Rivers **will be** [ARE BEING] achieved and coho salmon run strength is sufficient to withstand additional harvest.

**What is the issue you would like the board to address and why?** By July 20-22 in even numbered years, there are multiple surpluses of pink salmon stocks available.

**PROPOSED BY:** United Cook Inlet Drift Association

(HQ-F19-080)

\*\*\*\*\*

# **EXHIBIT C**

**PROPOSAL 137**

**5 AAC 21.354. Cook Inlet Pink Salmon Management Plan.**

Repeal and readopt the *Cook Inlet Pink Salmon Management Plan* to manage for commercial priority and 40–70% exploitation rate, as follows:

Delete 5 AAC 21.354 [(a) (b) (c) (1) (2)] Replace with: **(a) The department shall manage the Cook Inlet pink salmon stocks primarily for commercial uses to provide an economic yield from the harvest of these salmon resources based on abundance. The department should strive for a harvest rate in the accepted 40% to 70% range for exploitation.**

**What is the issue you would like the board to address and why?** The current pink salmon management plan does not allow the managers the flexibility to manage for harvesting the pink salmon harvestable surplus. Literally tens of millions of pinks are not allowed to be harvested under the current management plans. Under the current management plans less than 2% of the pink salmon runs are harvested. ADF&G data shows the Cook Inlet has had even year returns of up to 40 million pinks. That is a lot of food and economic resource not being utilized.

**PROPOSED BY:** Central Peninsula Fish and Game Advisory Committee (HQ-F19-097)

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# **EXHIBIT D**

## **PROPOSAL 178**

### **5 AAC 21.310. Fishing seasons.**

Permanently close drift gillnetting in the Upper Subdistrict within one mile of mean high tide north of the Kenai River and within one and one-half miles of mean high tide south of the Kenai River, as follows:

A permanent boundary line from one and one-half miles of mean high tide mark of the Kenai Peninsula Shoreline in the area of the Kenai and Kasilof sections of the Upper Subdistrict south of the Kenai River, and a one mile of the mean high tide mark of the Kenai Peninsula shoreline in that area of the Kenai and East Forelands Sections of the Upper Subdistrict north of the Kenai River will protect any open waters that may be created by a fleet reduction.

### **5 AAC 21.310. Fishing seasons**

3) Central District, for drift gillnet: from the third Monday in June or June 19, whichever is later, until closed by emergency order, except that fishing with drift gillnets may not occur within

(A) two miles of the mean high tide mark on the eastern side of the Upper Sub-district until those locations have opened for fishing with set gillnets;

(B) one and one-half miles of the mean high tide mark of the Kenai Peninsula shoreline  
(i) in that area of the Kenai and Kasilof Sections of the Upper Subdistrict south of the Kenai River, [IF FISHING WITH SET GILLNETS IN THAT AREA IS CLOSED] **\*Remove\***

(ii) the Anchor Point Section, if fishing with drift gillnets is open in the Anchor Point Section under 5 AAC 21.353;

(C) one mile of the mean high tide mark of the Kenai Peninsula shoreline in that area of the Kenai and East Forelands Sections of the Upper Subdistrict north of the Kenai River, [IF FISHING WITH SET GILL NETS IN THAT AREA IS CLOSED] **\*Remove\***

**What is the issue you would like the board to address and why?** Eastside setnetters are actively working with the Alaska Legislature for a voluntary fleet reduction through a fairly compensated buyback of permits and locations. We are striving to create a more economically viable and sustainable set net fishery, by reducing the number of Upper Cook Inlet setnet permits on the Eastside by 45% and with a gear reduction of about 600 nets. With permanently closed waters we will allow more fish for in-river users while providing opportunity for harvest by user groups.

Current regulations allow a drift gillnet boat to come within 600 feet of a setnet if the setnets are open to fishing. There is a one and one-half mile boundary line in the Kenai and Kasilof section south of the Kenai River and a one mile boundary line in the Kenai and East Forelands Sections north of the Kenai river that Drift gillnet boats must remain outside of ONLY if fishing with the setnets is closed.

With a 45% permit reduction there will be more open water that a drift gillnetter could potentially have room to come in and fish while set nets are open. A migration of drifters inside the one and one-half mile boundary line would defeat the effort Eastside setnetters have made to allow more sockeye and kings to get to the Kenai and Kasilof Rivers.

**Exhibit D - 1**

**Exhibit H**



**PROPOSED BY:** Ken Coleman

(EF-F19-081)

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**Exhibit D - 2**

**Exhibit H**

# **EXHIBIT E**

**PROPOSAL 192**

**5 AAC 21.310. Fishing seasons.**

Amend the one percent rule in the Upper Subdistrict set gillnet fishery to apply starting July 31 instead of August 7, as follows:

We recommend moving the date back to July 31 to read:

5 AAC 21.310 (2) (C.) (iii.) Kenai, Kasilof, and East Forelands Sections: in the combined Kenai and East Forelands Sections, and separately in the Kasilof Section, the season will close August 15, unless closed by emergency order after **July 31**, if the department determines that less than one percent of the season’s total sockeye harvest has been taken per fishing period for two consecutive fishing periods in the combined Kenai and East Forelands Sections, or separately in the Kasilof Section; from August 11 through August 15, the fishery is open for regular fishing periods only; for purposes of this sub-subparagraph, “fishing period” means a time period open to commercial fishing as measured by a 24-hour calendar day from 12:01 a.m. until 11:59 p.m.;

**What is the issue you would like the board to address and why?** During the last Board cycle, the implementation date for the Upper Cook Inlet 1% rule applying to the fishing seasons for Upper Cook Inlet Kenai, Kasilof & East Forelands sections was changed from August 1 to August 7.

This has the potential for additional commercial fishing periods after the sockeye numbers have dropped, signifying the end of the run. As a result, the commercial fishery has extended opportunity to harvest Kenai River bound coho salmon that is has been prioritized for sport fish per 5 AAC 57.170.

Kenai coho are highly exploited and we would like to see the board err to the side of sport-fish priority as laid out in the management plan.

**PROPOSED BY:** Kenai River Professional Guide Association (HQ-F19-071)

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# **EXHIBIT F**

**PROPOSAL 124**

**5 AAC 21.353. Central District Drift Gillnet Fishery Management Plan.**

Amend the purpose of the *Central District Drift Gillnet Fishery Management Plan* to include inriver users, as follows:

(a) The purpose of this management plan is to ensure adequate escapement and harvestable surplus of salmon into the Northern District drainages and to provide management guidelines to the department. The department shall manage the commercial drift gillnet fishery to minimize the harvest of

- (1) Northern District bound salmon in order to provide all inriver users
- (2) and Kenai River coho salmon in order to provide sport and guided sport fishermen
- (3) a reasonable opportunity to harvest these salmon stocks over the entire run, as measured by the frequency of inriver restrictions. The department shall manage the Central District commercial drift gillnet fishery as described in this section.

**What is the issue you would like the board to address and why?** Inadequate allocation of harvestable salmon for sport, personal use, and guided sport in the Susitna River drainage. The population of inriver anglers in the Mat-Su Borough has grown along with the census figure of over 100,000 local residents. The increased demand for harvestable salmon is not currently being met.

**PROPOSED BY:** Alaska Outdoor Council

(EF-F19-073)

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# **EXHIBIT G**

**Submitted at the request of Board Member Payton by the Alaska Department of Fish and Game**

February 11, 2020

Substitute language for proposal 124:

**5 AAC 21.353 Central District Drift Gillnet Fishery Management Plan**

5 AAC 21.353(a) is amended to read:

(a) The purpose of this management plan is to ensure adequate escapement **and a harvestable surplus** of salmon into the Northern District drainages and to provide management guidelines to the department. The department shall manage the commercial drift gillnet fishery to minimize the harvest of Northern District **salmon** and Kenai River coho salmon in order to provide **all users** [SPORT AND GUIDED SPORT FISHERMEN] a reasonable opportunity to harvest these salmon stocks over the entire run, as measured by the frequency of inriver restrictions. The department shall manage the Central District commercial drift gillnet fishery as described in this section.

# **EXHIBIT H**



RC 132

**Submitted at the request of Board Member Israel Payton by the Alaska  
Department of Fish and Game**

February 13, 2020

Substitute language for proposal 234:

5 AAC 77.540 is amended to by adding a new subsection to read:

**(h) Salmon may be taken by dip net in the Susitna River, only as follows:**

**(1) from July 10 through July 31, Wednesday 6:00 am to 11:00 pm, Saturday 6:00 a.m. to 11:00 p.m.;**

**(2) between ADF&G regulatory markers located approximately one mile downstream from Susitna Station downstream to ADF&G regulatory markers located near the northern tip of Bell Island/Alexander Creek cutoff;**

**(3) the annual limit, as specified in 5 AAC 77.525, except that no king salmon may be retained, and any king salmon caught must not be removed from the water and must be returned to the water immediately; a northern pike caught may not be released back into the water alive as specified in 5 AAC 61.110(a)(8);**

**(4) a permit holder for this fishery shall report to the department as specified in permit conditions; the department may alter, time, area, or close the fishery based on salmon abundance;**

**(5) if the department projects that both sockeye and coho abundance will be above the upper end of all Susitna River escapement goals for sockeye and coho salmon, the commissioner may extend, by emergency order, the personal use fishery through August 31.**

Exhibit H - 1

Exhibit H

# **EXHIBIT I**

RC 89

## Substitute Language for Proposal 88

Submitted by: Kenai River Sportfishing Association

### 5 AAC 21.360. Kenai Late-Run Sockeye Salmon Management Plan

(a) The department shall manage the Kenai River late-run sockeye salmon stocks primarily for commercial uses based on abundance. The department shall also manage the commercial fisheries to minimize the harvest of Northern District coho, late-run Kenai River king, and Kenai River coho salmon stocks to provide personal use, sport, and guided sport fishermen with a reasonable opportunity to harvest salmon resources.

(b) The Kenai River late-run sockeye salmon commercial, sport, and personal use fisheries shall be managed to

(1) meet the sustainable escapement goal (SEG) range of [700,000 - 1,200,000] 750,000 – 1,300,000 late-run sockeye salmon;

(2) achieve inriver goals as established by the board and measured at the Kenai River sonar counter located at river mile 19; and

(3) distribute the escapement of sockeye salmon evenly within the (SEG) range, in proportion to the size of the run.

(c) Based on preseason forecasts and inseason evaluations of the total Kenai River late-run sockeye salmon return during the fishing season, the run will be managed as follows:

(1) at run strengths of less than 2,300,000 sockeye salmon,

(A) the department shall manage for an inriver goal range of [900,000 - 1,100,000] 1,000,000 – 1,200,000 sockeye salmon past the sonar counter at river mile 19; and

(B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, unless the department determines that the minimum inriver goal will not be met, at which time the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 24 hours per week, except as provided in 5 AAC 21.365;

(2) at run strengths of 2,300,000 - 4,600,000 sockeye salmon,

(A) the department shall manage for an inriver goal range of [1,000,000 - 1,300,000] 1,100,000 – 1,400,000 sockeye salmon past the sonar counter at river mile 19;

(B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, or until the department makes a determination of run strength, whichever occurs first; if the department determines that the minimum inriver goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 51 hours per week, except as provided in 5 AAC 21.365; and

(C) the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday and for one continuous 24-hour period per week beginning between 7:00 p.m. Monday and 7:00 a.m. Wednesday;

(3) at run strengths greater than 4,600,000 sockeye salmon,

(A) the department shall manage for an inriver goal range of [1,100,000 - 1,500,000] 1,200,000 – 1,600,000 sockeye salmon past the sonar counter at river mile 19;

(B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, or until the department makes a determination of run strength, whichever occurs first; if the department determines that the minimum inriver goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 84 hours per week, except as provided in 5 AAC 21.365; and

(C) the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week, beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday.

(d) The sonar count levels established in this section may be lowered by the board if noncommercial fishing, after consideration of mitigation efforts, results in a net loss of riparian habitat on the Kenai River. The department will, to the extent practicable, conduct habitat assessments on a schedule that conforms to the Board of Fisheries (board) triennial meeting cycle. If the assessments demonstrate a net loss of riparian habitat caused by noncommercial fishermen, the department is requested to report those findings to the board and submit proposals to the board for appropriate modification of the Kenai River late-run sockeye salmon inriver goal.

(e) Repealed 6/11/2005.

(f) Repealed 6/11/2005.

(g) Subject to the requirement of achieving the lower end of the sustainable escapement goal, the department shall provide for a personal use dip net fishery in the lower Kenai River as specified in 5 AAC 77.540.

(h) Subject to the requirement of achieving the lower end of the sustainable escapement goal, the department shall manage the sport fishery on the Kenai River, except that portion of the Kenai River from its confluence with the Russian River to an ADF&G regulatory marker located 1,800 yards downstream, as follows:

(1) fishing will occur seven days per week, 24 hours per day;

(2) the bag and possession limit for sockeye salmon is three per day, with six in possession, in the sport fishery, unless the department determines that the abundance of late-run sockeye salmon exceeds 2,300,000 fish, at which time the commissioner may, by emergency order, increase the bag and possession limit as the commissioner determines to be appropriate; and

(3) if the projected inriver run of sockeye salmon above the Kenai River sonar counter located at river mile 19 is less than [900,000] 1,000,000 fish and the inriver sport fishery harvest is projected to result in an escapement below the lower end of the sustainable escapement goal, the commissioner may, by emergency order, decrease the bag and possession limit, as the commissioner determines to be appropriate, for sockeye salmon in the sport fishery above the Kenai River sonar counter located at river mile 19.

(i) For the purposes of this section, "week" means a calendar week, a period of time beginning at 12:00:01 a.m. Sunday and ending at 12:00 midnight the following Saturday.

(j) The commissioner may depart from the provisions of the management plan under this section as provided in 5 AAC 21.363(e).

# EXHIBIT I



## **Advisory Announcement**

*For Immediate Release: November 4, 2020*

**CONTACT: Brian Marston**  
**UCI Area Management Biologist**  
**(907) 262-9368**

### **2020 Upper Cook Inlet Commercial Salmon Fishery Season Summary**

The 2020 Upper Cook Inlet (UCI) commercial salmon fishery harvest and value was historically low (Table 1). The commercial harvest of approximately 1.2 million salmon was 65% less than the recent 10-year average harvest of 3.2 million fish. The estimated exvessel value of the 2020 harvest of all salmon species is approximately \$5.2 million, the worst exvessel value on record, and roughly 81% less than the previous 10-year average annual exvessel value of \$27.0 million. While all five species of Pacific salmon are present in UCI, sockeye salmon are the most valuable accounting for nearly 93% of the total exvessel value during the past 20 years. The 2020 total run preseason forecast of sockeye salmon was 4.3 million fish, and the estimate for the actual inseason run was 4.3 million fish.

Salmon escapements to UCI streams in 2020 were mostly above or within established goal ranges for sockeye, chum and coho salmon, but were poor for Chinook salmon. Sockeye salmon escapement goals were exceeded in three systems (Kenai River late run, Kasilof River, Fish Creek), met at two systems (Judd Lake and Packers Lake), and below at one system (Larson Lake). Run timing of sockeye salmon into Cook Inlet in 2020, measured with the Offshore Test Fishery (OTF), was estimated to be at least two days late. In 2020, both the lower end of the Kenai River early run and late run Chinook salmon Optimal Escapement Goals (OEGs) were not achieved. Of the three southern Chinook salmon systems (Anchor River, Deep Creek, and Ninilchik River), only the Ninilchik River Chinook SEG was achieved. In the north, the Deshka and Little Susitna rivers Chinook salmon weir count Sustainable Escapement Goals (SEGs) were achieved. Additionally, the recently established Chinook salmon stock complex escapement goals for the Yentna and Talkeetna stocks were not met, but the stock complex escapement goal for Eastside Susitna was met. For coho salmon, the Little Susitna River was within its escapement goal range, while the Deshka River projected to meet its escapement goal at the end of the season, but the weir was pulled early. At Fish Creek, the coho count was within its goal range. Finally, the chum salmon escapement goal was met in the Chinitna Bay tributaries.

#### **SOCKEYE SALMON**

##### ***2020 Run and Fishery Summary***

The 2020 total run of sockeye salmon to UCI, which includes estimates of fishery harvests for commercial, sport, personal use, educational, and subsistence, as well as escapement, of approximately 4.4 million fish was 93,000 fish, or 2% more than the preseason forecast (Table 2). Sockeye salmon run abundance to the Kenai River was higher than forecasted by approximately 321,000 fish and to the Kasilof River by 98,000 fish. The number of sockeye salmon returning to

Fish Creek, however, was 47,000 less than forecasted, and in the Susitna River and all other systems (minor systems) inseason abundance was 23% to 39% less than forecasted for 2020.

In 2020, the peak day of sockeye salmon passage in the Kenai River occurred on August 17, with a count of 134,874 fish. This was the highest daily sockeye salmon passage recorded in August at the Kenai River sonar, and the latest peak of sockeye salmon movement recorded. During the previous 10 years, the average date where 50% of the yearly sonar passage occurred in the Kenai River was July 25. In 2020, 50% of the total passage did not occur until August 6 and approximately 61% of the run arrived in August. An exceptional abundance of pink salmon (see pink salmon section) also occurred during the 2020 sockeye salmon run and the sonar count data is currently being analyzed to determine if the apportionment of pink and sockeye salmon from the sonar count can be improved. Weak Kenai River Chinook salmon runs resulted in paired restrictive actions in the sport fishery and the eastside set gillnet (ESSN) fishery of the Upper Subdistrict. For the ESSN fishery, this meant less fishing time than what is allowed as per the sockeye salmon management plans, and gear restriction options were also applied. The final passage estimate of 1,814,252 sockeye salmon exceeded the upper end of the Kenai River sockeye salmon inriver goal range (1,000,000–1,200,000) by more than 600,000 fish (Table 3). Given typical sport fishery harvests at this inriver abundance level, the SEG (750,000–1,300,000) was also likely exceeded. The Kasilof River sockeye salmon sonar count of 545,654 fish exceeded the upper bound of the Kasilof River Biological Escapement Goal (BEG) of 140,000–320,000 fish and was the largest recorded sockeye salmon escapement recorded for the Kasilof River sonar project (38 years). The passage midpoint for Kasilof River occurred on July 19, which was three days later than the midpoint from the previous 10 years and the peak daily passage of 17,472 occurred on July 28.

The 2020 UCI commercial harvest of 669,751 sockeye salmon was approximately 74% less than the 2010–2019 average annual harvest of 2.6 million fish. The 2020 sockeye salmon commercial harvest was the second smallest harvest in the past 50 years (1970–2019). Sockeye salmon prices varied during the season but based on an estimated average price of \$1.24 per pound, the total exvessel value of the sockeye salmon harvest was approximately \$4.2 million, representing 77% of the total 2020 exvessel value of all salmon in UCI.

### ***Upper Subdistrict Set Gillnet and Central District Drift Gillnet Fisheries***

The 2020 UCI preseason forecast included a total run of approximately 4.3 million sockeye salmon (Table 2), including a total harvest estimate (sport, personal use and commercial) of 2.3 million fish, and a commercial fisheries harvest of approximately 1.7 million fish.

The sockeye salmon run forecast to the Kenai River in 2020 was 2.2 million fish, which meant management of the drift gillnet and ESSN fisheries fell into the provisions of the lowest run size tier (< 2.3 million fish). In this run size tier, from July 8 through August 10, the ESSN fishery is open for the regulatory Monday and Thursday 12-hour fishing periods, with up to 51 additional fishing hours per week. However, on Monday, June 15, 2020, the department issued EO No. 2-KS-1-22-20 restricting the Chinook salmon sport fishery in the Kenai River to no retention of fish over 34 inches in length beginning July 1, 2020. In response, EO 2S-04-20 was issued on June 22, which modified 5AAC 21.320(a)(2)(E) Weekly Fishing Periods with set gillnets in all waters of the Upper Subdistrict. In the Upper Subdistrict of the Central District (Figure 1), salmon could be taken only during fishing periods established by EO from June 20 through July 31, 2020. In 2020, the paired restrictions were enacted when the sport fishery was restricted to no retention of

Chinook salmon over 34 inches in length. Commercial fishing periods were restricted to no more than 36 hours per week, with a 36-hour continuous closure per week beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday. Subsequently, on July 13, The department issued a second EO No. 2-KS-1-34-20 restricting the Chinook salmon sport fishery in the Kenai River to catch and release only, and as such the ESSN fishery was further restricted to no more than 24 hours per week, with a 36-hour continuous closure per week beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday. In addition to all fishing time coming via EO only in the Upper Subdistrict set gillnet fishery, beginning in 2020, the Alaska Board of Fisheries also mandated the use of one of two gear restriction options that limit gillnet depth or length during all Upper Subdistrict set gillnet fishing periods, when the Kenai River Chinook salmon sport fishery is restricted. These mandatory gear restrictions were implemented from the beginning of the season through July 31 in the entire Upper Subdistrict set gillnet fishery. The specific gear restriction option that ADF&G chose to implement was identified in each UCI Commercial Fishing Announcement. Of the two potential gear restriction options, the more restrictive provision (limiting gillnet gear by two-thirds) was used ten days, and the lesser restriction (limiting gillnet gear by one-third) was used three days.

From the beginning of the ESSN fishing season on June 23 through August 15, the commercial fishing management strategy was largely predicated upon allowing harvest of sockeye salmon while closely monitoring late-run Chinook salmon abundance in the Kenai River. The Kasilof Section (statistical areas 244-31, 244-22 and 244-21; Figure 2) set gillnet fishery opened on Tuesday, June 23. On July 2, the North Kalifornsky Beach (NKB) statistical area (244-32) opened with additional restrictions specific to the NKB stat area, including that from July 1 to the opening of the Kenai and East Foreland sections season, the NKB stat area can be open within 600 feet of the mean high tide mark using set gillnets that are no greater than 29 meshes in depth, and with mesh sizes no greater than four and three quarters inches. In 2020, the first day of fishing for the Kenai and East Foreland sections concurrently, occurred on Thursday, July 9

The Kasilof River sockeye salmon run timing appeared average in late June and early July. Consequently, nine fishing periods were provided from June 23 to July 8, of which five days included the restricted openings of the NKB section. In total, from June 23 through August 15, the Kasilof Section set gillnet fishery was open on 16 different days. From July 9 through August 15, the Kenai and East Foreland sections were open on five different days. Three fishing opportunities were provided in the Kasilof Section set gillnet fishery within 600 feet of shore (July 7, July 16, and July 21). The Kasilof River Special Harvest Area was not opened in 2020. On July 22, the department issued Emergency Order (EO) 2-KS-1-41-20 closing the Kenai River drainage to fishing for Chinook salmon effective 12:01 a.m. Friday, July 24, 2020. In compliance with the *Kenai River Late-Run King Salmon Management Plan*, the Upper Subdistrict set gillnet fishery was also closed beginning July 23.

On July 24, 2020, the department made a formal inseason estimate of the total sockeye salmon run to date, including an estimate of the run yet to come. Based on OTF data, the 2020 sockeye salmon run was expected to be two to five days late, and the Kenai River sockeye salmon total run would remain under 2.3 million fish. Based on this inseason projection, management of the ESSN and Central District drift gillnet fisheries would not change and continued in the lower tier provisions for Kenai River sockeye salmon run sizes less than 2.3 million fish. However, because Kenai River late-run Chinook salmon abundance remained low and the Kenai River sport fishery was closed on July 24, no further fishing periods in the Upper Subdistrict were allowed.



On August 1, with paired restrictions remaining in effect, the ESSN fishery remained closed for the season. Despite these time, area, and gear restrictions as well as some full period closures, the final count of 11,499 Kenai River late-run Chinook salmon failed to meet the lower end of the SEG.

The drift gillnet fishery opened on June 22 for the 2020 season. The drift gillnet fishery was open for district-wide fishing periods from the beginning of the season through July 6. Additional fishing opportunity was provided in only the Kasilof Section (Figure 3) on July 7 for 13 hours, and July 8 for 8 hours. From July 9 through July 15, both regular fishing periods were limited to Drift Gillnet Area 1 and the Expanded Kenai and Expanded Kasilof sections (Figures 3 and 4). Additional fishing time was extended for 3 hours on the July 9, and a 12 hour period was opened on the July 15 in the Expanded Kenai and Expanded Kasilof sections. From July 16 through July 31, fishing during the regular fishing periods was restricted to the Expanded Kenai Section and the Expanded Kasilof Section. Additional fishing time was allowed only on July 20 for 3 hours, and on July 22 for a 12 hour period in the Expanded Sections and the Anchor Point Section. Drift gillnet fishing between August 1 and August 15 remained restricted with optional closures of Area 1 and was allowed only in the Expanded Sections for all 4 Monday and Thursday regulatory periods.

An aerial survey of Chinitna River/Clearwater Creek was conducted on August 11, 2020. This survey produced an estimate of approximately 3,970 chum salmon within these streams, which was within the SEG range of 3,500–8,000 fish. Therefore, Chinitna Bay was opened to set and drift gillnetting on Tuesdays and Fridays beginning on August 18. Regularly scheduled Monday and Thursday drift gillnet fishing periods for Drift Gillnet Areas 3 and 4 (Figure 5) began August 17.

From August 17 through the remainder of the season, all drift and set gillnet commercial fisheries in UCI followed the regulatory periods of Monday and Thursday, along with the above openings in Chinitna Bay. All UCI commercial fisheries were closed by EO after October 2 for the 2020 season.

#### ***Upper Subdistrict Set Gillnet Harvest, 2020***

The total 2020 sockeye salmon harvest in the ESSN fisheries was 282,177 fish. From June 23 through July 22 the Kasilof Section was open on 16 different days, harvesting approximately 177,209 sockeye salmon, which was 61% less than the previous 10-year (excluding 2012, due to extensive fishery closures that year) average of 460,100 fish. From July 8 through August 15, the Kenai and East Foreland sections were open on five different days, producing a total sockeye salmon harvest of 104,968 fish. This was 74% less than the previous 10-year (excluding 2012) average annual sockeye salmon harvest of 397,000 fish for those sections.

#### ***Drift Gillnet Harvest, 2020***

From June 19 through August 14, the drift gillnet fleet fished a total of 26 days as follows: five days in the regular Kasilof Section, six days in the Expanded Corridors, eight days in the Expanded Corridors and Anchor Point sections, two days in Drift Gillnet Area 1, and five days in all of the Central District. Beginning on Monday, August 17, all Monday/Thursday regulatory drift gillnet fishing periods were restricted to Drift Gillnet Areas 3 and 4. The total UCI drift gillnet harvest in 2020 was approximately 273,067 sockeye salmon, which was approximately 82% less than the previous 10-year average harvest of 1.5 million fish. The peak day of harvest for the drift gillnet

fleet occurred on Thursday, July 16, where 237 vessels harvested approximately 42,863 sockeye salmon, or 181 fish per boat. The previous 10-year average peak day harvest per boat was 919 fish.

A comparative examination of the 2020 sockeye salmon harvest between the ESSN and drift gillnet fisheries showed the drift gillnet fishery proportion of the harvest was less than the previous 10-year average, excluding 2012. The 2020 drift gillnet harvest of 273,067 sockeye salmon was 49% of the total harvest between the two gear types, compared to the previous 10-year average of 56%. The ESSN fishery harvested approximately 282,177 fish, or 51% of the sockeye salmon harvest of the two groups, compared to their previous 10-year average of 44%.

### ***Western Subdistrict***

The Western Subdistrict (Figure 1) set gillnet fishery opened for regulatory fishing periods on Thursday, June 18. This fishery primarily harvests sockeye salmon returning to the Crescent River. In 2020, when Crescent River sockeye salmon run indexes warranted an EO was issued on July 12 opening that portion of the Western Subdistrict south of the latitude of Redoubt Point for an extra day; from 6:00 a.m. until 10:00 p.m. on Mondays, Thursdays, and Saturdays each week from July 13 through August 8. In 2020, approximately 68,462 sockeye salmon were harvested by set gillnetters in the Western Subdistrict. This was 60% greater than the average annual harvest of approximately 42,685 fish during the previous 10 years.

### ***Kustatan Subdistrict***

The Kustatan Subdistrict includes those waters from the Drift River oil terminal to the Northern District boundary near the West Foreland (Figure 1). From 1993 to 2019, approximately nine permit holders per year reported harvest from this area. In 2020, 13 permit holders reported harvest. Most participation and harvest (more than 92% of the harvest) typically comes from the Big River sockeye salmon fishery, which is an early season fishery limited to one net per permit holder, 3 days per week, and occurs from June 1–24. Approximately 7,714 sockeye salmon were harvested in the Kustatan Subdistrict in 2020, of which 1,315 were harvested during the Big River fishery. The 2020 sockeye salmon harvest for Kustatan Subdistrict was more than double the average annual harvest of 3,193 fish during the previous 10 years.

### ***Kalgin Island Subdistrict***

The Kalgin Island Subdistrict (Figure 1) opened for regular fishing periods beginning June 25, 2020, except for the west side of Kalgin Island which was open for commercial fishing on Mondays, Wednesdays, and Fridays from June 1 through June 24 as part of the Big River sockeye salmon fishery. In 2020, approximately 35,842 sockeye salmon were harvested from the Kalgin Island Subdistrict, with nearly 5,970 (17%) of those fish taken during the Big River sockeye salmon fishery. The average annual sockeye salmon harvest on Kalgin Island during the previous 10 years was approximately 52,991 fish, with roughly 11,500 of those fish harvested during the early season Big River fishery. A mid-season review of the video deployed at Packers Creek for monitoring sockeye salmon escapement into Packers Lake did not support any additional fishing periods beyond the Monday and Thursday regular periods in the Kalgin Island Subdistrict. The final count available for Packers Lake through August 15 was 15,903 which achieved the lower end of the Packers Lake sockeye salmon escapement goal range.

### ***Northern District***

In 2020, approximately 46,045 sockeye salmon were harvested in the Northern District (Figure 1). This harvest was about equal to the 2010–2019 average annual harvest of 44,510 sockeye salmon,

yet approximately 16% less than the 1985–2019 average of nearly 76,000 fish. As in past years, restrictions to the Northern District salmon fishery that restricted the number of nets allowed were implemented from July 20 to August 6, to conserve Susitna River sockeye salmon.

## **COHO SALMON**

### ***2020 Run and Fishery Summary***

The 2020 harvest estimate of approximately 133,761 coho salmon in all commercial fisheries in UCI was 28% less than the previous 10-year (2010–2019) average annual harvest of approximately 186,000 fish (Table 1). The 2020 drift gillnet harvest of 47,689 coho salmon was 56% less than the previous 10-year average of approximately 109,000 fish. However, the Northern District set gillnet harvest of 51,000 coho salmon was the third largest harvest since 2000 and was approximately 27% greater than the 40,000 fish annual average harvest from the previous 10 years. The increase in Northern District set gillnet coho harvest may be due to less overall fishing time in the drift gillnet fishery, where management actions kept the drift gillnet fleet in the Expanded Corridors to target Kenai and Kasilof sockeye salmon and avoid Northern District coho salmon in July–August.

In UCI, there are four coho salmon systems with escapement goals: Fish Creek and the Little Susitna and Deshka rivers have weirs, while McRoberts Creek is assessed with foot surveys. The Little Susitna River coho salmon SEG of 9,200–17,700 fish was updated in 2020. Coho salmon escapement was counted at the Little Susitna weir from July 17 through August 31, 2020. The preliminary coho salmon escapement estimate in the Little Susitna River was 9,931. Due to budget constraints in 2020 the Deshka River weir was pulled early on August 13, but a total of 5,368 fish were counted by that date. Based on average run timing the SEG (10,200–24,000) was likely achieved on Deshka River. The Fish Creek coho salmon SEG is 1,200–6,100 fish. A preliminary estimate of 4,559 coho salmon were counted from July 25 to August 14 indicating the SEG was achieved. Finally, there is a coho salmon foot survey and SEG of 250–700 fish for McRoberts Creek, which drains into Jim Creek of the Knik River drainage. In 2020, the McRoberts Creek foot survey produced a count of 735 fish, exceeding the upper bound of the SEG range.

Beginning on August 13, 2020, in reaction to low weir counts of coho salmon in the Little Susitna River, the Northern District set net fishery was restricted by closing the area east of the Susitna River, and during that time inriver restrictions also occurred to sport fisheries within the Little Susitna River. Inriver restrictions were removed on Little Susitna coho salmon sport fishery on August 25, after abundance improved and the run appeared to have late timing. Set gillnetting in the area east of Susitna River was also reopened on August 27th. Additionally, during the 2020 season, the sport fishery bag and possession limit for coho salmon on Fish Creek was increased effective 5:00 a.m. on August 22.

Based on an average price per pound of \$0.87, the estimated exvessel value of the 2020 commercial coho salmon fishery was approximately \$693,639 or 13% of the total exvessel value of all species in Upper Cook Inlet. This was approximately 19% less than the recent 10-year (2010–2019) average exvessel value of \$849,000 for coho salmon in UCI.

## **PINK SALMON**

Pink salmon runs in UCI are even-year dominant, with odd-year average annual harvests typically less than one-sixth of even-year harvests. The 2020 UCI commercial pink salmon harvest was estimated to be 326,594 fish (Table 1), which was 5% lower than the average annual harvest of nearly 343,943 fish from the previous 10 years of even-year harvests. Conversely, the abundance of pink salmon estimated in 2020 during sockeye salmon assessments in the Kenai River, was more than twice (1.5 million) its previous high count on record (660,000). Using an average weight of 3.74 lb/fish and an average price of \$0.25/lb, the estimated exvessel value for the 2020 pink salmon harvest was \$305,754 or 6% of the total exvessel value of salmon in UCI.

## **CHUM SALMON**

The 2020 harvest of 28,355 chum salmon was approximately 84% lower than the previous 10-year average annual harvest of 177,000 fish (Table 1). The exvessel value of the 2020 UCI commercial chum salmon harvest was approximately \$101,068 or 2% of the total exvessel value in UCI.

## **CHINOOK SALMON**

In UCI, there are two commercial fisheries where most Chinook salmon are harvested. These include the set gillnet fisheries in the Northern District and in the Upper Subdistrict of the Central District. Chinook salmon runs were expected to be below average across Southcentral Alaska for the 2020 season. As predicted, the 2020 Chinook salmon run turned out to be below average, and even lower than the preseason forecasts, leading to both preseason and inseason conservation measures in all fisheries to reduce the harvest of Chinook salmon.

In the Northern District, the directed Chinook salmon set gillnet fishery was opened, but fishing time was reduced by 50% to 6 hours, one day per week. At the 2020 UCI BOF meeting, new regulations were adopted pairing restrictive actions in the Deshka River Chinook salmon sport fishery with the Northern District commercial Chinook salmon fishery. Changes included, 1) restricting the Northern District directed fishery to 9 hours if Deshka River sport Chinook salmon fishery is restricted to no bait and 2) restricting the Northern District directed fishery to 6 hours if Deshka River sport Chinook salmon fishery is restricted to no retention. The 2020 preseason run forecast for Deshka River Chinook salmon was approximately 10,570 fish, which suggested harvest must be very limited in order to achieve the sustainable escapement goal (SEG) of 9,000–18,000 fish. Based on this low forecast, and recent low Chinook salmon production throughout the Susitna Drainage, the department issued two Emergency Orders (EOs No. 2-KS-2-08-20 and 2-KS-2-09-20) prohibiting retention of Chinook salmon in Areas 1,3,4,5, and 6 of the Susitna River drainage (including Deshka River), and closing Area 2 entirely to Chinook salmon fishing. Therefore, the weekly commercial fishing period on Mondays was reduced from 12 to six hours. Additionally, the area of the Northern District from the wood chip dock to the Susitna River was closed to commercial fishing in conjunction with the sport fishery closure of Chuitna River.

The estimated total Chinook salmon harvest in the Northern District in 2020 was 1,622 fish with approximately 1,474 harvested during the directed Chinook salmon fishery. The estimated 2020 final escapement of Chinook salmon in the Deshka River was approximately 10,638, just above the lower end of the SEG. The Little Susitna River Chinook salmon SEG of 2,100–4,300 also was met in 2020, with a weir count of 2,445 Chinook salmon. Aerial goals of the various Susitna

drainage Chinook salmon stock complex systems are still preliminary. Chinook salmon stock complex escapement goals for the Yentna and Talkeetna stocks were not met, but the stock complex escapement goal for Eastside Susitna was met.

Late-run Chinook salmon returning to the Kenai River and Kasilof River Chinook salmon, are the primary Chinook salmon stocks that are harvested in the ESSN fishery. Kenai River late-run Chinook salmon were managed to meet an OEG of 15,000–30,000 large Chinook salmon set by the BOF in 2020. If restrictions are implemented in the sport fishery to achieve the OEG (from July 1 through August 15), restrictive “paired” actions are also required in the ESSN fishery and can begin on June 20.

Late-run Chinook salmon passage in the Kenai River was counted at the river mile 14 sonar site from July 1 through August 20. The preliminary 2020 sonar count of large late-run Kenai River Chinook salmon was 11,499 with an escapement estimate of 11,908 fish, accounting for sport fishery harvest above the sonar site and spawning below the sonar site. Thus, neither the large fish OEG of 15,000–30,000 or the SEG of 13,500–30,000, for Kenai River late-run Chinook salmon was achieved.

The 2020 preseason forecast was for a total run of 22,807 large Kenai River late-run Chinook salmon. Based on low preseason abundance projections for late-run Chinook salmon and low observed abundance of the early-run Chinook salmon stock, the 2020 late-run Chinook salmon sport fishery in the Kenai River was restricted no retention of fish over 34 inches beginning July 1, 2020. Beginning June 20, the ESSN commercial fishery was restricted to fishing no more than 36 hours per week by EO only, with a 36-hour continuous closure per week beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday, and gear restrictions were implemented (see above; Sockeye Salmon, Upper Subdistrict Set Gillnet and Central District Drift Gillnet Fisheries). Beginning August 1, if the sport fishery remained restricted to achieve the OEG, the ESSN fishery would be restricted to 36 hours per week by EO including a Friday no fishing window, but low abundance of Chinook salmon in the Kenai River resulted in the entire ESSN fishery being closed from July 24 through the end of the season on August 15.

Other smaller streams with Chinook salmon south of the Kenai and Kasilof rivers include the Anchor River, Deep Creek, and Ninilchik River. Of the three southern Chinook systems, only the Ninilchik River Chinook SEG of 750–1,300 was achieved with a final run of 3,098 fish.

The 2020 UCI commercial harvest of all Chinook salmon stocks was 2,833 fish, which was 59% less than the previous 10-year (2010–2019) average annual harvest of 6,848 fish, and the second lowest harvest on record (Table 1). Of this total, the ESSN fishery harvested 769 Chinook salmon, or 27% of the harvest. The 769 Chinook salmon harvested in the ESSN fishery included an estimated 221 or 29% large Chinook salmon of all stocks, which included a total of 152 or 69% that were large Kenai River late-run origin fish. The total ESSN harvest of large Kenai River Chinook is 1 % of the preliminary total run estimate of 12,132. The drift gillnet fishery harvested 125 Chinook salmon of all sizes and all stocks. Using a price of \$3.57 per pound for Chinook salmon, the estimated exvessel value of the 2020 harvest was \$124,412, or approximately 2% of the total exvessel value of salmon in UCI.

Table 1.—Upper Cook Inlet commercial salmon harvest by species, 1970–2020.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1970	8,336	732,605	275,399	814,895	776,229	2,607,464
1971	19,765	636,303	100,636	35,624	327,029	1,119,357
1972	16,086	879,824	80,933	628,574	630,103	2,235,520
1973	5,194	670,098	104,420	326,184	667,573	1,773,469
1974	6,596	497,185	200,125	483,730	396,840	1,584,476
1975	4,787	684,752	227,379	336,333	951,796	2,205,047
1976	10,865	1,664,150	208,695	1,256,728	469,802	3,610,240
1977	14,790	2,052,291	192,599	553,855	1,233,722	4,047,257
1978	17,299	2,621,421	219,193	1,688,442	571,779	5,118,134
1979	13,738	924,415	265,166	72,982	650,357	1,926,658
1980	13,798	1,573,597	271,418	1,786,430	389,675	4,034,918
1981	12,240	1,439,277	484,411	127,164	833,542	2,896,634
1982	20,870	3,259,864	793,937	790,648	1,433,866	6,299,185
1983	20,634	5,049,733	516,322	70,327	1,114,858	6,771,874
1984	10,062	2,106,714	449,993	617,452	680,726	3,864,947
1985	24,088	4,060,429	667,213	87,828	772,849	5,612,407
1986	39,256	4,792,072	757,353	1,300,958	1,134,817	8,024,456
1987	39,440	9,469,248	449,750	109,389	349,150	10,416,977
1988	29,080	6,843,833	561,048	471,080	710,615	8,615,656
1989	26,738	5,011,159	339,931	67,443	122,051	5,567,322
1990	16,105	3,604,710	501,739	603,630	351,197	5,077,381
1991	13,542	2,178,797	426,498	14,663	280,230	2,913,730
1992	17,171	9,108,353	468,930	695,861	274,303	10,564,618
1993	18,871	4,755,344	306,882	100,934	122,770	5,304,801
1994	19,962	3,565,609	583,793	523,434	303,177	4,995,975
1995	17,893	2,952,096	447,130	133,578	529,428	4,080,125
1996	14,306	3,888,922	321,668	242,911	156,520	4,624,327
1997	13,292	4,176,995	152,408	70,945	103,036	4,516,676
1998	8,124	1,219,517	160,688	551,737	95,704	2,035,770
1999	14,383	2,680,518	126,105	16,176	174,554	3,011,736
2000	7,350	1,322,482	236,871	146,482	127,069	1,840,254
2001	9,295	1,826,851	113,311	72,560	84,494	2,106,511
2002	12,714	2,773,118	246,281	446,960	237,949	3,717,022
2003	18,503	3,476,161	101,756	48,789	120,767	3,765,976
2004	26,922	4,927,084	311,058	357,939	146,165	5,769,168
2005	27,667	5,238,699	224,657	48,419	69,740	5,609,182
2006	18,029	2,192,730	177,853	404,111	64,033	2,856,756
2007	17,625	3,316,779	177,339	147,020	77,240	3,736,003
2008	13,333	2,380,135	171,869	169,368	50,315	2,785,020
2009	8,750	2,045,794	153,210	214,321	82,808	2,504,883
2010	9,900	2,828,342	207,350	292,706	228,863	3,567,161
2011	11,248	5,277,995	95,291	34,123	129,407	5,548,064
2012	2,527	3,133,839	106,775	469,598	269,733	3,982,472
2013	5,398	2,683,224	260,963	48,275	139,365	3,137,225
2014	4,660	2,343,529	137,376	642,879	116,093	3,244,537
2015	10,798	2,649,667	216,032	48,004	275,960	3,200,461
2016	10,027	2,396,943	147,495	382,468	123,679	3,060,612
2017	7,369	1,838,110	293,811	168,042	239,425	2,546,757
2018	3,405	817,879	232,290	126,923	115,366	1,295,863
2019	3,149	1,720,559	163,863	70,827	129,176	2,087,574
2020	2,833	669,751	133,761	326,594	28,355	1,161,294
1970–2019 Avg	14,487	2,920,775	285,705	377,379	381,653	3,979,999
2009–2019 Avg	6,848	2,569,009	186,125	228,385	176,707	3,167,073

Table 2.—Upper Cook Inlet sockeye salmon forecast versus actual run in thousands of fish, by river system, 2020.

System	Forecast	Actual	% Difference
Kenai River	2,231	2,552	14.4%
Kasilof River	723	821	13.6%
Susitna River	571	380	-33.5%
Fish Creek	121	74	-38.8%
Minor Systems	624	483	-22.6%
Overall Total	4,270	4,363	2.1%

Table 3.—Upper Cook Inlet sockeye salmon goals and passage (or counts), 2020.

System	2020 Estimate	Goal type <sup>a</sup>	Lower bound	Upper bound
Kenai River	1,814,252 <sup>b</sup>	Inriver	1,000,000	1,200,000
		SEG	750,000	1,300,000
Kasilof River	545,654 <sup>b,c</sup>	BEG	140,000	320,000 <sup>c</sup>
		OEG	140,000	370,000
Larson Lake	12,018	SEG	15,000	35,000
Judd Lake	31,220	SEG	15,000	40,000
Fish Creek	64,423	SEG	15,000	45,000
Packers Creek	15,903 <sup>d</sup>	SEG	15,000	30,000

<sup>a</sup> BEG=Biological Escapement Goal, SEG=Sustainable Escapement Goal, OEG=Optimum Escapement Goal, and Inriver=Inriver Goal.

<sup>b</sup> Sonar estimate at river mile 19 on Kenai River and river mile 8 on Kasilof River; not escapement. Harvest upstream of sonar must be subtracted to estimate escapement. Sport harvest estimated from Statewide Harvest Survey; results for 2020 available spring of 2021 at the earliest.

<sup>c</sup> The Kasilof River management goal in 2020 was the BEG.

<sup>d</sup> Incomplete count. Video data collected from June 15 through August 15.

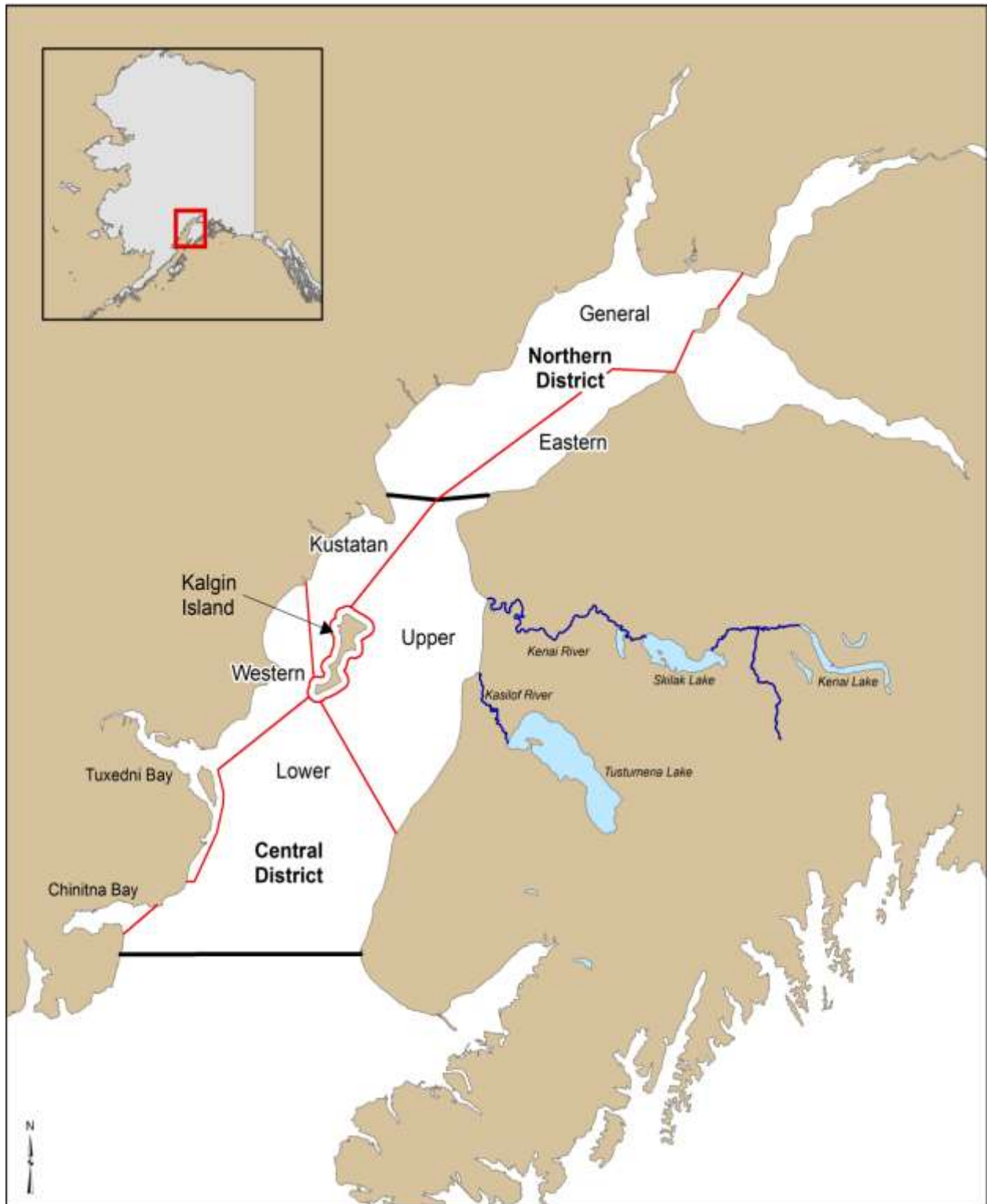


Figure 1.—Upper Cook Inlet commercial fisheries subdistrict fishing boundaries.



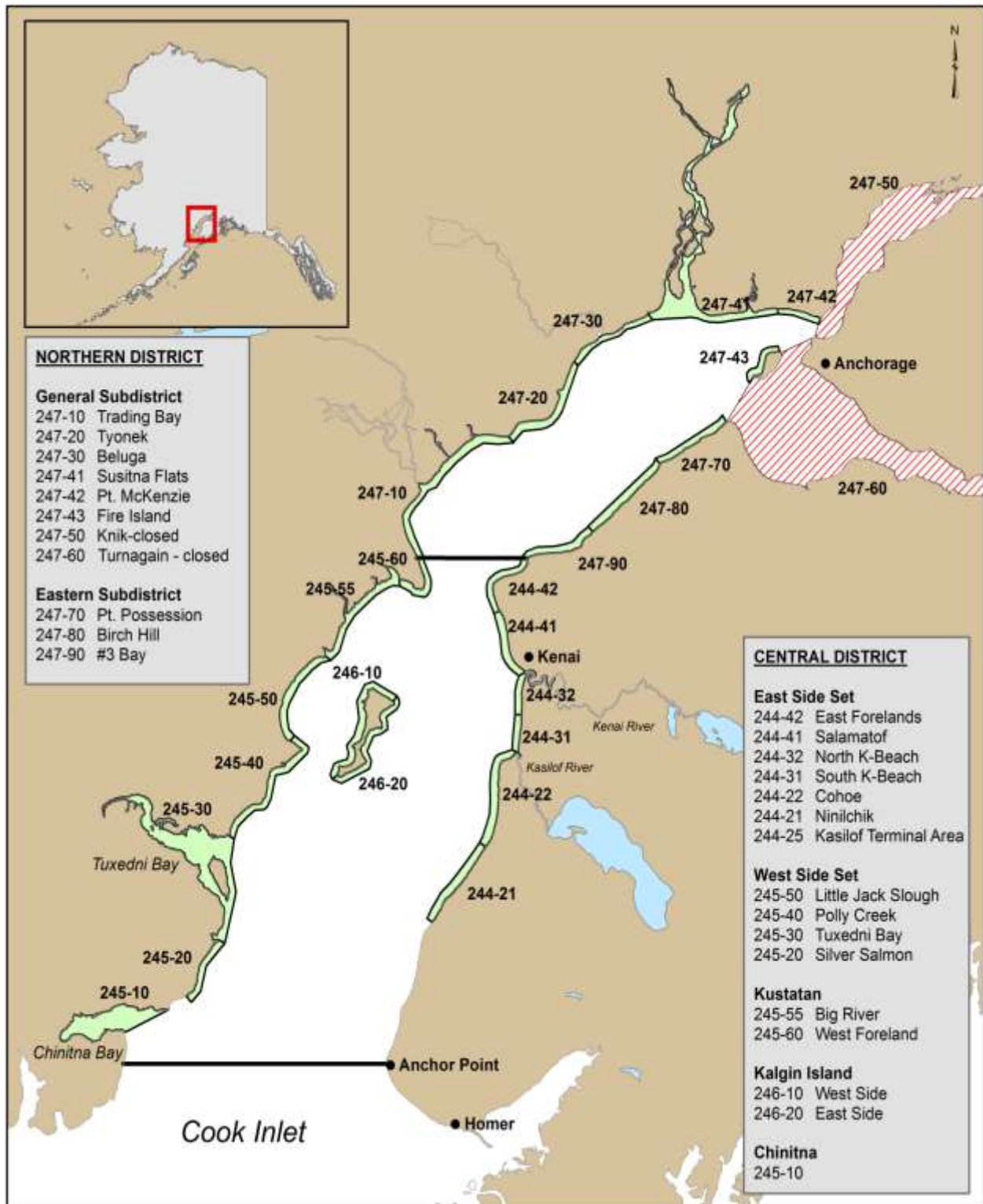


Figure 2.—Upper Cook Inlet commercial set gillnet statistical areas.

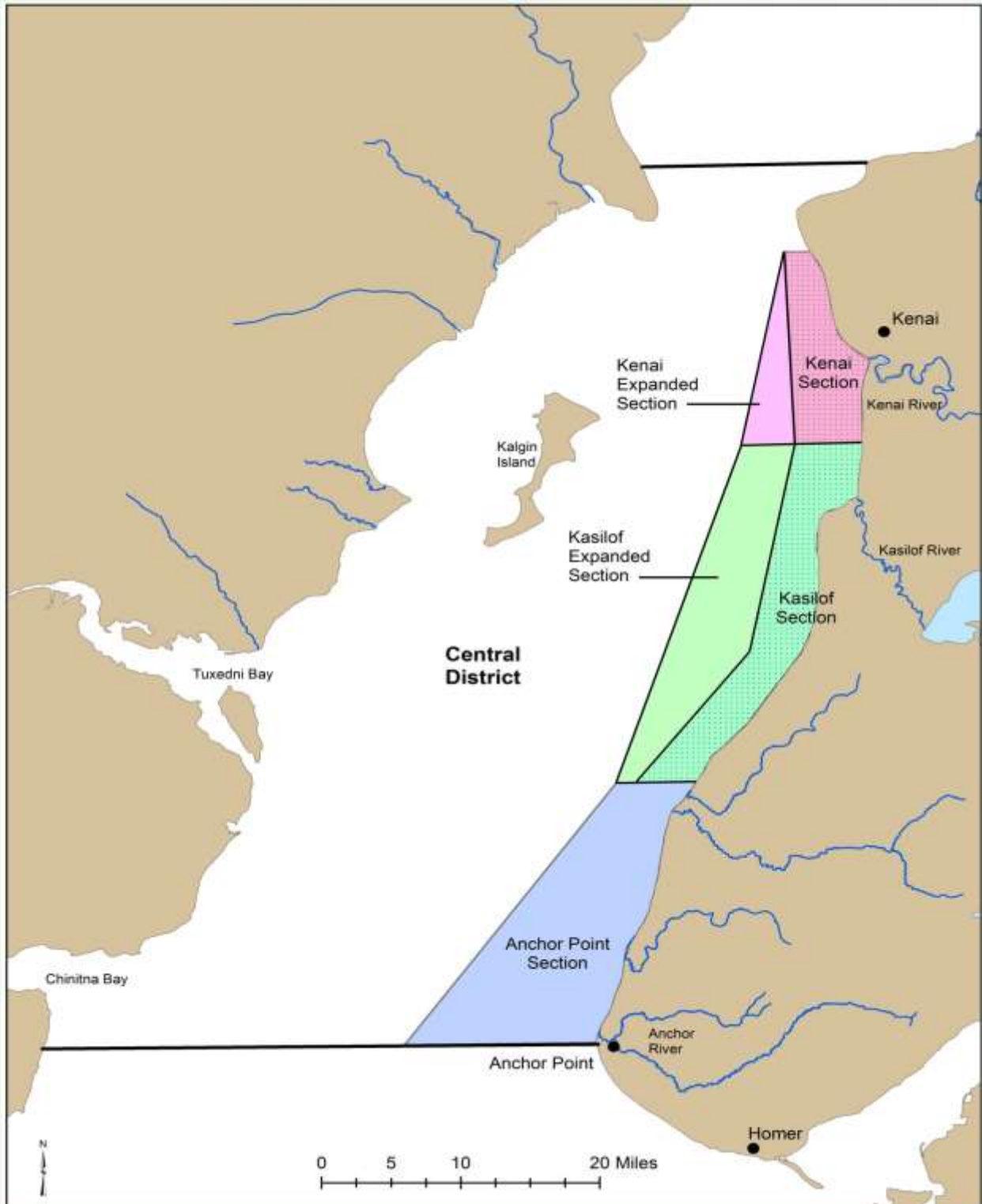


Figure 3.—Map of drift gillnet “corridor” boundaries, including the Kenai and Kasilof sections, Expanded Kenai and Expanded Kasilof sections, and the Anchor Point Section.

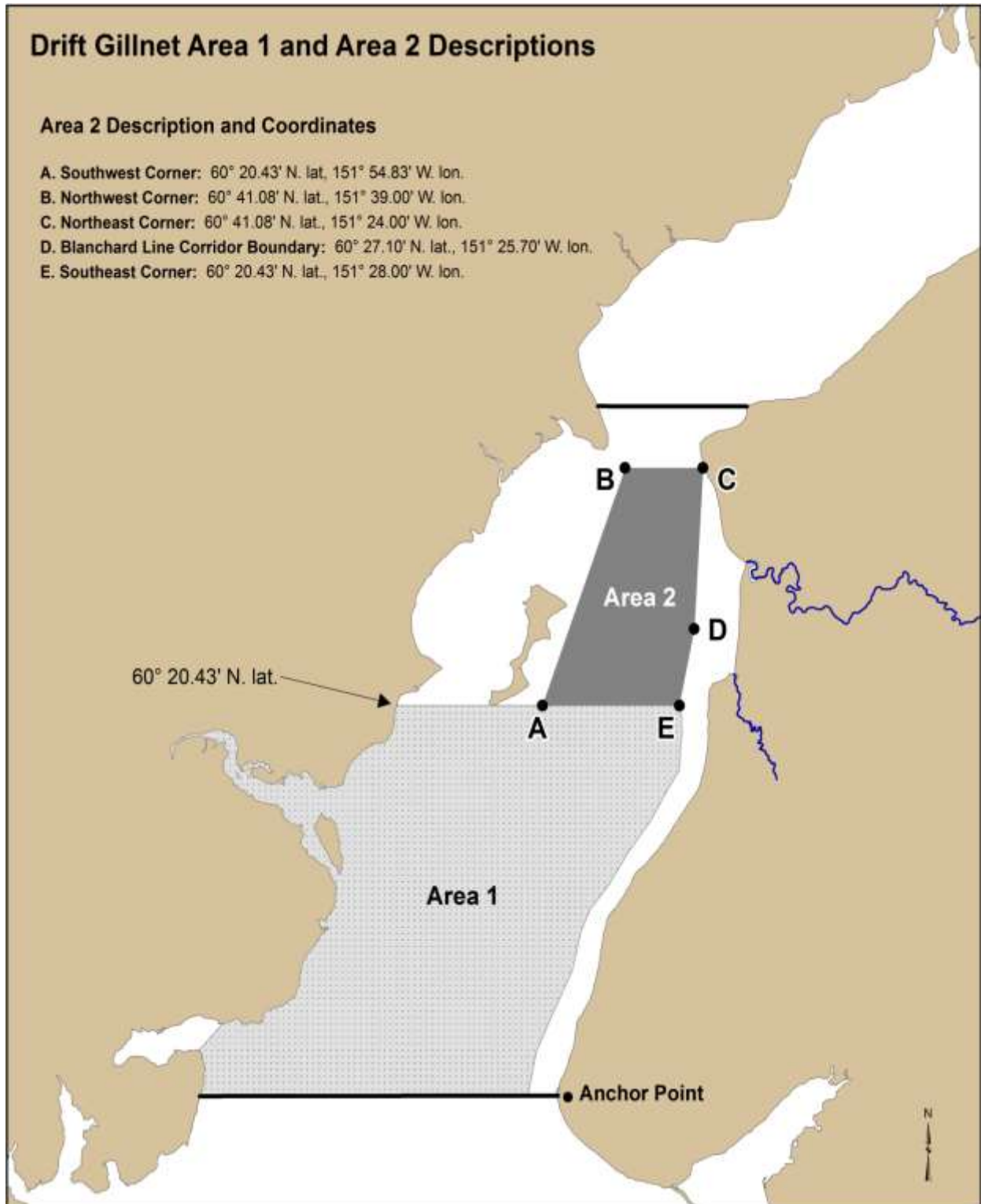


Figure 4.—Fishing boundaries for Drift Gillnet Areas 1 and 2.

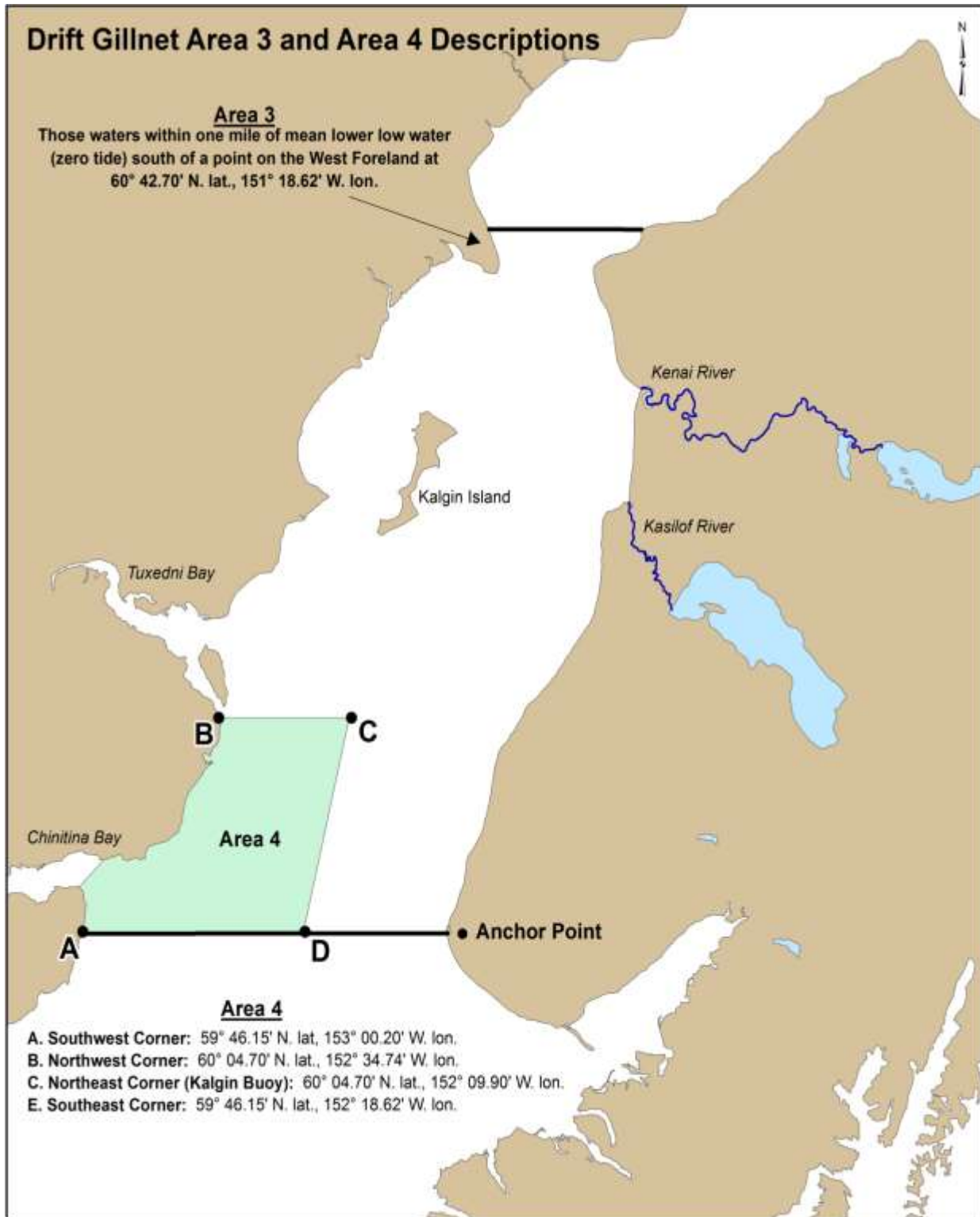


Figure 5.—Map of Drift Gillnet Areas 3 and 4.

# EXHIBIT J



Sponsored by: Council Members Molloy and Glendening  
Vice Mayor Navarre

## CITY OF KENAI

### RESOLUTION NO. 2018-58

A RESOLUTION OF THE COUNCIL OF THE CITY OF KENAI, ALASKA, REQUESTING THAT GOVERNOR BILL WALKER DECLARE AN ECONOMIC DISASTER FOR THE UPPER COOK INLET FISHERIES REGION AND SUPPORTING A RECOVERY PLAN.

WHEREAS, the City of Kenai recognizes and supports the positive economic and cultural impact of commercial fisheries in the Upper Cook Inlet Region; and,

WHEREAS, the City supports the Upper Cook Inlet salmon fishery and City residents, families and businesses that participate in the salmon fishery along with other users of this fishery's resource; and,

WHEREAS, commercial fishing harvests in the Upper Cook Inlet were at historic lows in 2018, which threatens the livelihood of the individuals, families, and businesses participating in the fishery, and jeopardizes the continued viability of the industry in the Upper Cook Inlet Region; and,

WHEREAS, the Commercial Salmon Season Summary for Upper Cook Inlet commercial salmon harvest by species, 1970 – 2017, with handwritten notes for 2018 define the economic plight and puts a number to the disaster resolution we are requesting; and,

WHEREAS, a Governor's State of Alaska disaster declaration creates a means for financial assistance for those involved in the fishery and could also provide assistance for science and resource management benefiting all users; and,

WHEREAS, a declaration of disaster from the Kenai Peninsula Borough is an important step in obtaining financial relief; and,

WHEREAS, the City also receives revenue from a share of fish taxes collected by the State of Alaska from fisheries businesses; and,

WHEREAS, it is in the best interest of the City of Kenai to request that Governor Bill Walker declare an Economic Disaster in the Upper Cook Inlet Fisheries Region, and to support a recovery plan that directly assists fisheries participants and benefits all users of this important natural resource of salmon.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF KENAI, ALASKA:

**Section 1.** That the City Council of the City of Kenai requests that Governor Bill Walker declare an Economic Disaster in the Upper Cook Inlet Fisheries Region and that the State of Alaska implement a recovery plan that benefits commercial fisheries users and others that rely on this important fisheries resource.

**Section 2.** That a copy of this Resolution be provided to Governor Walker, Senator Peter Micciche, Representative Gary Knopp, and Kenai Peninsula Borough Mayor Charlie Pierce.

**Section 3.** That this Resolution takes effect immediately upon passage.

ADOPTED BY THE COUNCIL OF THE CITY OF KENAI, ALASKA, this 17<sup>th</sup> day of October, 2018.

  
\_\_\_\_\_  
TIM NAVARRE, VICE MAYOR

ATTEST:

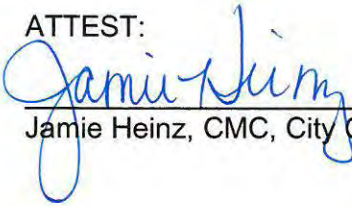
  
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Jamie Heinz, CMC, City Clerk



Table 1. Upper Cook Inlet commercial salmon harvest by species, 1970- 2017.

Year	King	Sockeye	Coho	Pink	Chum	Total
1970	8,336	732,605	275,399	814,895	776,229	2,607,464
1971	19,765	636,303	100,636	35,624	327,029	1,119,357
1972	16,086	879,824	80,933	628,574	630,103	2,235,520
1973	5,194	670,098	104,420	326,184	667,573	1,773,469
1974	6,596	497,185	200,125	483,730	396,840	1,584,476
1975	4,787	684,752	227,379	336,333	951,796	2,205,047
1976	10,865	1,664,150	208,695	1,256,728	469,802	3,610,240
1977	14,790	2,052,291	192,599	553,855	1,233,722	4,047,257
1978	17,299	2,621,421	219,193	1,688,442	571,779	5,118,134
1979	13,738	924,415	265,166	72,982	650,357	1,926,658
1980	13,798	1,573,597	271,418	1,786,430	389,675	4,034,918
1981	12,240	1,439,277	484,411	127,164	833,542	2,896,634
1982	20,870	3,259,864	793,937	790,648	1,433,866	6,299,185
1983	20,634	5,049,733	516,322	70,327	1,114,858	6,771,874
1984	10,062	2,106,714	449,993	617,452	680,726	3,864,947
1985	24,088	4,060,429	667,213	87,828	772,849	5,612,407
1986	39,256	4,792,072	757,353	1,300,958	1,134,817	8,024,456
1987	39,440	9,469,248	449,750	109,389	349,150	10,416,977
1988	29,080	6,843,833	561,048	471,080	710,615	8,615,656
1989	26,738	5,011,159	339,931	67,443	122,051	5,567,322
1990	16,105	3,604,710	501,739	603,630	351,197	5,077,381
1991	13,542	2,178,797	426,498	14,663	280,230	2,913,730
1992	17,171	9,108,353	468,930	695,861	274,303	10,564,618
1993	18,871	4,755,344	306,882	100,934	122,770	5,304,801
1994	19,962	3,565,609	583,793	523,434	303,177	4,995,975
1995	17,893	2,952,096	447,130	133,578	529,428	4,080,125
1996	14,306	3,888,922	321,668	242,911	156,520	4,624,327
1997	13,292	4,176,995	152,408	70,945	103,036	4,516,676
1998	8,124	1,219,517	160,688	551,737	95,704	2,035,770
1999	14,383	2,680,518	126,105	16,176	174,554	3,011,736
2000	7,350	1,322,482	236,871	146,482	127,069	1,840,254
2001	9,295	1,826,851	113,311	72,560	84,494	2,106,511
2002	12,714	2,773,118	246,281	446,960	237,949	3,717,022
2003	18,503	3,476,161	101,756	48,789	120,767	3,765,976
2004	26,922	4,927,084	311,058	357,939	146,165	5,769,168
2005	27,667	5,238,699	224,657	48,419	69,740	5,609,182
2006	18,029	2,192,730	177,853	404,111	64,033	2,856,756
2007	17,625	3,316,779	177,339	147,020	77,240	3,736,003
2008	13,333	2,380,135	171,869	169,368	50,315	2,785,020
2009	8,750	2,045,794	153,210	214,321	82,808	2,504,883
2010	9,900	2,828,342	207,350	292,706	228,863	3,567,161
2011	11,248	5,277,995	95,291	34,123	129,407	5,548,064
2012	2,527	3,133,839	106,775	469,598	269,733	3,982,472
2013	5,398	2,683,224	260,963	48,275	139,365	3,137,225
2014	4,660	2,343,529	137,376	642,879	116,093	3,244,537
2015	10,798	2,649,667	216,032	48,004	275,960	3,200,461
2016	10,027	2,396,943	147,495	382,468	123,679	3,060,612
2017 <sup>a</sup>	7,369	1,838,110	293,811	168,042	239,425	2,546,757
2007-2016 Avg	9,427	2,905,625	167,370	244,876	149,346	3,476,644

<sup>a</sup> 2017 data are preliminary

2018\* 3233 814,545 220,861 126,605 129,682 1,294,926





*"Village with a Past, City with a Future"*

210 Fidalgo Avenue, Kenai, Alaska 99611-7794  
Telephone: 907-283-7535 / FAX: 907-283-3014  
www.kenai.city

## MEMORANDUM

**TO:** Mayor Gabriel, Council Members, Administration  
**FROM:** Council Members Molloy, Glendening  
Vice Mayor Navarre  
**DATE:** October 10, 2018  
**SUBJECT:** **Resolution No. 2018-58, Requesting That Governor Bill Walker Declare An Economic Disaster For The Upper Cook Inlet Fisheries Region And Supporting A Recovery Plan.**

---

Preliminary data, and information from commercial fishers, indicate that the 2018 Upper Cook Inlet salmon harvest was at a historic low. This low salmon harvest threatens the livelihood of the individuals, families, and businesses participating in the fishery, and jeopardizes the continued viability of this industry in the Upper Cook Inlet Region.

The City of Kenai has long recognized and supported the positive economic and cultural impact of commercial fisheries in the Upper Cook Inlet Region, and the individuals, families, and businesses participating in the fishery. Of many benefits to the City of Kenai from the salmon fisheries, one is the revenue that the City receives from a share of fish taxes collected by the State of Alaska from fisheries businesses.

A Governor's disaster declaration creates a means for financial assistance for those involved in the fishery and could also provide assistance for science and resource management benefiting all users. This resolution requests that Governor Walker declare an Economic Disaster in the Upper Cook Inlet Fisheries Region and that the State of Alaska implement a recovery plan that benefits commercial fisheries users and others that rely on this important fisheries natural resource of salmon.

Council's support of this resolution is respectfully requested.



40610 Kalifornsky Beach Road  
Kenai, Alaska 99611

Phone: 907-283-5761  
Fax: 907-283-9433  
info@ciaanet.org  
www.ciaanet.org

Charlie Pierce  
Office of the Borough Mayor  
Kenai Peninsula Borough  
144 N. Binkley Street  
Soldotna, Alaska 99669

September 21, 2018

Dear Mr. Pierce,

I am writing to urge the Kenai Peninsula Borough to ask the State of Alaska to declare an economic disaster for Cook Inlet sockeye salmon fisheries for 2018. During the 2018 salmon season, the communities of Cook Inlet that rely on sockeye salmon harvesting faced unusual run timing on the Kenai River. For only the second time on record, over one-half of the Kenai River late-run sockeye salmon returned in August, causing confusion for fishery managers and resulting in significantly-less harvest opportunity for commercial fishermen. And the 2018 sockeye salmon harvest was less than 20% of the prior average harvests. The lower harvest has resulted in hardships for commercial fishing communities, families, individuals, and businesses.

If the State of Alaska makes an economic disaster declaration, opportunities will be opened up for relief including the potential for legislative appropriation of assistance grants as well as possible assistance to salmon permit holders who participate in the Commercial Fishing Revolving Loan program and may be unable to meet the terms of their loans because of the low sockeye harvest.

Cook Inlet Aquaculture Association is a non-profit corporation founded in 1976 to provide and protect the salmon resource in the Cook Inlet Watershed. We produce hatchery-born, ocean-raised salmon for the common property fishery. Maintaining and improving salmon habitat and natural salmon populations is also an important part of CIAA's work. Our operations are supported in part by a 2% Salmon Enhancement Tax levied on salmon caught or sold within Area H (Cook Inlet region). Decreased harvest to the Area H fishermen means decreased funding for our mission of providing and protecting the salmon resource of the Cook Inlet region, which is why we urge you to support a sockeye salmon disaster declaration.

Thank you for considering putting forth a statement to the State of Alaska requesting a 2018 sockeye salmon economic disaster declaration for Cook Inlet.

Sincerely,

Gary Fandrei  
Executive Director

Cc: John Quick, Chief of Staff, Office of the Borough Mayor

*Salmon enhancement today means better salmon fishing tomorrow.*

**Exhibit J**



# COOK INLET FISHERMAN'S FUND

Non-profit Advocate for all Commercial Fishing Gear Types in Area H

P.O. Box 39408 Ninilchik, AK 99639 phone/fax 907-260-5614

Charlie Pierce

Office of the Borough Mayor  
Kenai Peninsula Borough  
144 N. Binkley Street  
Soldotna, Alaska 99669

Dear Mr. Pierce,

Cook Inlet Fisherman's Fund is one of the oldest fisherman's organizations in Cook Inlet. We represent all salmon fishermen in Area H which includes setnetters, drifters, and seiners.

As you know the sockeye salmon fishery in Cook Inlet in 2018 was a total disaster. Most fishermen didn't even cover expenses. We, therefore, are asking, on behalf of our membership, that the Kenai Peninsula Borough appeal to the State of Alaska to declare an economic disaster for Cook Inlet sockeye salmon fisheries for 2018.

Resident commercial fishermen are an important contributor to the economy of the Borough. We appeal to the Borough for assistance.

Thank you for your help.

Sincerely,

For the Board of Cook Inlet Fisherman's Fund



## **COPPER RIVER SEAFOODS**

**Main Administrative Office**

1118 E 5<sup>th</sup> Avenue · Anchorage, AK 99501

Phone: (907) 522-7806 · (888) 622-1197 · Fax: (907) 274-0348

[www.CopperRiverSeafoods.com](http://www.CopperRiverSeafoods.com)

October 2, 2018

Mayor Charlie Pierce  
144 North Binkley Street  
Soldotna, AK 99669

Dear Mayor Pierce,

As you are aware, the 2018 commercial fishing season in Cook Inlet was disastrous to say the least. As a large processor with expansion plans in Cook Inlet, this season was especially difficult. Being a large company with operations in almost every major fishery in the State, we will absorb this loss (as we do not have a choice) and continue with business. However, this is not the case for many of the folks who focus their fishing activities in Cook Inlet. It is for their sake and the sake of the future of this fishery that we write this letter in support of a disaster recovery effort on the part of the State of Alaska.

The hardship of several poor fishing years in Cook Inlet and the complete failure of the 2018 season have many people in the industry wondering how they are going to get through the winter. We believe the State needs to take a very hard look at how it can assist in giving them the relief to ensure they can get to what will hopefully be a better year of fishing in 2019.

We are dealing closely with the 2016 Prince William Sound Pink Salmon disaster declaration and recovery funds and I am afraid this type of relief will not work for Cook Inlet. It is taking way too long to get the funds to the people who were truly affected by that run failure. The people of Cook Inlet need assistance sooner than that.

We hope we have your support in this matter and are happy to discuss this further at your request.

Regards,

Martin Weiser  
Corporate Development Officer  
Copper River Seafoods

### **ANCHORAGE PLANT**

1400 E 1<sup>st</sup> Ave · Anchorage, AK 99501  
Phone: (907) 522-7806 · Fax: (907) 222-0348

### **COPPER RIVER SALES**

7165 Wagner Way, Suite 102 · Gig Harbor, WA 98335  
Phone: (253) 851-1164 · Fax: (253) 851-1165

### **CORDOVA PLANT**

P.O. Box 158 / 300 Cannery Row · Cordova, AK 99574  
Phone: (907) 424-2721 · Fax: (907) 424-7455

### **NAKNEK PLANT**

0.5 Peninsula Hwy · Naknek, AK 99633  
Phone: (907) 522-7806 · Fax: (907) 274-0348

### **KOTZEBUE PLANT**

PO Box 489 · Kotzebue, AK 99752  
Phone: (907) 522-7806 · Fax: (907) 274-0348



14896 Kenai Spur Highway, Suite 103-A • Kenai, AK 99611

Phone: (907) 283-3335 • Fax: (907) 283-3913

www.kpedd.org

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*Leadership to enhance, foster and promote economic development*

Kenai Peninsula Borough  
144 North Binkley Street  
Soldotna, Alaska 99669

Attn: Mayor Charlie Pierce  
RE: 2018 Sockeye Fishery Disaster Declaration

Dear Mayor Pierce,

The 2018 Upper Cook Inlet sockeye salmon harvest was less than 20% of the 40-, 20- or 10-year average harvest. This year, the value of salmon was well below the level necessary for covering the cost of operating and maintaining commercial drift, setnet, processing or marketing businesses. These businesses are essential to the local, regional, and state economies. Maintaining the commercial seafood industry in Cook Inlet is also essential for the biological management of fish stocks.

The Cook Inlet Economic Recovery Proposal identifies the areas and businesses most effected by this year's historically low returns, the required research for stronger future harvests, as well as recovery funding disbursements. We support the 2018 sockeye salmon harvest declaration of disaster and believe the Cook Inlet Economic Recovery Proposal to be the best path forward.

Please let me know if there is anything further KPEDD can do to support this declaration.

Respectfully,

Tim Dillon  
Executive Director  
Kenai Peninsula Economic Development District  
(907) 283-3335



Alaska Regional Development Organization (ARDOR)  
The State of Alaska Department of Commerce, Community  
and Economic Development certified KPEDD as an  
ARDOR in 1989.



Economic Development District (EDD)  
The U.S. Department of Commerce, Economic  
Development Administration (EDA) recognized KPEDD  
as an Economic Development District in 1988.

**Exhibit J**

# EXHIBIT K



# COOK INLET FISHERMAN'S FUND

Non-profit Advocate for all Commercial Fishing Gear Types in Area H

P.O. Box 39408 Ninilchik, AK 99639 phone/fax 907-260-5614

Charlie Pierce

Office of the Borough Mayer  
Kenai Peninsula Borough  
144 N. Binkley Street  
Soldotna, Alaska 99669

Dear Mr. Pierce,

Cook Inlet Fisherman's Fund is one of the oldest fisherman's organizations in Cook Inlet. We represent all salmon fishermen in Area H which includes setnetters, drifters, and seiners.

As you know the sockeye salmon fishery in Cook Inlet in 2018 was a total disaster. Most fishermen didn't even cover expenses. We, therefore, are asking, on behalf of our membership, that the Kenai Peninsula Borough appeal to the State of Alaska to declare an economic disaster for Cook Inlet sockeye salmon fisheries for 2018.

Resident commercial fishermen are an important contributor to the economy of the Borough. We appeal to the Borough for assistance.

Thank you for your help.

Sincerely,

For the Board of Cook Inlet Fisherman's Fund

# EXHIBIT L





14896 Kenai Spur Highway, Suite 103-A • Kenai, AK 99611

Phone: (907) 283-3335 • Fax: (907) 283-3913

www.kpedd.org

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*Leadership to enhance, foster and promote economic development*

Kenai Peninsula Borough  
144 North Binkley Street  
Soldotna, Alaska 99669

Attn: Mayor Charlie Pierce  
RE: 2018 Sockeye Fishery Disaster Declaration

Dear Mayor Pierce,

The 2018 Upper Cook Inlet sockeye salmon harvest was less than 20% of the 40-, 20- or 10-year average harvest. This year, the value of salmon was well below the level necessary for covering the cost of operating and maintaining commercial drift, setnet, processing or marketing businesses. These businesses are essential to the local, regional, and state economies. Maintaining the commercial seafood industry in Cook Inlet is also essential for the biological management of fish stocks.

The Cook Inlet Economic Recovery Proposal identifies the areas and businesses most effected by this year's historically low returns, the required research for stronger future harvests, as well as recovery funding disbursements. We support the 2018 sockeye salmon harvest declaration of disaster and believe the Cook Inlet Economic Recovery Proposal to be the best path forward.

Please let me know if there is anything further KPEDD can do to support this declaration.

Respectfully,

Tim Dillon  
Executive Director  
Kenai Peninsula Economic Development District  
(907) 283-3335



**Alaska Regional Development Organization (ARDOR)**  
The State of Alaska Department of Commerce, Community and Economic Development certified KPEDD as an ARDOR in 1989.



**Economic Development District (EDD)**  
The U.S. Department of Commerce, Economic Development Administration (EDA) recognized KPEDD as an Economic Development District in 1988.

**Exhibit L**

# EXHIBIT M

Introduced by: Mayor  
Date: 11/20/18  
Action: Adopted  
Vote: 9 Yes, 0 No, 0 Absent

**KENAI PENINSULA BOROUGH  
RESOLUTION 2018-052**

**A RESOLUTION DECLARING A LOCAL ECONOMIC DISASTER AND  
REQUESTING THE GOVERNOR OF THE STATE OF ALASKA DECLARE AN  
ECONOMIC DISASTER FOR THE UPPER COOK INLET FISHERIES REGION AND  
SUPPORTING A RECOVERY PLAN**

- WHEREAS,** as of September 1, 2018 the Upper Cook Inlet ("UCI") commercial salmon harvest was approximately 1,293,945 fish, which is the lowest harvest of commercial salmon in the Upper Cook Inlet commercial salmon harvest since 1971 and approximately 61 percent less than the recent 10-year average of 3.4 million fish; and
- WHEREAS,** the estimated ex-vessel value of all salmon species harvested in UCI in 2018 was approximately \$11 million, which was 67 percent less than the previous 10-year average annual ex-vessel value of \$31 million; and
- WHEREAS,** sockeye salmon are the most valuable of the five species of Pacific salmon present in UCI and in 2018 the commercial sockeye harvest of 815,000 fish was approximately 70 percent less than the average annual harvest of 2.8 million fish for the years 2008 to 2018 and the lowest UCI sockeye harvest since 1975; and
- WHEREAS,** for only the second known season more than half of the Kenai River late-run sockeye salmon returned during the month of August 2018; and
- WHEREAS,** AS 44.33.285 authorizes the governor, upon recommendation of the commissioner of commerce, community, and economic development, to designate by proclamation an area impacted by an economic disaster; and
- WHEREAS,** AS 44.33.310(3) provides that an economic disaster occurs where the annual income to workers in the designated area dropped below the average annual income for the base period, which is, for a fisheries failure, the years during which a fishery produced at economically representative levels as determined by the Department of Fish and Game; and
- WHEREAS,** this extremely low harvest was below the level necessary to cover the cost of operating and maintaining commercial drift, set net, processing and marketing businesses in the Kenai Peninsula Borough; and

**WHEREAS,** the Kenai Peninsula Borough is a political subdivision of the State of Alaska; and

**WHEREAS,** an economic disaster declaration by the Governor would allow the legislature to appropriate funds for assistance grants and the governor may recommend in the governor's budget that capital projects planned for the area be accelerated and other steps may be taken as provided in AS 44.33.285 - .310 to accelerate the recovery from this disaster; and

**WHEREAS,** United Cook Inlet Drift Association, the Cook Inlet Fisherman's Fund, Copper River Seafoods, Cook Inlet Aquaculture Association, and the Kenai Peninsula Economic Development District have all urged the Kenai Peninsula Borough to ask the Governor of the State of Alaska to declare an economic disaster for the Upper Cook Inlet sockeye salmon commercial fisheries for 2018 due to the failure of the 2018 season; and

**WHEREAS,** the City of Kenai adopted Resolution 2018-58 requesting that Governor Bill Walker declare an economic disaster for the Upper Cook Inlet fisheries region and supporting a recovery plan;

**NOW, THEREFORE, BE IT RESOLVED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH:**

**SECTION 1.** That the Kenai Peninsula Borough Assembly declares an economic disaster to exist in the areas of the Kenai Peninsula Borough affected by the 2018 Upper Cook Inlet Fisheries.

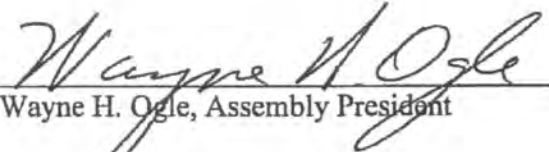
**SECTION 2.** That the Kenai Peninsula Borough Assembly respectfully requests that the Governor of the State of Alaska declare an economic disaster, as described in AS 44.33.285, to exist in the Upper Cook Inlet Fisheries Region and that the State of Alaska implement a recovery plan that provides private assistance and takes other actions that benefit commercial fisheries participants and others that rely on this important fisheries resource.

**SECTION 3.** The assembly also respectfully requests that the State of Alaska urge federal agencies to render private and public assistance to all affected persons and entities.

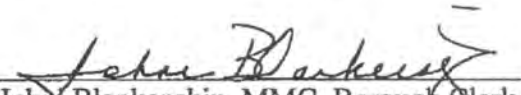
**SECTION 4.** That a copy of this resolution shall be provided to Governor Bill Walker, Senator Peter Micciche and Representative Gary Knopp.

**SECTION 5.** That this resolution becomes effective immediately upon its adoption.

ADOPTED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH THIS 20TH DAY OF NOVEMBER, 2018.

  
Wayne H. Ogle, Assembly President

ATTEST:

  
John Blankenship, MMC, Borough Clerk



Yes: Bagley, Blakeley, Carpenter, Cooper, Dunne, Fischer, Hibbert, Smalley, Ogle  
No: None  
Absent: None

# EXHIBIT N



## City of Homer

[www.cityofhomer-ak.gov](http://www.cityofhomer-ak.gov)

## Office of the Mayor

491 East Pioneer Avenue  
Homer, Alaska 99603

[mayor@ci.homer.ak.us](mailto:mayor@ci.homer.ak.us)

(p) 907-235-3130

(f) 907-235-3143

October 26, 2018

Honorable Governor Bill Walker  
Office of the Governor  
P.O. Box 110001  
Juneau, AK 99811-0001

Dear Governor Bill Walker,

At the City Council meeting on October 22<sup>nd</sup> the Homer City Council unanimously endorsed this letter to you.

To summarize the content of the letter, many Homer constituents take part in the Upper Cook Inlet salmon fishery have had what they consider to be a failed season. They have asked us to ask you to provide whatever sort of Economic relief is available through the State of Alaska. Further details are contained within their letter.

Sincerely Yours,

Ken Castner, Mayor  
City of Homer

Enc: Letter from Homer City Council requesting an Economic Disaster Declaration



## City of Homer

[www.cityofhomer-ak.gov](http://www.cityofhomer-ak.gov)

Homer City Council

491 East Pioneer Avenue

Homer, Alaska 99603

(p) 907-235-3130

(f) 907-235-3143

October 22, 2018

Dear Governor Walker,

Because of the unexpected failures in the sockeye salmon returns in the Gulf of Alaska during 2018, the Homer City Council encourages you to declare an economic disaster for the Upper Cook Inlet (UCI) fisheries region. The salmon harvests in UCI, as in other fishery regions, are at historic lows and threaten the communities of UCI. These fishing communities are economically and culturally suffering as a result of these unexpected failures in this season's sockeye returns.

- The 2018 sockeye harvest was less than 20% of the prior 10 year average harvest
- The 6 year old salmon from the 2012 brood year were at historic low levels (95% were not in the 2018 return)
- The 5 year old salmon from the 2013 brood year are at near historic low levels (50% were not in the 2018 return)
- Run timing of UCI sockeye run has shifted, now the majority of the run returns in August
- Size at age has also shown a dramatic shift to smaller sockeyes
- The 2012 brood year has a 1.3:1 return per spawner ratio
- The drift fleet harvest has not been this small since 1975

### FISHING COMMUNITIES AFFECTED BY THE 2018 SOCKEYE SALMON DISASTER

The individuals, families and businesses in the following Kenai Peninsula Borough fishing communities were affected by the 2018 sockeye salmon disaster:

Seldovia, Halibut Cove, Homer, Kachemak Selo, Voznesenka, Anchor Point, Nilolaevsk, Ninilchik, Clam Gulch, Kasilof, Kenai, Nikiski and Seward.

An economic disaster declaration will allow the Legislature to appropriate money for assistance grants and allows you to make budget recommendations to accelerate the region's existing capital projects and provide funding for new ones. In addition to the disaster declaration, the Homer City Council encourages the Division of Economic Development to commit as many resources as possible to assist salmon permit holders who participate in the Commercial Fishing Revolving Loan program and may be unable to meet the terms of their loans because of UCI's low sockeye harvest.

Upper Cook Inlet is accustomed to harvesting nearly 3.5 million sockeye every year. This year, they harvested less than 20% of the 10, 20 or 40-year average harvest. Salmon is an important economic staple in these UCI communities and the failure of this year's fishery will have ripple effects throughout the economy. In light of the harmful impacts of the poor returns across the Kenai Peninsula, the Kenai Peninsula Borough will be considering a similar request at their October 23rd Borough Assembly meeting.

Thank you for considering taking this important step to protect the livelihoods of Alaskan families by declaring an economic disaster for the Upper Cook Inlet (UCI) fisheries region.

Sincerely,

Homer City Council



# EXHIBIT O

Introduced by: Mayor, Johnson, Hibbert, Smalley,  
Cooper, Dunne, Blakeley, Cox, Carpenter  
Date: 10/13/20  
Action: Adopted  
Vote: 9 Yes, 0 No, 0 Absent

**KENAI PENINSULA BOROUGH  
RESOLUTION 2020-073**

**A RESOLUTION DECLARING A LOCAL ECONOMIC DISASTER AND  
REQUESTING THE GOVERNOR OF THE STATE OF ALASKA DECLARE AN  
ECONOMIC DISASTER FOR THE UPPER COOK INLET FISHERIES REGION AND  
SUPPORTING A RECOVERY PLAN**

**WHEREAS,** the Upper Cook Inlet (“UCI”) 2020 commercial salmon harvest was approximately 1,136,817 fish, which is the lowest harvest of commercial salmon in the Upper Cook Inlet commercial salmon harvest since 1971 and approximately 59.6 percent less than the recent 10-year average of 2,8141,926 fish; and

**WHEREAS,** the estimated ex-vessel value of all salmon species harvested in UCI in 2020 was approximately \$5,237,115, which was 82.4 percent less than the previous 10-year average annual ex-vessel value of \$29,790,752; and

**WHEREAS,** sockeye salmon are the most valuable of the five species of Pacific salmon present in UCI and in 2020 the commercial sockeye harvest of 658,614 fish was approximately 74.3 percent less than the average annual harvest of 2,568,982million fish for the years 2010 to 2019 and the lowest UCI sockeye harvest since 1975; and

**WHEREAS,** approximately 1,126,120 Kenai River late-run sockeye salmon returned August 1 through August 24, 2020, which comprises about 62 percent of the total 1,813,386 sockeye counted by sonar in the Kenai River for the 2020 season; and

**WHEREAS,** AS 44.33.285 authorizes the governor, upon recommendation of the commissioner of commerce, community, and economic development, to designate by proclamation an area impacted by an economic disaster; and

**WHEREAS,** AS 44.33.310(3) provides that an economic disaster occurs where the annual income to workers in the designated area dropped below the average annual income for the base period, which is, for a fisheries failure, the years during which a fishery produced at economically representative levels as determined by the Department of Fish and Game; and

**WHEREAS,** this extremely low harvest was below the level necessary to cover the cost of operating and maintaining commercial drift, set net, processing and marketing businesses in the Kenai Peninsula Borough; and

**WHEREAS,** the Kenai Peninsula Borough is a political subdivision of the State of Alaska; and

**WHEREAS,** an economic disaster declaration by the Governor would allow the legislature to appropriate funds for assistance grants and the governor may recommend in the governor's budget that capital projects planned for the area be accelerated and other steps may be taken as provided in AS 44.33.285 - .310 to accelerate the recovery from this disaster; and

**WHEREAS,** the United Cook Inlet Drift Association and the Kenai Peninsula Fishermen's Association have both urged the Kenai Peninsula Borough to ask the Governor of the State of Alaska to declare an economic disaster for the Upper Cook Inlet sockeye salmon commercial fisheries for 2020 due to the failure of the 2020 season;

**NOW, THEREFORE, BE IT RESOLVED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH:**

**SECTION 1.** That the Kenai Peninsula Borough Assembly declares an economic disaster to exist in the areas of the Kenai Peninsula Borough affected by the 2020 Upper Cook Inlet Fisheries.


**SECTION 2.** That the Kenai Peninsula Borough Assembly respectfully requests that the Governor of the State of Alaska declare an economic disaster, as described in AS 44.33.285, to exist in the Upper Cook Inlet Fisheries Region and that the State of Alaska implement a recovery plan that provides private assistance and takes other actions that benefit commercial fisheries participants and others that rely on this important fisheries resource.

**SECTION 3.** The assembly also respectfully requests that the State of Alaska urge federal agencies to render private and public assistance to all affected persons and entities.

**SECTION 4.** That a copy of this resolution shall be provided to Governor Michael Dunleavy and Senator Peter Micciche.

**SECTION 5.** That this resolution becomes effective immediately upon its adoption.

**ADOPTED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH THIS 13TH DAY OF OCTOBER, 2020.**

  
\_\_\_\_\_  
Kelly Cooper, Assembly President

ATTEST:

  
\_\_\_\_\_  
John Blankenship, MMC, Borough Clerk



Yes: Blakeley, Bjorkman, Carpenter, Cox, Dunne, Hibbert, Johnson, Smalley, Cooper  
No: None  
Absent: None

# EXHIBIT P



## United Cook Inlet Drift Association

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43961 K-Beach Road, Suite E • Soldotna, Alaska 99669 • (907) 260-9436 • fax (907) 260-9438  
• [info@ucida.org](mailto:info@ucida.org) •

Date: September 30, 2020

Addressee: Wilbur Ross, Secretary of Commerce  
U.S. Department of Commerce  
1401 Constitution Ave NW  
Washington, DC 20230

Re: 2020 Economic Disaster Declaration

The United Cook Inlet Drift Association (UCIDA), as per the Magnuson-Stevens Act (MSA), brings forward Resolution 2020-010 and statement of findings declaring an economic disaster for the Upper Cook Inlet (UCI) drift gillnet salmon fishery. UCIDA also requests the Secretary of Commerce declare an economic disaster for the UCI drift gillnet salmon fishery and provide a supporting recovery plan.

In 2020, the Upper Cook Inlet drift gillnet sockeye salmon harvests of 283,772 directly resulted in an economic disaster. Sockeye salmon harvested in Cook Inlet were few in number and small in size with a run timing of up to four to six weeks later in the year. The State's management of the UCI salmon fishery limited harvest opportunities by both time and area. Historically, harvest opportunities in the Cook Inlet commercial fishery closed on December 31. However, now, under the current management regime, our fishery closes by August 15 while many salmon stocks are continuing to enter into the Cook Inlet salmon fishery area.

The salmon harvest data from 1985-2020 is attached for reference. The 2020 harvest of 283,772 sockeye was the smallest since 1960. Average weight per fish has also dropped alarmingly. In 2020, the sockeye salmon had the smallest weight at age since 1970. As a result, ex-vessel and first wholesale values dropped and the net production of meals from the fishery was reduced.

UCIDA requests directly from you, Mr. Secretary Ross, an economic disaster declaration for the 2020 Upper Cook Inlet sockeye salmon season.

UCIDA is prepared to discuss and answer questions concerning this disaster and looks forward to achieving the economic disaster declaration from your office. We will cooperate with you and your officials at the Department of Commerce, Congress and the State of Alaska to obtain adequate appropriations.

**United Cook Inlet Drift Association  
Resolution 2020-010**

**WHEREAS,** UCIDA is a duly registered, fishing community association recognized by the State of Alaska and the Federal Government; and

**WHEREAS,** UCIDA is a professional commercial salmon trade association; the Board of Directors are elected by participants of the fishery; and

**WHEREAS,** UCIDA provides for the wholesale or retail marketing, sale, delivery, distribution, or processing of drift gill net salmon and its by-products, caught in all waters of and adjacent to the Pacific Ocean north of a line extending east from Cape Douglas to the longitude of Cape Fairfield; including the negotiation of wholesale and/or retail prices, contracts, sale's agreements, distribution, processing, marketing, custom processing, agency, brokerage, and shipping agreements and contracts for its members; and

**WHEREAS,** UCIDA does research, obtains grants, and makes studies for the enhancement, rehabilitation and marketing of commercial drift gillnet caught salmon and makes proposals and lobbies for legislation and regulations to promote and better the commercial salmon industry; and

**WHEREAS,** UCIDA participates in legal actions determined by the Board of Directors to be in the best interest of the commercial fishing community; and

**WHEREAS,** UCIDA engages in and exercises such other powers as are now set out in the Alaska Cooperative Corporation Act, and any other lawful activities, except banking or insurance or the furnishing of electrical or telephone service; and

**WHEREAS,** UCIDA members own several hundred vessels that are directly used in the harvesting of salmon and other fish stocks, and members primarily reside in Alaska and the Pacific Northwest; and

**WHEREAS,** UCIDA members have invested many millions of dollars in vessels, limited access fishing privileges, homes, docks, vehicles, nets, gear and equipment.

**WHEREAS,** as of September 1, 2020, the UCI commercial sockeye salmon harvest by the drift gillnet fleet was approximately 283,772 individual fish, which is the lowest harvest of commercial salmon since 1960 and approximately 81% less than the recent 10-year average of 1,510,944; and

**WHEREAS,** the 2020 individual sockeye salmon weight at age was, on average, one pound less than 10 years ago, and the 283,772 fish harvested in UCI were worth approximately 86% less than the previous 10-year average ex-vessel value; and

**WHEREAS,** sockeye salmon are the most valuable of the five species of Pacific Salmon present in UCI, and in 2020, the commercial sockeye harvest was 283,773 individual fish; these numbers are 82.7% less than the previous 10-year annual average harvest of 1,649,779, harvest in 2018 was excluded, as it was also a disaster; and

**WHEREAS,** during 2020, the majority of the Kenai River Late-Run Sockeye Salmon returned during the month of August; and

**WHEREAS,** the drift gillnet fishermen were, by regulation, prevented from harvesting sockeye salmon during the historical time of year and from traditional areas as they migrate into UCI; and

**WHEREAS,** State regulators have abandoned abundance-based management practices in favor of highly prescriptive-based management practices causing insufficient fishing opportunity and resulting in economic disasters, reduced food supply and economies; and

**WHEREAS,** this extremely low harvest was below the level necessary to cover the cost of operating and maintaining the commercial drift gillnet fisher, processing and marketing businesses in the Kenai Peninsula Borough; and

**WHEREAS,** UCIDA has letters from the Cook Inlet Fisherman’s Fund, Copper River Seafoods, Cook Inlet Aquaculture Association, and the Kenai Peninsula Economic Development District who have all urged the UCIDA and others to request the Secretary of Commerce to declare an economic disaster for the Upper Cook Inlet sockeye salmon commercial fisheries due to the failure of the 2020 season; and

**NOW, THEREFORE, BE IT RESOLVED BY THE UCIDA BOARD OF DIRECTORS:**

**SECTION 1.** That UCIDA declares an economic disaster exists among the commercial drift gillnet fishing community as a result of the 2020 UCI sockeye salmon fishery.

**SECTION 2.** That the UCIDA Board of Directors respectfully request the State of Alaska declares an economic disaster for the 2020 UCI commercial drift gillnet sockeye salmon fishery.



**SECTION 3.** UCIDA respectfully requests the Secretary of Commerce declares an economic disaster, as provided for in MSA and the IFA, and implement a recovery plan that provides private and public assistance and takes other actions to benefit the commercial drift gillnet fishery participants and others that rely on this important fishery resource.

**SECTION 4.** UCIDA requests that copies of each economic disaster resolution be provided to the Kenai Peninsula Borough Assembly and Mayor, the Governor of Alaska as well as other affected parties.

**SECTION 5.** That this resolution becomes effective immediately upon its adoption.

**ADOPTED BY THE UCIDA BOARD OF DIRECTORS THIS 29TH DAY OF SEPTEMBER 2020.**

Sincerely,

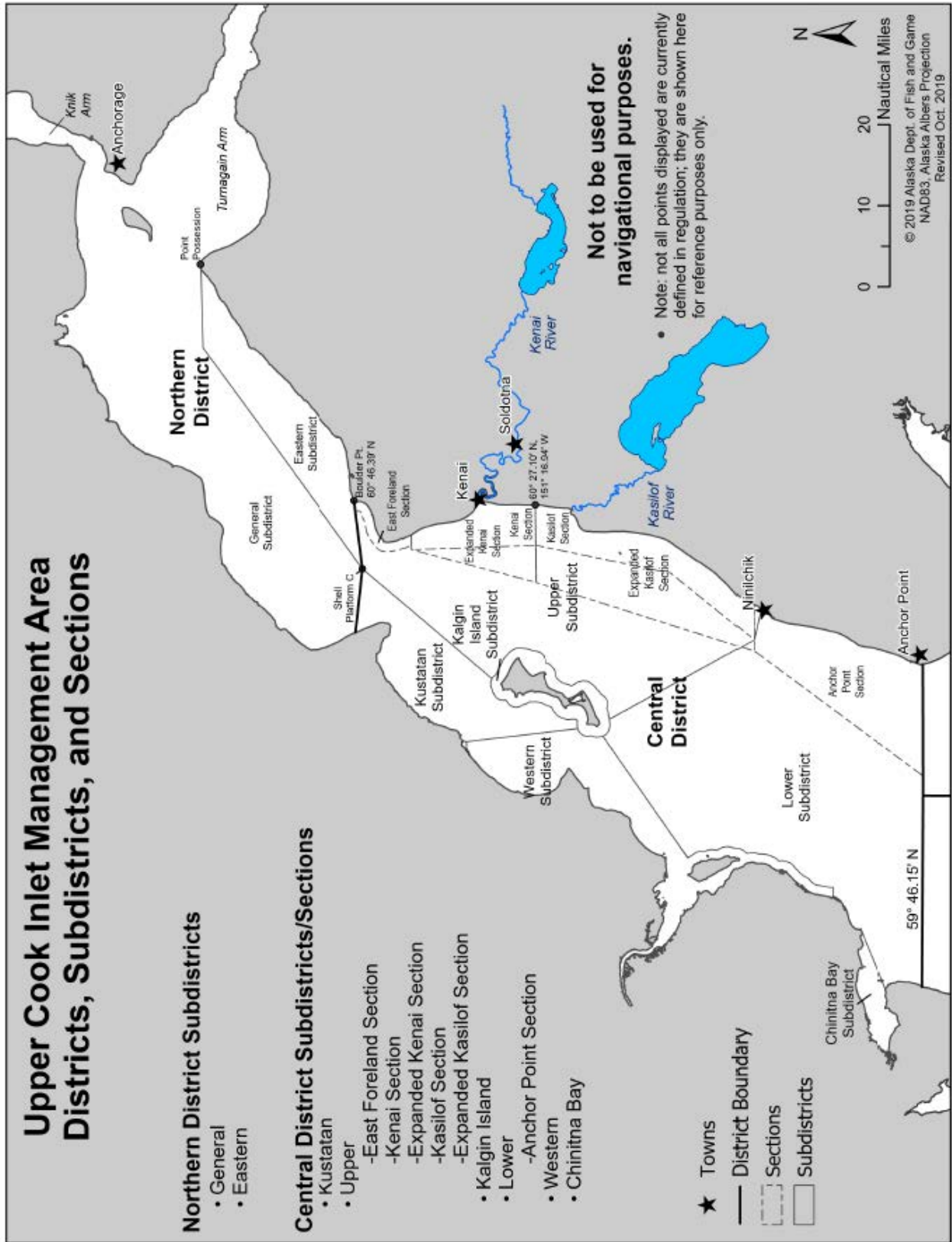
*Original Signed Document*

David Martin, President  
United Cook Inlet Drift Association

cc: State Director USDA Rural Development Jerry Ward  
Kenai Peninsula Borough Mayor Charlie Pierce  
Kenai Peninsula Borough Assembly  
Kenai City Mayor Brian Gabriel  
Homer City Mayor Ken Castner  
Soldotna City Mayor Peter Sprague  
Kenai Peninsula Economic Development District  
Cook Inlet Aquaculture Association  
Cook Inlet Processors:  
Pacific Star Seafoods  
Copper River Seafoods  
OBI Seafoods, Inc.

## Harvest Numbers

Number of salmon harvested by the Upper Cook Inlet Commercial Drift Gillnet Fishery 1985-2020						
Year	Chinook	Sockeye	Coho	Pink	Chum	Grand Total
1985	2,048	2,032,957	357,388	34,228	700,848	<b>3,127,469</b>
1986	1,834	2,837,857	506,818	615,522	1,012,669	<b>4,974,700</b>
1987	4,552	5,638,916	202,506	38,714	211,745	<b>6,096,433</b>
1988	2,237	4,139,358	278,828	227,885	582,699	<b>5,231,007</b>
1989		5	856	2	72	<b>935</b>
1990	621	2,305,742	247,453	323,955	289,521	<b>3,167,292</b>
1991	246	1,118,138	176,245	5,791	215,476	<b>1,515,896</b>
1992	615	6,069,495	267,300	423,738	232,955	<b>6,994,103</b>
1993	765	2,558,732	121,829	46,463	88,826	<b>2,816,615</b>
1994	464	1,901,475	310,114	256,248	249,748	<b>2,718,049</b>
1995	594	1,773,873	241,473	64,632	468,224	<b>2,548,796</b>
1996	389	2,205,067	171,434	122,728	140,987	<b>2,640,605</b>
1997	627	2,197,961	78,666	29,920	92,163	<b>2,399,337</b>
1998	335	599,396	83,338	200,382	88,080	<b>971,531</b>
1999	575	1,413,995	64,814	3,552	166,612	<b>1,649,548</b>
2000	270	656,427	131,478	90,508	118,074	<b>996,757</b>
2001	619	846,275	39,418	31,219	75,599	<b>993,130</b>
2002	415	1,367,251	125,831	224,229	224,587	<b>1,942,313</b>
2003	1,240	1,593,638	52,432	30,376	106,468	<b>1,784,154</b>
2004	1,104	2,529,642	199,587	235,524	137,041	<b>3,102,898</b>
2005	1,958	2,520,327	144,753	31,230	65,671	<b>2,763,939</b>
2006	2,782	784,771	98,473	212,808	59,965	<b>1,158,799</b>
2007	912	1,823,481	108,703	67,398	74,836	<b>2,075,330</b>
2008	653	983,303	89,428	103,867	46,010	<b>1,223,261</b>
2009	859	968,075	82,096	139,676	77,073	<b>1,267,779</b>
2010	538	1,587,657	110,275	164,005	216,977	<b>2,079,452</b>
2011	593	3,201,035	40,858	15,333	111,082	<b>3,368,901</b>
2012	218	2,924,144	74,678	303,216	264,513	<b>3,566,769</b>
2013	493	1,662,561	184,771	30,605	132,172	<b>2,010,602</b>
2014	382	1,501,678	76,932	417,344	108,345	<b>2,104,681</b>
2015	556	1,012,684	130,720	21,653	252,331	<b>1,417,944</b>
2016	606	1,266,746	90,242	268,908	113,258	<b>1,739,760</b>
2017	264	880,279	191,490	89,963	232,501	<b>1,394,497</b>
2018	503	400,269	108,906	83,535	108,216	<b>701,429</b>
2019	178	749,101	88,618	27,607	112,518	<b>978,022</b>
2020	126	<b>283,772</b>	24,419	293,122	24,696	<b>626,135</b>
2010-2019 Avg	421	1,510,944	109,691	139,796	159,437	1,920,289
2010-2019 (excludes 2018)	411	<b>1,649,779</b>	109,789	146,829	165,840	2,072,647
Average ALL	913	<b>1,887,209</b>	150,821	142,365	205,082	2,386,364



# EXHIBIT Q



## United Cook Inlet Drift Association

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43961 K-Beach Road, Suite E • Soldotna, Alaska 99669 • (907) 260-9436 • fax (907) 260-9438  
• [info@ucida.org](mailto:info@ucida.org) •

Date: September 30, 2020

Addressee: Wilbur Ross, Secretary of Commerce  
U.S. Department of Commerce  
1401 Constitution Ave NW  
Washington, DC 20230

Re: 2020 Pink Salmon Economic Disaster Declaration

The United Cook Inlet Drift Association (UCIDA), as per the Magnuson-Stevens Act (MSA), brings forward Resolution 2020-011 and statement of findings declaring a pink salmon economic disaster for the Upper Cook Inlet (UCI) drift gillnet salmon fishery. UCIDA also requests the Secretary of Commerce declare an economic disaster for the UCI drift gillnet pink salmon fishery and provide a supporting recovery plan.

In 2020, the Upper Cook Inlet drift gillnet pink salmon harvest of 293,121 was less than 2% of the total return. It is estimated that 10-20 million pink salmon entered the UCI Area. The poor and biased management led by the Alaska Department of Fish and Game's Commissioner, Doug Vincent-Lang, once again allowed wasteful underharvests of pink salmon.

Historically, pink salmon harvests occurred up to December 31. However, now under the current management regime, the fishery was effectively closed on July 16, when crippling time and area restrictions occurred. Pink salmon entered UCI approximately the third week in July and continued to increase in number until the third week in August. During that entire time period, due to the neglectful management by the ADF&G Commissioner, the commercial drift gillnet fleet was restricted from harvesting this abundant resource.

In 2020, a minimum of 4 million dollars of economic value was lost by the UCI Commercial Drift pink salmon fishery.

By modest estimates, the 2020 pink salmon return to UCI was between 10-20 million individual fish. Pink salmon can safely have a 60-70% exploitation rate, or an allowed harvest percentage of a total return. With a modest estimate of 12 million pink salmon in the 2020 return, an exploitation rate of approximately 60%, or 7 million fish, is both permissible and warranted. With an estimate of 20 million

pink salmon in the 2020 return, an exploitation of rate of 60%, or 12 million fish, could have occurred. This economic disaster request is based on available salmon stocks and foregone harvest opportunities.

Pink salmon in UCI average 3.2 lbs. and are some of the largest in the North Pacific Region. At 3.2 lbs., a pink salmon represents a meal for a family of four. As a National food source, 7 million pinks represents up to 7 million families with dinner on the table.

Historical harvest records are a poor indicator of this pink salmon economic disasters. Pink salmon returns display a 2-year cycle. In most of Alaska, pink returns occur in the odd-numbered years. UCI pink salmon are on an even-year cycle. The State of Alaska is aware of the even-year UCI pink cycle.

In 2020, while commercial salmon fishers sat idle this summer, 10 to 20 million pink salmon went unharvested in Cook Inlet and this wasted resource is now rotting in our rivers and streams, see Attachments 1 and 2. The commercial catch of pink salmon was only 293,121 fish. This is, once again, a fishery disaster caused by State of Alaska salmon management policies and practices that do not meet the requirements of the MSA and the National Standards.

Equally troubling is the Alaska Board of Fisheries (BOF) adopted 5 AAC 21.354. Cook Inlet Pink Salmon Management Plan which states:“(a) The purpose of this management plan is to allow for the harvest of surplus pink salmon in the Upper Subdistrict for set gillnet and drift gillnet gear.” The regulation goes on to indicate that “gillnets may not have a mesh size greater than four and three quarters inches.” This mesh size restriction applies to both drift and set gillnet gear. Following the adoption of this mesh size restriction, hundreds of Drift/ESSN fishermen purchased new nets with this smaller mesh size in order to legally participate in the pink salmon harvests. A large, harvestable surplus of pink salmon was available. Commercial Drift/ESSN fishermen were legally licensed, ready, willing and able to participate in this fishery. Further, many fishermen personally asked and encouraged the State of Alaska to conduct a pink salmon fishery in UCI. As fishermen, we personally observed numerous pink salmon migrating along the ESSN beaches and through the waters of UCI.

The 2020 pink salmon economic disaster occurred due to the State’s decision to deny a pink salmon fishery. 2020 did not need to be such a disaster for UCI commercial fishermen. Poor and biased management led by the Alaska Department of Fish and Game’s Commissioner, Doug Vincent-Lang, once again allowed wasteful underharvests of pink salmon.

In recent years, invasive species are taking over essential salmon habitat, habitat degradation is not being monitored or addressed and the State’s response is to cut funding for management, including not collecting scientific data and management indices necessary for MSY management. These cuts include eliminating smolt outmigration counters, eliminating weirs used to count returning salmon,

eliminating a sonar counter and pulling the remaining sonar counters before the entire run is in the river. The result is millions of unharvested surplus salmon and disastrous economic harm to the commercial fishing industry and fishing communities along with biological harm to the salmon resource. With up to a \$2.0 billion annual budget deficit, the State has no financial capacity (or apparent interest) to address the emerging challenges to this fishery in years to come. If this is what “best suited” fishery management looks like, the future is dire for Cook Inlet fishing communities.

Cook Inlet commercial fishing groups, including UCIDA, CIFF and other fishing communities, are sending economic disaster requests to our local governments, the State of Alaska and the Secretary of Commerce. These disaster declarations and requests are occurring because of disastrous salmon harvests. UCIDA and CIFF along with other members of the fishing community are anxiously awaiting the reaction of the Secretary of Commerce and the State of Alaska concerning these economic disasters.

UCIDA requests directly from you, Mr. Secretary Ross, an economic disaster declaration for the 2020 Upper Cook Inlet sockeye salmon season.

UCIDA is prepared to discuss and answer questions concerning this disaster and looks forward to achieving the economic disaster declaration from your office. We will cooperate with you and your officials at the Department of Commerce, Congress and the State of Alaska to obtain adequate appropriations.

**United Cook Inlet Drift Association  
Resolution 2020-011**

**WHEREAS,** UCIDA is a duly registered, fishing community association recognized by the State of Alaska and the Federal Government; and

**WHEREAS,** UCIDA is a professional commercial salmon trade association; the Board of Directors are elected by participants of the fishery; and

**WHEREAS,** UCIDA provides for the wholesale or retail marketing, sale, delivery, distribution, or processing of drift gill net salmon and its by-products, caught in all waters of and adjacent to the Pacific Ocean north of a line extending east from Cape Douglas to the longitude of Cape Fairfield; including the negotiation of wholesale and/or retail prices, contracts, sale’s agreements, distribution, processing, marketing, custom processing, agency, brokerage, and shipping agreements and contracts for its members; and

**WHEREAS,** UCIDA does research, obtains grants, and makes studies for the enhancement, rehabilitation and marketing of commercial drift

gillnet caught salmon and makes proposals and lobbies for legislation and regulations to promote and better the commercial salmon industry; and

**WHEREAS,** UCIDA participates in legal actions determined by the Board of Directors to be in the best interest of the commercial fishing community; and

**WHEREAS,** UCIDA engages in and exercises such other powers as are now set out in the Alaska Cooperative Corporation Act, and any other lawful activities, except banking or insurance or the furnishing of electrical or telephone service; and

**WHEREAS,** UCIDA members own several hundred vessels that are directly used in the harvesting of salmon and other fish stocks, and members primarily reside in Alaska and the Pacific Northwest; and

**WHEREAS,** UCIDA members have invested many millions of dollars in vessels, limited access fishing privileges, homes, docks, vehicles, nets, gear and equipment.

**WHEREAS,** the drift gillnet fishermen were, by regulation, prevented from harvesting pink salmon during the historical time of year and from traditional areas as they migrate into UCI; and

**WHEREAS,** State regulators have abandoned abundance-based management practices in favor of highly prescriptive-based management practices causing insufficient fishing opportunity and resulting in economic disasters, reduced food supply and economies; and

**WHEREAS,** this extremely low harvest was below the level necessary to cover the cost of operating and maintaining the commercial drift gillnet fisher, processing and marketing businesses in the Kenai Peninsula Borough; and

**WHEREAS,** UCIDA has letters from the Cook Inlet Fisherman's Fund, Copper River Seafoods, Cook Inlet Aquaculture Association, and the Kenai Peninsula Economic Development District who have all urged the UCIDA and others to request the Secretary of Commerce to declare an economic disaster for the Upper Cook Inlet pink salmon commercial fisheries due to the failure of the 2020 season; and



**NOW, THEREFORE, BE IT RESOLVED BY THE UCIDA BOARD OF DIRECTORS:**

**SECTION 1.** That UCIDA declares an economic disaster exists among the commercial drift gillnet fishing community as a result of the 2020 UCI pink salmon fishery.

**SECTION 2.** That the UCIDA Board of Directors respectfully requests the State of Alaska declares an economic disaster for the 2020 UCI commercial drift gillnet pink salmon fishery.

**SECTION 3.** UCIDA respectfully requests the Secretary of Commerce declares an economic disaster, as provided for in MSA and the IFA, and implement a recovery plan that provides private and public assistance and takes other actions to benefit the commercial drift gillnet fishery participants and others that rely on this important fishery resource.

**SECTION 4.** UCIDA requests that copies of each economic disaster resolution be provided to the Kenai Peninsula Borough Assembly and Mayor, the Governor of Alaska as well as other affected parties.

**SECTION 5.** That this resolution becomes effective immediately upon its adoption.

**ADOPTED BY THE UCIDA BOARD OF DIRECTORS THIS 29TH DAY OF SEPTEMBER 2020.**

Sincerely,

*Original Signed Document*

David Martin, President  
United Cook Inlet Drift Association

cc: State Director USDA Rural Development Jerry Ward  
Kenai Peninsula Borough Mayor Charlie Pierce  
Kenai Peninsula Borough Assembly  
Kenai City Mayor Brian Gabriel  
Homer City Mayor Ken Castner  
Soldotna City Mayor Peter Sprague  
Kenai Peninsula Economic Development District

Cook Inlet Aquaculture Association

Cook Inlet Processors:

Pacific Star Seafoods

Copper River Seafoods

OBI Seafoods, Inc.

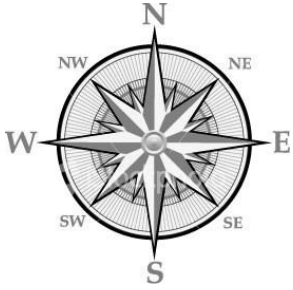
Attachment 1. Dead pink salmon Kenai River at approximately River Mile 18 on September 19, 2020. It is estimated there is one carcass per foot on the east bank only.



Attachment 2. Dead pink salmon Kenai River at approximately River Mile 18 on September 19, 2020. It is estimated there is one carcass per foot on the east bank only.



# EXHIBIT R



# COOK INLET FISHERMAN'S FUND

Non-Profit Advocate for all Commercial Gear Types in Area H  
PO Box 39408 / Ninilchik, AK 99639 / Phone 907-252-2752 / Fax 907- 567-3306

Date: October 3, 2020

Addressee: Wilbur Ross, Secretary of Commerce  
U.S. Department of Commerce  
1401 Constitution Ave NW  
Washington, DC 20230

Re: 2020 Sockeye Salmon Economic Disaster Declaration

Cook Inlet Fisherman's Fund (CIFF) requests an economic disaster declaration for the 2020 commercial Drift Gillet (Drift)/East Side Set Net (ESSN) sockeye salmon fishery in Upper Cook Inlet (UCI), Alaska.

CIFF was established in 1976 to represent the economic interests of commercial fishermen, small business owners and multi-generational commercial fishing families located in the Cook Inlet region of Southcentral Alaska. CIFF membership includes multiple commercial fishing gear types: set gillnet, drift gillnet, seine net small business owners and various federally recognized subsistence fishermen. Additionally, our membership is located in Alaska as well as the rest of the country. CIFF is defined as a regional fishing community by the Magnuson-Stevens Act (MSA):

16 U.S.C. 1802 MSA § 3

“(17) The term “fishing community” means a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.

(14) The term ‘regional fishery association’ means an association formed for the mutual benefit of members —

(A) to meet social and economic needs in a region or subregion; and

(B) comprised of persons engaging in the harvest or processing of fishery resources in that specific region or subregion or who otherwise own or operate businesses substantially dependent upon a fishery.”

CIFF is aware of the newly adopted Federal Disaster Assistance policy and guidelines published by the NOAA Fisheries Office of Sustainable Fisheries, June 9, 2020.

#### “Relevant Legislation

NOAA Fisheries has the authority to administer fishery disaster assistance under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Interjurisdictional Fisheries Act (IFA). Under both statutes, a request for a fishery disaster determination is generally made by a state governor, or by an elected or duly appointed representative of an affected fishing community. The Secretary of Commerce (Secretary), however, may also initiate a review at his/her own discretion. More information is available on the process of requesting fishery disaster assistance, and below are additional details on the relevant provisions of the MSA and IFA.”

CIFF brings this economic disaster request under the provision of “by an elected or duly appointed representative of an affected fishing community” or “The Secretary of Commerce may also initiate a review at his/her own discretion.”

#### MSA Section 312(a)

“Under MSA Section 312(a), the Secretary is authorized to determine a commercial fishery failure due to a fishery resource disaster of either: a) natural causes, b) man-made causes beyond the control of fishery managers to mitigate through conservation and management measures, including regulatory restrictions (including those imposed as a result of judicial action) imposed to protect human health or the marine environment, or c) undetermined causes.”

CIFF fully supports the findings and economic disaster Resolution 2020-010 by United Cook Inlet Drift Association (UCIDA) for the Cook Inlet Drift fishery. We have received and reviewed this document.

Further, CIFF is aware of the findings and economic disaster resolution(s) that are before the Kenai Peninsula Borough (KPB) Mayor and Assembly. We are more than willing to support and work with UCIDA and the KPB to secure the necessary economic disaster declaration by the Secretary of Commerce.

The economic value of the 2020 ESSN harvest was 83.8% less than the previous 10-year average. See Attachments 1 and 2.

The economic value of the 2020 Drift harvest was 88% less than the previous 10-year average. See Attachments 4 and 5.

Economically, the 2020 combined ex-vessel value by the Drift/ESSN fishing groups is \$3,799,311, which represents a combined 86.4% economic loss when compared to the 10-year averages.

The State of Alaska, once again, has managed the fishery to allow wasteful over-escapement of sockeye salmon into the Kenai and Kasilof Rivers. The over-escapement was measured at 1.1 million fish, an amount nearly double the entire commercial catch of 561,821 sockeye. Equally troubling is while commercial salmon fishers sat idle this summer, 10 to 20 million pink salmon went unharvested in Cook Inlet and this wasted resource is now rotting in our rivers and streams. The commercial catch of pink salmon was only 354,432 fish. This is, once again, a fishery disaster caused by State of Alaska salmon management policies and practices that do not meet the requirements of the MSA and the National Standards.

Please, just take a look around. In recent years, Chinook returns have plummeted in Cook Inlet. Chinook, sockeye, coho and chums are returning smaller in size and abundance. Invasive species are taking over essential salmon habitat. Chinook habitat degradation is not being monitored or addressed and the State's response is to further restrict commercial fishing and cut funding for management. These management cuts include eliminating scientific data collection, eliminating indices necessary for MSY management, eliminating smolt outmigration counters, eliminating weirs used to count returning salmon, eliminating a sonar counter, and pulling the remaining sonar counters before the entire run is in the river. The result is millions of unharvested surplus salmon and disastrous economic harm to the commercial fishing industry and fishing communities along with biological harm to the salmon resource. With up to a \$2.0 billion annual budget deficit, the State has no financial capacity (or apparent interest) to address the emerging challenges to this fishery in years to come.

CIFF is prepared to discuss and answer questions concerning this disaster and looks forward to achieving the economic disaster declaration from your office. We will cooperate with you and your officials at the Department of Commerce, Congress, the State of Alaska and the KPB to obtain adequate appropriations.



**Cook Inlet Fisherman's Fund**  
**Resolution 2020-019**

- WHEREAS,** CIFF is a duly registered, fishing community association legally recognized by the State of Alaska and the Federal Government; and
- WHEREAS,** CIFF is registered as a 501(c)(6) Domestic Nonprofit Corporation with the Federal Government; and
- WHEREAS,** CIFF is a professional commercial salmon trade association; the Board of Directors are elected by participants of the fishery; and
- WHEREAS,** CIFF provides for the wholesale or retail marketing, sale, delivery, distribution, or processing of Drift/ESSN salmon and its by-products, caught in all waters of and adjacent to the Pacific Ocean north of a line extending east from Cape Douglas to the longitude of Cape Fairfield; including the negotiation of wholesale and/or retail prices, contracts, sale's agreements, distribution, processing, marketing, custom processing, agency, brokerage, and shipping agreements and contracts for its members; and
- WHEREAS,** CIFF does research, obtains grants, and makes studies for the enhancement, rehabilitation and marketing of commercial Drift/ESSN caught salmon and makes proposals and lobbies for legislation and regulations to promote and better the commercial salmon industry; and
- WHEREAS,** CIFF participates in legal actions determined by the Board of Directors to be in the best interest of the commercial fishing community; and
- WHEREAS,** CIFF members own several hundred vessels and skiffs that are directly used in the harvesting of salmon and other fish stocks, and members primarily reside in Alaska, but members are also in 28 other US states; and
- WHEREAS,** CIFF members have invested tens of millions of dollars in vessels, skiffs, limited access fishing privileges, setnet fishing sights, gear shops and sheds, homes, docks, vehicles, nets, gear and equipment; and

**WHEREAS,** the 2020 lost economic value of the ESSN Fishery was 83.8%, the lost economic value of the Drift Fishery was 88%; and

**WHEREAS,** during 2020, the majority of the Kenai River Late-Run Sockeye Salmon returned during the month of August; and

**WHEREAS,** the Drift/ESSN salmon fishermen were, by regulation, prevented from harvesting sockeye salmon during the historical time of year and from traditional areas as they migrate into UCI; and

**WHEREAS,** State regulators have abandoned abundance-based management practices in favor of highly prescriptive-based management practices causing insufficient fishing opportunity and resulting in economic disasters, reduced food supply, economies and future salmon returns; and

**WHEREAS,** this extremely low harvest was below the level necessary to cover the cost of operating and maintaining the commercial Drift/ESSN family fishing businesses and the processing and marketing businesses in the Kenai Peninsula Borough; and

**WHEREAS,** CIFF sent or received letters of support involving Copper River Seafoods, Cook Inlet Aquaculture Association, the Kenai Peninsula Borough Mayor and Assembly and the Kenai Peninsula Economic Development District urging CIFF and others to request the Secretary of Commerce to declare an economic disaster for the 2020 Upper Cook Inlet commercial Drift/ESSN sockeye salmon fishery.

**NOW, THEREFORE, BE IT RESOLVED BY THE CIFF BOARD OF DIRECTORS:**

**SECTION 1.** That CIFF, an elected regional fishing community, declares an economic disaster exists among the commercial Drift/ESSN fishing communities as a result of the 2020 UCI sockeye salmon fishery.

**SECTION 2.** That the CIFF Board of Directors respectfully request the State of Alaska declares an economic disaster for the 2020 UCI commercial Drift/ESSN sockeye salmon fisheries.

**SECTION 3.** CIFF respectfully requests the Secretary of Commerce declares an economic disaster, as provided for in MSA and the IFA, and implements a recovery plan that provides private and public assistance and takes other actions to benefit the commercial Drift/ESSN fishery participants and others that rely on this important fishery resource.

**SECTION 4.** CIFF requests that copies of each economic disaster resolution be provided to the Kenai Peninsula Borough Assembly and Mayor, the Governor of Alaska as well as other affected parties.

**SECTION 5.** That this resolution becomes effective immediately upon its adoption.

**ADOPTED BY THE CIFF BOARD OF DIRECTORS THIS 3RD DAY OF OCTOBER 2020.**

Sincerely,

*Original Signed Document*

John McCombs, President  
Cook Inlet Fisherman's Fund

cc: State Director USDA Rural Development Jerry Ward  
US Senator Lisa Murkowski  
US Senator Dan Sullivan  
US Senator Maria Cantwell  
US Representative Don Young  
AK Senator Peter Micciche  
AK Senator Gary Stevens  
AK House Speaker Bryce Edgmon  
AK Representative Sarah Vance  
AK Representative Ben Carpenter  
AK Representative Louise Stutes  
AK Representative Jonathan Kreiss-Tomkins  
Kenai Peninsula Borough Mayor Charlie Pierce  
Kenai Peninsula Borough Assembly  
Kenai City Mayor Brian Gabriel

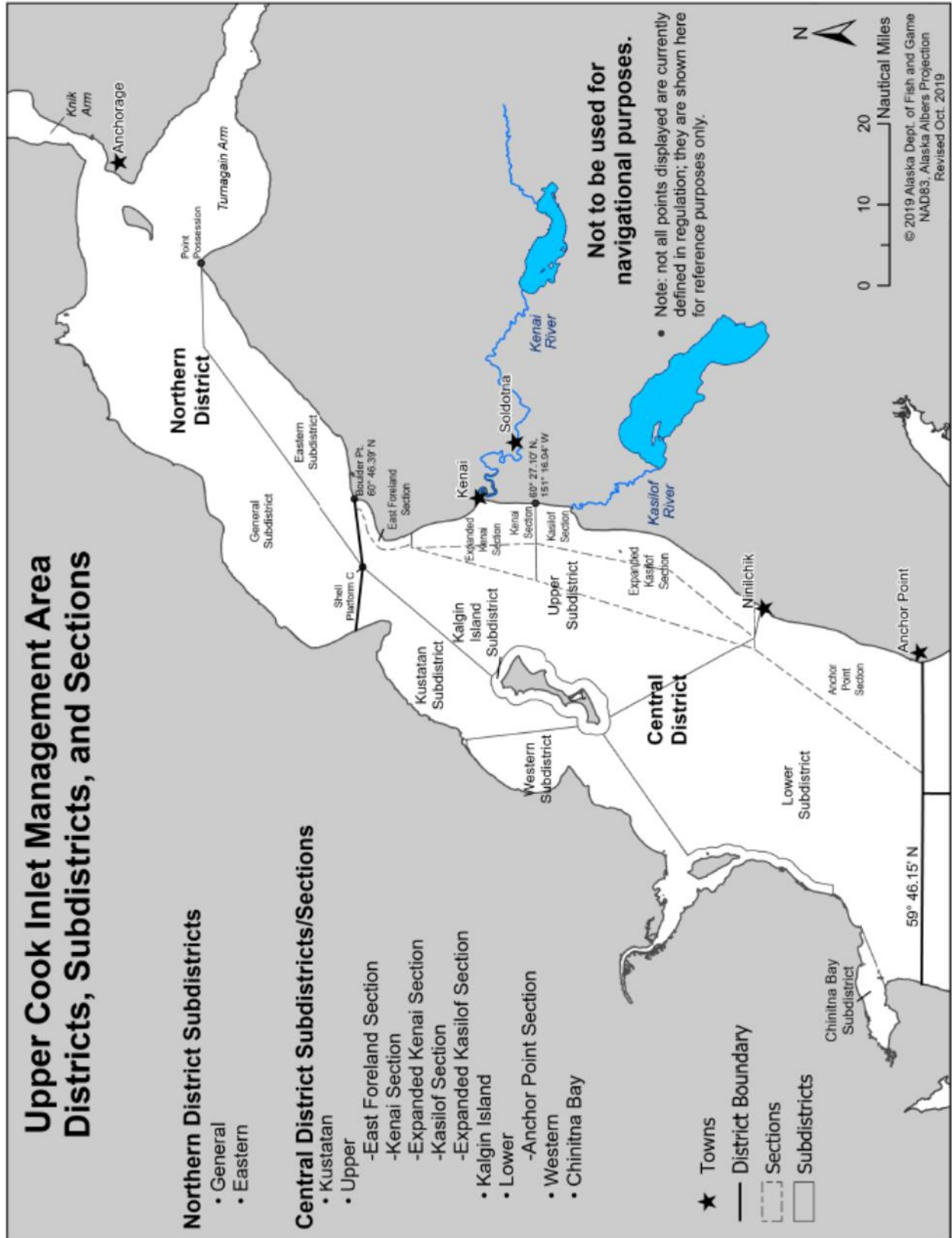
Homer City Mayor Ken Castner  
Soldotna City Mayor Peter Sprague  
Kenai Peninsula Economic Development District  
Cook Inlet Aquaculture Association  
Cook Inlet Processors:  
    Pacific Star Seafoods  
    Copper River Seafoods  
    OBI Seafoods, Inc.

Attachment 1

Number of Salmon Harvested by the Commercial ESSN Fishery, 1985-2020						
Year	Chinook	Sockeye	Coho	Pink	Chum	Grand Total
1985	9,831	696,136	33,337	9,529	941	749,774
1986	11,897	908,292	39,007	254,727	1,674	1,215,597
1987	13,609	1,240,292	24,797	37,494	1,370	1,317,562
1988	6,670	632,868	14,632	57,779	1,444	713,393
1989	4,946	938,712	25,103	22,344	2,449	993,554
1990	1,364	198,652	13,028	65,469	689	279,202
1991	2,363	400,927	10,958	1,754	290	416,292
1992	4,378	804,753	18,205	89,811	530	917,677
1993	5,125	443,007	8,908	21,835	858	479,733
1994	7,819	672,151	27,015	85,996	915	793,896
1995	5,569	413,046	14,994	38,229	1,317	473,155
1996	5,636	578,834	16,145	35,092	728	636,435
1997	5,152	646,006	4,541	23,052	403	679,154
1998	2,306	233,944	8,335	175,276	411	420,272
1999	9,463	1,092,946	11,923	9,357	373	1,124,062
2000	3,684	529,747	11,078	23,746	325	568,580
2001	6,009	870,019	4,246	32,998	248	913,520
2002	9,478	1,303,158	35,153	214,771	1,790	1,564,350
2003	14,810	1,746,841	10,171	16,474	1,933	1,790,229
2004	21,684	2,235,810	30,154	107,838	2,019	2,397,505
2005	21,597	2,534,345	19,543	13,619	710	2,589,814
2006	9,956	1,301,275	22,167	184,990	347	1,518,735
2007	12,292	1,353,407	23,610	69,918	521	1,459,748
2008	7,573	1,303,236	21,823	59,620	433	1,392,685
2009	5,588	905,853	11,435	55,845	319	979,040
2010	7,059	1,085,789	32,683	121,817	3,035	1,250,383
2011	7,697	1,877,939	15,560	15,527	1,612	1,918,335
2012	705	96,675	6,537	159,003	49	262,969
2013	2,988	921,533	2,266	14,671	102	941,560
2014	2,301	724,398	5,908	213,616	548	946,771
2015	7,781	1,481,336	17,948	22,983	2,248	1,532,296
2016	6,759	997,853	11,606	103,503	1,203	1,120,924
2017	4,779	832,220	29,916	59,995	601	927,511
2018	2,311	289,841	4,705	21,822	78	318,757
2019	2,246	784,543	6,511	32,746	528	826,574
2020	739	279,049	298	11,432	31	291,549
Average 2010-2019	4,463	909,213	13,364	76,568	1,000	1,004,608
Average 2010-2019 <sup>(a, b)</sup>	4,880	999,495	14,123	67,409	1,106	1,087,012
Average 1985-2020	7,060	926,540	16,507	69,019	919	1,020,044
a. Excludes 2018 economic disaster						
b. Excludes 2012 declared economic disaster						

Attachment 2

Economic Value of Salmon Harvested by Commercial ESSN Fishery, 2005-2020				
Year	Average Weight (lbs)	Sockeye Harvest	Average Price/Lb	Economic Value
2005	6.1	2,534,345	\$0.95	\$14,686,529
2006	5.1	1,301,275	\$1.10	\$7,300,153
2007	6.3	1,353,407	\$1.05	\$8,952,787
2008	6.3	1,303,236	\$1.10	\$9,031,425
2009	6.4	905,853	\$1.10	\$6,377,205
2010	6.3	1,085,789	\$1.75	\$11,970,824
2011	6.5	1,877,939	\$1.50	\$18,309,905
2012 <sup>a</sup>	6.9	96,675	\$1.50	\$1,000,586
2013	6.5	921,533	\$2.25	\$13,477,420
2014	6.6	724,398	\$2.25	\$10,757,310
2015	5.5	1,481,336	\$1.60	\$13,035,757
2016	5.9	997,853	\$1.50	\$8,830,999
2017	5.9	832,220	\$1.85	\$9,083,681
2018 <sup>b</sup>	4.7	289,841	\$2.04	\$2,778,996
2019	5.2	784,543	\$1.85	\$7,547,304
2020	5.0	279,049	\$1.35	\$1,883,581
Average 2010-2019 <sup>(a,b)</sup>		1,088,201		\$11,626,650
Average 2005-2020 <sup>(a,b)</sup>		1,170,198		\$9,064,029
Numerical 10-Year Lost Harvest		74.36%		83.80%
Economical 16-Year Lost Harvest		76.15%		79.22%
a. Excludes 2018 economic disaster				
b. Excludes 2012 declared economic disaster				



## Attachment 4

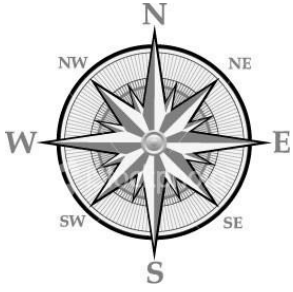
Number of salmon harvested by the Upper Cook Inlet Commercial Drift Fishery 1985-2020						
Year	Chinook	Sockeye	Coho	Pink	Chum	Grand Total
1985	2,048	2,032,957	357,388	34,228	700,848	3,127,469
1986	1,834	2,837,857	506,818	615,522	1,012,669	4,974,700
1987	4,552	5,638,916	202,506	38,714	211,745	6,096,433
1988	2,237	4,139,358	278,828	227,885	582,699	5,231,007
1989		5	856	2	72	935
1990	621	2,305,742	247,453	323,955	289,521	3,167,292
1991	246	1,118,138	176,245	5,791	215,476	1,515,896
1992	615	6,069,495	267,300	423,738	232,955	6,994,103
1993	765	2,558,732	121,829	46,463	88,826	2,816,615
1994	464	1,901,475	310,114	256,248	249,748	2,718,049
1995	594	1,773,873	241,473	64,632	468,224	2,548,796
1996	389	2,205,067	171,434	122,728	140,987	2,640,605
1997	627	2,197,961	78,666	29,920	92,163	2,399,337
1998	335	599,396	83,338	200,382	88,080	971,531
1999	575	1,413,995	64,814	3,552	166,612	1,649,548
2000	270	656,427	131,478	90,508	118,074	996,757
2001	619	846,275	39,418	31,219	75,599	993,130
2002	415	1,367,251	125,831	224,229	224,587	1,942,313
2003	1,240	1,593,638	52,432	30,376	106,468	1,784,154
2004	1,104	2,529,642	199,587	235,524	137,041	3,102,898
2005	1,958	2,520,327	144,753	31,230	65,671	2,763,939
2006	2,782	784,771	98,473	212,808	59,965	1,158,799
2007	912	1,823,481	108,703	67,398	74,836	2,075,330
2008	653	983,303	89,428	103,867	46,010	1,223,261
2009	859	968,075	82,096	139,676	77,073	1,267,779
2010	538	1,587,657	110,275	164,005	216,977	2,079,452
2011	593	3,201,035	40,858	15,333	111,082	3,368,901
2012	218	2,924,144	74,678	303,216	264,513	3,566,769
2013	493	1,662,561	184,771	30,605	132,172	2,010,602
2014	382	1,501,678	76,932	417,344	108,345	2,104,681
2015	556	1,012,684	130,720	21,653	252,331	1,417,944
2016	606	1,266,746	90,242	268,908	113,258	1,739,760
2017	264	880,279	191,490	89,963	232,501	1,394,497
2018	503	400,269	108,906	83,535	108,216	701,429
2019	178	749,101	88,618	27,607	112,518	978,022
2020	126	283,772	24,419	293,122	24,696	626,135
2010-2019 Avg	421	1,510,944	109,691	139,796	159,437	1,920,289
2010-2019 (excludes 2018)	411	1,649,779	109,789	146,829	165,840	2,072,647
Average ALL	913	1,887,209	150,821	142,365	205,082	2,386,364



Attachment 5

Economic Value of Sockeye Salmon Harvested by the Drift Fishery 2005-2020*				
Year	Average Wt (lbs)	Sockeye Harvest	Average \$/lb.	Economic Value \$
2005	6.1	2,520,327	0.95	14,605,295
2006	5.1	784,771	1.10	4,402,565
2007	6.3	1,823,481	1.05	12,062,327
2008	6.3	983,303	1.10	6,814,290
2009	6.4	968,075	1.10	6,815,248
2010	6.3	1,587,657	1.75	17,503,918
2011	6.5	3,201,035	1.50	31,210,091
2012	6.9	2,924,144	1.50	30,264,890
2013	6.5	1,662,561	2.25	24,314,955
2014	6.6	1,501,678	2.25	22,299,918
2015	5.5	1,012,684	1.60	8,911,619
2016	5.9	1,266,746	1.50	11,210,702
2017	5.9	880,279	1.85	9,608,245
2018	4.7	440,269	2.04	4,221,299
2019	5.2	749,101	1.85	7,214,142
2020	5.0	283,772	1.35	1,915,461
2010 -2019 Average				16,675,978
* Source: ADF&G Annual Management Reports				
2010-2019 Average Economic Value:			\$16,675,978	
2020 Economic Value:			\$1,915,461	
2020 Lost Economic Value:			88%	

# EXHIBIT S



# COOK INLET FISHERMAN'S FUND

Non-Profit Advocate for all Commercial Gear Types in Area H  
PO Box 39408 / Ninilchik, AK 99639 / Phone 907-252-2752 / Fax 907- 567-3306

Date: October 7, 2020

Addressee: Wilbur Ross, Secretary of Commerce  
U.S. Department of Commerce  
1401 Constitution Ave NW  
Washington, DC 20230

Re: 2020 Pink Salmon Economic Disaster Declaration

Cook Inlet Fisherman's Fund (CIFF) requests an economic disaster declaration for the 2020 commercial Drift Gillnet (Drift)/East Side Set Net (ESSN) pink salmon fishery in Upper Cook Inlet (UCI), Alaska.

CIFF was established in 1976 to represent the economic interests of commercial fishermen, small business owners and multi-generational commercial fishing families located in the Cook Inlet region of Southcentral Alaska. CIFF membership includes multiple commercial fishing gear types: set gillnet, drift gillnet, seine net small business owners and various federally recognized subsistence fishermen. Additionally, our membership is located in Alaska as well as the rest of the country. CIFF is defined as a regional fishing community by the Magnuson-Stevens Act (MSA):

16 U.S.C. 1802 MSA § 3

“(17) The term “fishing community” means a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.

(14) The term ‘regional fishery association’ means an association formed for the mutual benefit of members —

(A) to meet social and economic needs in a region or subregion; and

(B) comprised of persons engaging in the harvest or processing of fishery resources in that specific region or subregion or who otherwise own or operate businesses substantially dependent upon a fishery.”

CIFF is aware of the newly adopted Federal Disaster Assistance policy and guidelines published by the NOAA Fisheries Office of Sustainable Fisheries, June 9, 2020.

#### “Relevant Legislation

NOAA Fisheries has the authority to administer fishery disaster assistance under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Interjurisdictional Fisheries Act (IFA). Under both statutes, a request for a fishery disaster determination is generally made by a state governor, or by an elected or duly appointed representative of an affected fishing community. The Secretary of Commerce (Secretary), however, may also initiate a review at his/her own discretion. More information is available on the process of requesting fishery disaster assistance, and below are additional details on the relevant provisions of the MSA and IFA.”

CIFF brings this economic disaster request under the provision of “by an elected or duly appointed representative of an affected fishing community” or “The Secretary of Commerce may also initiate a review at his/her own discretion.”

#### MSA Section 312(a)

“Under MSA Section 312(a), the Secretary is authorized to determine a commercial fishery failure due to a fishery resource disaster of either: a) natural causes, b) man-made causes beyond the control of fishery managers to mitigate through conservation and management measures, including regulatory restrictions (including those imposed as a result of judicial action) imposed to protect human health or the marine environment, or c) undetermined causes.”

CIFF fully supports the pink salmon findings and economic disaster Resolution 2020-011 by United Cook Inlet Drift Association (UCIDA) for the Cook Inlet Drift fishery. We have received and reviewed this document.

Further, CIFF is aware of the findings and economic disaster resolution(s) that are before the Kenai Peninsula Borough (KPB) Mayor and Assembly. We are more than willing to support and work with UCIDA and the KPB to secure the necessary economic disaster declaration by the Secretary of Commerce.

In 2020, a minimum of 3 million dollars of economic value was lost by the UCI Commercial ESSN **pink salmon fishery**.

In 2020, a minimum of 4 million dollars of economic value was lost by the UCI Commercial Drift **pink salmon fishery**.

Economically, the 2020 combined pink salmon ex-vessel lost value by the commercial Drift/ESSN fisheries was in excess of 7 million dollars.

By modest estimates, the 2020 pink salmon return to UCI was between 10-20 million individual fish. Pink salmon can safely have a 60-70% exploitation rate, or an allowed harvest percentage of a total return. With a modest estimate of 12 million pink salmon in the 2020 return, an exploitation rate of approximately 60%, or 7 million fish, is both permissible and warranted. With an estimate of 20 million pink salmon in the 2020 return, an exploitation of rate of 60%, or 12 million fish, could have occurred. This economic disaster request is based on available salmon stocks and foregone harvest opportunities.

Pink salmon in UCI average 3.2 lbs. and are some of the largest in the North Pacific Region. At 3.2 lbs., a pink salmon represents a meal for a family of four. As a National food source, 7 million pinks represents up to 7 million families with dinner on the table.

Historical harvest records are a poor indicator of this pink salmon economic disasters. Pink salmon returns display a 2-year cycle. In most of Alaska, pink returns occur in the odd-numbered years. UCI pink salmon are on an even-year cycle. The State of Alaska is aware of the even-year UCI pink cycle.

In 2020, while commercial salmon fishers sat idle this summer, 10 to 20 million pink salmon went unharvested in Cook Inlet and this wasted resource is now rotting in our rivers and streams, see Attachment 1. The commercial catch of pink salmon was only 343,000 fish. This is, once again, a fishery disaster caused by State of Alaska salmon management policies and practices that do not meet the requirements of the MSA and the National Standards.

Equally troubling is the Alaska Board of Fisheries (BOF) adopted 5 AAC 21.354. Cook Inlet Pink Salmon Management Plan which states: "(a) The purpose of this management plan is to allow for the harvest of surplus pink salmon in the Upper Subdistrict for set gillnet and drift gillnet gear." The regulation goes on to indicate that "gillnets may not have a mesh size greater than four and three quarters inches."

This mesh size restriction applies to both drift and set gillnet gear. Following the adoption of this mesh size restriction, hundreds of Drift/ESSN fishermen purchased new nets with this smaller mesh size in order to legally participate in the pink salmon harvests. A large, harvestable surplus of pink salmon was available. Commercial Drift/ESSN fishermen were legally licensed, ready, willing and able to participate in this fishery. Further, many fishermen personally asked and encouraged the State of Alaska to conduct a pink salmon fishery in UCI. As fishermen, we personally observed numerous pink salmon migrating along the ESSN beaches and through the waters of UCI, including the EEZ waters.

The 2020 pink salmon economic disaster occurred due to the State's decision to deny a pink salmon fishery. 2020 did not need to be such an economic disaster for UCI commercial fishermen. Poor and biased management led by the Alaska Department of Fish and Game's Commissioner, Doug Vincent-Lang, once again allowed wasteful underharvests of pink salmon.

In recent years, invasive species are taking over essential salmon habitat, habitat degradation is not being monitored or addressed and the State's response is to further restrict commercial fishing and cut funding for management, including not collecting scientific data and management indices necessary for MSY management. These cuts include eliminating smolt outmigration counters, eliminating weirs used to count returning salmon, eliminating a sonar counter and pulling the remaining sonar counters before the entire run is in the river. The result is millions of unharvested surplus salmon and disastrous economic harm to the commercial fishing industry and fishing communities along with biological harm to the salmon resource. With up to a \$2.0 billion annual budget deficit, the State has no financial capacity (or apparent interest) to address the emerging challenges to this fishery in years to come. If this is what "best suited" fishery management looks like, the future is dire for Cook Inlet fishing communities.

Cook Inlet commercial fishing groups, including UCIDA, CIFF and other fishing communities, are sending economic disaster requests to our local governments, the State of Alaska and the Secretary of Commerce. These disaster declarations and requests are occurring because of disastrous salmon harvests. UCIDA and CIFF along with other members of the fishing community are anxiously awaiting the reaction of the Secretary of Commerce and the State of Alaska concerning these economic disasters.

**Cook Inlet Fisherman's Fund**  
**Resolution 2020-019**

- WHEREAS,** CIFF is a duly registered, fishing community association legally recognized by the State of Alaska and the Federal Government; and
- WHEREAS,** CIFF is registered as a 501(c)(6) Domestic Nonprofit Corporation with the Federal Government; and
- WHEREAS,** CIFF is a professional commercial salmon trade association; the Board of Directors are elected by participants of the fishery; and
- WHEREAS,** CIFF provides for the wholesale or retail marketing, sale, delivery, distribution, or processing of Drift/ESSN salmon and its by-products, caught in all waters of and adjacent to the Pacific Ocean north of a line extending east from Cape Douglas to the longitude of Cape Fairfield; including the negotiation of wholesale and/or retail prices, contracts, sale's agreements, distribution, processing, marketing, custom processing, agency, brokerage, and shipping agreements and contracts for its members; and
- WHEREAS,** CIFF does research, obtains grants, and makes studies for the enhancement, rehabilitation and marketing of commercial Drift/ESSN caught salmon and makes proposals and lobbies for legislation and regulations to promote and better the commercial salmon industry; and
- WHEREAS,** CIFF participates in legal actions determined by the Board of Directors to be in the best interest of the commercial fishing community; and
- WHEREAS,** CIFF members own several hundred vessels and skiffs that are directly used in the harvesting of salmon and other fish stocks, and members primarily reside in Alaska, but members are also in 28 other US states; and
- WHEREAS,** CIFF members have invested tens of millions of dollars in vessels, skiffs, limited access fishing privileges, setnet fishing sights, gear shops and sheds, homes, docks, vehicles, smaller-sized mesh gillnets, gear and equipment; and

**WHEREAS,** the 2020 lost economic ex-vessel value of the Drift/ESSN pink salmon fisheries was in excess of 7 million dollars; and

**WHEREAS,** the Drift/ESSN salmon fishermen were, by regulation, prevented from harvesting pink salmon during the historical time of year and from traditional areas as they migrate into UCI; and

**WHEREAS,** State regulators have abandoned abundance-based management practices in favor of highly prescriptive-based management practices causing insufficient fishing opportunity and resulting in economic disasters, reduced food supply, economies and future salmon returns; and

**WHEREAS,** this extremely low harvest was below the level necessary to cover the cost of operating and maintaining the commercial Drift/ESSN family fishing businesses and the processing and marketing businesses in the Kenai Peninsula Borough; and

**NOW, THEREFORE, BE IT RESOLVED BY THE CIFF BOARD OF DIRECTORS:**

**SECTION 1.** That CIFF, an elected regional fishing community, declares an economic disaster exists among the commercial Drift/ESSN fishing communities as a result of the virtual non-existent pink salmon fishery.

**SECTION 2.** That the CIFF Board of Directors respectfully request the State of Alaska declares an economic disaster for the 2020 UCI commercial Drift/ESSN pink salmon fisheries.

**SECTION 3.** CIFF respectfully requests the Secretary of Commerce declares an economic disaster, as provided for in MSA and the IFA, and implements a recovery plan that provides private and public assistance and takes other actions to benefit the commercial Drift/ESSN fishery participants and others that rely on this important fishery resource.

**SECTION 4.** CIFF requests that copies of each economic disaster resolution be provided to the Kenai Peninsula Borough Assembly and Mayor, the Governor of Alaska as well as other affected parties.



**SECTION 5.** That this resolution becomes effective immediately upon its adoption.

**ADOPTED BY THE CIFF BOARD OF DIRECTORS THIS 7TH DAY OF OCTOBER 2020.**

Sincerely,

*Original Signed Document*

John McCombs, President  
Cook Inlet Fisherman's Fund

cc: State Director USDA Rural Development Jerry Ward  
US Senator Lisa Murkowski  
US Senator Dan Sullivan  
US Senator Maria Cantwell  
US Representative Don Young  
AK Senator Peter Micciche  
AK Senator Gary Stevens  
AK House Speaker Bryce Edgmon  
AK Representative Sarah Vance  
AK Representative Ben Carpenter  
AK Representative Louise Stutes  
AK Representative Jonathan Kreiss-Tomkins  
Kenai Peninsula Borough Mayor Charlie Pierce  
Kenai Peninsula Borough Assembly  
Kenai City Mayor Brian Gabriel  
Homer City Mayor Ken Castner  
Soldotna City Mayor Peter Sprague  
Kenai Peninsula Economic Development District  
Cook Inlet Aquaculture Association  
Cook Inlet Processors:  
Pacific Star Seafoods  
Copper River Seafoods  
OBI Seafoods, Inc.

Attachment 1





# EXHIBIT T

*Alaska State Legislature*  
*Kenai Peninsula Delegation*



**Senator Peter Micciche, District O**  
**Representative Ben Carpenter, Dist. 29**

**Senator Gary Stevens, District P**  
**Representative Sarah Vance, Dist. 31**

*Official Business*

October 28, 2020

The Honorable Governor Mike Dunleavy  
550 West 7<sup>th</sup> Avenue,  
Suite 1700  
Anchorage, AK 99501  
VIA ELECTRONIC TRANSMISSION

Dear Governor Dunleavy,

As the Legislators elected to represent the Kenai Peninsula, we write today to express our support for the recent declaration of a local disaster made by the Kenai Peninsula Borough regarding the 2020 Cook Inlet Commercial Salmon Fishing Season and ask that you declare a State of Alaska economic disaster for the Upper Cook Inlet fisheries and provide for a recovery plan.

The Cook Inlet has been the home of commercial fishing for well over 100 years. In most recent history, commercial fishermen, of all gear types, have seen diminished returns and reduced fishing opportunities as the Department of Fish & Game works to manage for sustainable returns for the benefit of all Alaskans. Fluctuations in returns and corresponding harvests are nothing new or unusual but this year was especially difficult.

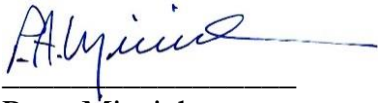
Although there are many reasons resulting in the reduction in overall catches and price impacts related to a COVID19-depressed market, the fact remains that commercial fishermen in Upper Cook Inlet experienced one of the worst seasons on record. In fact, 2020 was the worst season since 1971. With an estimated ex-vessel value of only slightly over \$5000 per operation, this season was devastating. A reduction of 82% from the 10-year average ex-vessel value is just too large to ignore.

Families who have fished these waters for generations are seeing their investments wither and the very real possibility of bankruptcy grow closer. Abnormally low harvest levels mean a dire financial year for these businesses than have been experienced in past years.

Today we want to ask for your support of our local fishers, their families, and crewmembers. A disaster declaration will mean so much to hard working Alaskans.

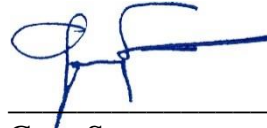
Thank you in advance for your thoughtful consideration of this request and we ask that you keep in mind the Alaskan families who will be suffering through a winter with much lower income due to forces beyond their control.

Sincerely,



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Peter Micciche  
Senator, District O



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Gary Stevens  
Senator, District P



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Ben Carpenter  
Representative, District 29



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Sarah Vance  
Representative, District 31

# EXHIBIT U



September 12, 2012

The Honorable Sean R. Parnell  
Governor of Alaska  
Juneau, AK 99811

Dear Governor Parnell:

Thank you for your letters from July 14 and August 16 requesting a determination of a commercial fishery failure due to a fisheries resource disaster under the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA) for certain Alaska Chinook salmon fisheries.

After reviewing the information provided by the State of Alaska, I have determined that a commercial fishery failure due to a fishery resource disaster exists for three regions of the Alaska Chinook salmon fishery under Section 308(b) of the Interjurisdictional Fisheries Act of 1986 (IFA) and Section 312(a) of the MSA. Specifically, (1) a previously determined commercial fishery failure has continued in 2010, 2011, and 2012 due to a fishery resource disaster for the Yukon River, (2) a commercial fishery failure occurred in 2011 and 2012 for the Kuskokwim Rivers, and (3) a commercial fishery failure occurred in 2012 for Cook Inlet.

Exact causes for recent poor Chinook salmon returns are unknown, but may involve a variety of factors outside the control of fishery managers to mitigate, including unfavorable ocean conditions, freshwater environmental factors, disease, or other factors. "Undetermined causes" are an allowable cause under the MSA and the IFA, and the changes in these stocks are causing a significant loss of access to fishery resources with anticipated revenue declines that will greatly affect the commercial fishery.

Commercial fishery failures can have cascading economic impacts on subsistence and sport fisheries. Rural communities on the Yukon and Kuskokwim Rivers depend on both the commercial and subsistence Chinook salmon fisheries for income and survival. In addition, the Cook Inlet Chinook salmon fishery supports an important sport fishery, which is one of the principal economic drivers for the local and regional economy.

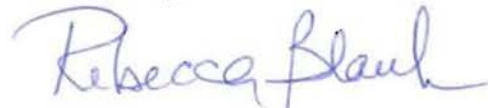
This determination provides a basis for Congress to appropriate disaster relief funding under the MSA and the IFA, and for the National Oceanic and Atmospheric Administration (NOAA) to provide assistance to affected communities. If Congress appropriates disaster relief funding, NOAA will work with the State of Alaska, the Alaska Federation of Natives, and the affected communities to develop an appropriate economic spending plan that would support additional science to understand the underlying causes of this disaster, prevent a similar failure in the future, and assist the affected fishing communities. Please be aware that the MSA limits the Federal share of such activities to no more than 75 percent.



The Honorable Sean R. Parnell  
Page 2

If you have any questions, please contact Jim Stowers, Acting Assistant Secretary for  
Legislative and Intergovernmental Affairs at (202) 482-3663.

Sincerely,



Rebecca M. Blank  
Acting Secretary of Commerce

# EXHIBIT V



## United Cook Inlet Drift Association

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43961 K-Beach Road, Suite E • Soldotna, Alaska 99669 • (907) 260-9436 • fax (907) 260-9438  
• [info@ucida.org](mailto:info@ucida.org) •

Date: August 16, 2012

Addressee: Glenn Merrill  
Assistant Regional Administrator  
ATTN: ELLEN SEBASTIAN  
Sustainable Fisheries Division  
Alaska Region NMFS  
709 West 9th Street, Room 420-A  
Juneau, AK 99801-1807

RE: Supplemental Comments on NMFS's Proposed Regulations to Implement the North Pacific Fishery Management Council's Amendments To the Salmon FMP; Docket No. 120330244-2242-01, RIN 0648-BB77

Dear Mr. Merrill:

The United Cook Inlet Drift Association ("UCIDA") respectfully submits these supplemental comments regarding NMFS's pending decision on the proposed regulations to implement amendments by the North Pacific Fishery Management Council (the "Council") to the *Fishery Management Plan For the Salmon Fisheries in the United States Exclusive Economic Zone ("EEZ") off the Coast of Alaska* ("Salmon FMP"). UCIDA previously submitted detailed comments on both the Salmon FMP during the published public comment period on May 29, 2012.

Since that time there have been a number of important factual developments that are directly relevant to UCIDA's prior comments and NMFS pending decision to finalize the proposed regulations implementing the amendments to the Salmon FMP, including:

- This summer Alaska experienced one of the worst Chinook runs in 30 years.<sup>1</sup>
- On July 14, 2012, Alaska Governor Sean Parnell asked the Acting Secretary of Commerce Rebecca Blank to declare a fishery disaster under Section 312(a) of the Magnuson-Stevens Fishery

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<sup>1</sup> See Attachment 1 to this letter.  
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Management and Conservation Act (“MSA”) for the Chinook salmon fisheries on the Yukon and Kukulswim Rivers. The Governor further indicated that a disaster declaration may be necessary for the Cook Inlet fisheries due to low Chinook returns to the Kenai River.<sup>2</sup>

- On the Kenai Peninsula, fear over low Chinook returns to the Kenai River prompted the State of Alaska to completely shut down the East Side Set net fishery on July 17, 2012 and resulted in the first river-wide late run closure in recorded management history on July 19, 2012.<sup>3</sup>
- On July 23, 2012, numerous set net fishing families protested in the streets of Kenai in response to the closures.<sup>4</sup> Although these fisheries do catch some Chinook salmon, they primarily catch sockeye (for example, at one beach site the ratio is approximately 1 Chinook salmon for every 1,236 sockeye).<sup>5</sup> Sockeye returns this summer were strong (over 4.6 million to the Kenai River), and the closures not only create immediate hardship, but create a significant risk of continued over escapement.
- On July 25, 2012, Alaska State Senator Thomas Wagoner asked the Governor to formally expand the request for a disaster declaration to include the Kenai Peninsula due to “economic hardship from this complete closure” and because “Some of the set netters may end up having to file for bankruptcy” as a result of the unprecedented closures.<sup>6</sup>
- On July 26, the Alaska Board of Fish refused to take action, rejecting an emergency petition from set net fishermen from the Kenai Peninsula, finding that – despite the economic disaster for the set net fishermen and the potential for massive over escapement of sockeye to the Kenai river – there was no emergency warranting action by the Board.<sup>7</sup>
- On August 5, 2012, the Alaska Department of Fish and Game reopened, in part, the East Side set net fishery, noting that the Chinook returns to the Kenai and Kasilof are “later than what is typical” and that escapement for Chinook salmon was turning out to be “larger than the last two years.”<sup>8</sup> By the time the fishery was reopened, the sockeye run was largely complete.

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<sup>2</sup> See Attachment 2.

<sup>3</sup> See Attachment 3.

<sup>4</sup> See Attachment 4.

<sup>5</sup> See Attachment 5.

<sup>6</sup> See Attachment 6.

<sup>7</sup> See Attachment 5.

<sup>8</sup> See Attachment 7.

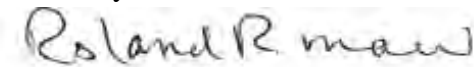
Although the final results of the season are not yet known, it appears that the more than 1 million sockeye salmon went un-harvested in Kenai and Kasilof Rivers. The economic loss of that harvest to the Kenai Peninsula has been devastating. In addition, the over escapement to the Kenai river in particular is likely to result in significantly depressed returns in future years as well. In short, the State's management in Cook Inlet this summer and its response to changing conditions have (again) been disastrous for commercial fishing in the Inlet.

The events of this summer further support UCIDA's prior comments that the State of Alaska is not managing in a manner consistent with the MSA, its goals and objectives or the national standards. Moreover, it further undermines the Council's conclusion that federal management of salmon in the West Area is not necessary. Indeed, there is no logical way to conclude that the State of Alaska's management of salmon in the West Area renders the protections of the MSA unnecessary when the Governor of the State is affirmatively requesting disaster protection and relief under the MSA. For all these reasons, UCIDA believes that the Council's amendments to the Salmon FMP are not consistent with the MSA, and that NMFS should reject the proposed regulations implementing the FMP.

Finally, these subsequent unprecedented events, including the historic low returns and complete closures must be addressed under the National Environmental Policy Act ("NEPA"). As noted in UCIDA's prior comment letters, the Environmental Assessment presumes that "it is assumed that the fishery will continue to be managed in the same way in the foreseeable future."<sup>9</sup> The unprecedented actions this summer further undermine that assumption, require analysis in a supplemental EA, and further demonstrate the need for a full Environmental Impact Statement.

We appreciate your consideration of these comments. If you have questions, or would like any additional information, please do not hesitate to contact UCIDA's Executive Director, Dr. Roland Maw, at (907) 260-9436.

Sincerely,



Roland Maw, PhD  
UCIDA Executive Director

cc: Rebecca Blank, Secretary of Commerce  
Eric Schwaab, Assistant Secretary of Commerce  
Sam Rauch, Assistant Administrator for NOAA Fisheries  
James Balsiger, Administrator for NOAA Fisheries, Alaska Region

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<sup>9</sup> EA at 186.

# **ATTACHMENT 1**

**Exhibit V**

## **Alaska's worst king run in 30 years prompts end to all Kenai River fishing for the summer**

SEAFOOD.COM NEWS [The Associated Press] by Mary Pemberton - July 20, 2012

Alaskans again this summer are wondering: Where are the king salmon?

Some of Alaska's largest and best rivers are closed to king fishing because state and federal fisheries managers have determined that the largest of the salmon species, also called Chinook, aren't showing up in enough numbers to ensure sustainable future runs.

In western Alaska, people living in dozens of villages along the Yukon and Kuskokwim rivers are turning to less desirable salmon species - fish with lower oil and fat content - to fill their freezers for winter in what one official described as a summer of "food insecurity."

"It is pretty scary," said Timothy Andrew, director of natural resources with the Association of Village Council Presidents in Bethel. "Chinook salmon is probably the biggest species that people depend on for drying, salting and putting away in the freezer to feed the family throughout the winter."

Fishery managers predict that this year's Yukon River king salmon run will be worse than last year, and that was the worst showing for Chinook in 30 years.

Commercial fishermen on the Yukon and Kuskokwim are turning to less desirable but more plentiful species of salmon that sell for under \$1 a pound. King salmon sells for more than \$5 a pound. With gas costing \$6.70 a gallon in Bethel, many fishing boats are sitting idle, he said.

People living in the region's 56 villages are devastated, Andrew said.

"It is an incredibly stressful time," he said.

In mid-July, the Kenai River - considered by many to be Alaska's premier river for salmon fishing - is normally crowded and chaotic with fishing guides steering their boats to give their clients the best opportunity to catch a trophy king.

But a ban on king fishing on the Kenai and Kasilof rivers went into effect Thursday.

Robert Begich, the Alaska Department of Fish and Game's area management biologist, said the Kenai king run looks to be the lowest on record going back to the 1980s.

While the continued downward trend in kings isn't clear, Begich suspects a combination of factors, with researchers looking more closely at changes in the ocean environment. King salmon usually spend several years in the ocean before returning to rivers to spawn.

Ray Beamesderfer, a consultant with Cramer Fish Sciences in Gresham, Ore., also suspects changes in the marine environment. He thought he and his family would be fishing for king salmon on the Kenai River on Thursday. Instead, they were casting for rainbow trout or smaller sockeye salmon.

Beamesderfer said in the late 1970s, there was a change in ocean currents that favored Alaska salmon but contributed to poor salmon runs in the Pacific Northwest.

That situation appears to be reversing, with a change in ocean currents, he said.

"We have seen some better runs in recent years," Beamesderfer said.

But he said the persistent downturn in king salmon can't be fully explained by a change in ocean currents, especially when other salmon species in Alaska are thriving.

"It doesn't seem to be that simple," Beamesderfer said.

Jeff Regnert, director of the commercial fisheries division for the Alaska Department of Fish and Game, also said something different in the marine environment likely holds the answer to the downturn in kings.

"That is probably where we will see the change," he said.

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# **ATTACHMENT 2**

**Exhibit V**

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Governor Sean Parnell  
STATE OF ALASKA

July 14, 2012

The Honorable Rebecca Blank  
Acting Secretary  
United States Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230

Re: Federal Fishery Disaster

Dear Madam Secretary,

In accordance with Section 312(a) of the Magnuson-Stevens Fishery Management and Conservation Act (MSA), I am writing to request that you declare a fishery disaster for the 2011 Chinook salmon fisheries on the Yukon and Kuskokwim Rivers, and 2012 Chinook salmon on the Yukon and Kuskokwim Rivers. The MSA authorizes the Secretary of Commerce to determine if a commercial fishery failure has occurred. I ask your soonest possible review of this matter due to the importance of these fisheries to the local, regional, state, and national economies.

Our analysis indicates that the decline in these fisheries meets the standards in the MSA for disaster determinations. The cause of these declines is undetermined and could include a variety of factors including ocean survival or other unknown factors. As I indicated in the 2009 disaster declaration request, run sizes in subsequent years will likely be impacted.

**2011 and 2012 Yukon River Chinook Fisheries**

The 2011 Chinook Yukon River fishery was almost completely shut down due to run strength, and the subsistence opportunity was significantly restricted. The five year average harvest from 2006 to 2010 was nearly 19,000 fish, resulting in an economic value of over \$3 million for region residents in some years.

The situation in 2012 is more troubling. There are no commercial harvest openings expected for Chinook on the Yukon River, and harvest restrictions are leading to reduced activity in other salmon fisheries. Subsistence opportunity has been significantly restricted.

**2011 and 2012 Kuskokwim River Chinook Fisheries**

In 2011, Chinook sales were restricted on the Kuskokwim River, and the value of the fishery was negligible. This is down from the five year previous average of over 4,200 Chinook salmon sold. For 2012, fisheries managers have been unable to open any directed Chinook salmon fisheries on the Kuskokwim River in an attempt to meet escapement goals for Chinook salmon. Again, while final

results are not available for 2012, there may be substantial harm to other salmon fisheries on the Kuskokwim River, and subsistence harvest will most likely be reduced.

### **Additional Considerations**

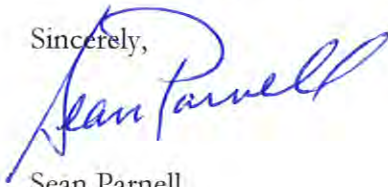
There are additional fisheries which may merit a fisheries disaster declaration including, but not limited to, the Cook Inlet Chinook which are experiencing diminished returns. Fisheries managers have imposed several closures on area streams as they work to meet escapement numbers. Not only is the commercial harvest a critical economic engine, but Chinook closures on the Kenai and other rivers are causing significant economic harm to the sportfish businesses in the area. Final economic harm is not known at this time, but is expected to be significant for these businesses. The Cook Inlet salmon runs are also a critical food source to Matanuska-Susitna Valley residents. We will continue to monitor the situation of this and other fisheries, and may request additional disaster determinations once the final data is analyzed.

It is important to emphasize the critical nature of these fisheries to region residents. Residents in the Yukon and Kuskokwim regions experience some of the highest poverty rates in the country. Earnings from even small commercial fisheries are critical to enduring Alaska's winters. Even more important to these residents' survival is the ability to engage in subsistence harvests. The state of fisheries this year may severely impact their subsistence harvests.

It appears these river systems may be facing long-term systemic changes and require significant and long-term financial resources to determine the precise problem and make corrective actions. We request that along with a disaster declaration, you also do what you can to increase immediate resources to assist in potential food shortages, and direct long-term, sustainable funding to research.

Given the status of the fisheries this year, we are making this immediate request for a determination for Yukon River and Kuskokwim River Chinook stocks. I have directed the Alaska Departments of Commerce, Community and Economic Development, and Fish and Game to continue their review and provide analysis on other fisheries that may be facing disaster determinations in 2011 and 2012.

Sincerely,



Sean Parnell  
Governor

Enclosure

cc: The Honorable Lisa Murkowski, United States Senate  
The Honorable Mark Begich, United States Senate  
The Honorable Don Young, United States House of Representatives  
The Honorable Gary Stevens, Alaska State Senate  
The Honorable Lyman Hoffman, Alaska State Senate  
The Honorable Donald Olson, Alaska State Senate

The Honorable Thomas Wagoner, Alaska State Senate  
The Honorable Linda Menard, Alaska State Senate  
The Honorable Mike Chenault, Alaska State House of Representatives  
The Honorable Bob Herron, Alaska State House of Representatives  
The Honorable Mark Neuman, Alaska State House of Representatives  
The Honorable Neal Foster, Alaska State House of Representatives  
The Honorable Susan K. Bell, Commissioner, Alaska Department of Commerce,  
Community, and Economic Development  
The Honorable Cora Campbell, Commissioner, Alaska Department of Fish and Game  
Myron Naneng, Sr., President, Association of Village Council Presidents  
Julie Kitka, President, Alaska Federation of Natives  
James Balsiger, Alaska Region Administrator, National Marine Fisheries Service  
Kip Knudson, Director of State and Federal Relations, Office of the Governor



## MEMORANDUM

TO: Susan Bell, Commissioner

DATE: Saturday, July 14, 2012

FROM: Glenn Haight, Development Manager

RE: Review of fisheries disaster status for 2011  
and 2012 Yukon and Kuskokwim River  
Chinook Fisheries and 2012 Cook Inlet  
Chinook Fisheries

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The information in this memo supports a state recommendation to seek a federal disaster declaration by the US Department of Commerce for several Alaska salmon fisheries for 2011 and 2012. Please note there are additional fisheries that may qualify for a disaster declaration recommendation. Our office is working with the Alaska Department of Fish and Game and will follow up as the fishing seasons and analyses are completed.

Federal fisheries disasters may occur under the Magnuson-Stevens Act (MSA) or the Interjurisdictional Fisheries Act (IFA). Under either act, the underlying determinate of a commercial fishery failure is the *cause* and the *impact*.

### Causes

Causes allowable under MSA are natural, undetermined, or man-made beyond the control of fishery managers. Under IFA, causes may be natural or undetermined. In either case, the poor stock runs in the Yukon and Kuskokwim Rivers, and the Cook Inlet region are a function of one or more of these factors.

### Impact

The federal government may employ some discretion in reviewing and making a determination on impact. Metrics may include harvests, value, number of participants, jobs, landings, and other. In the case of these fisheries, there appears to be ample information to make a finding.

Impact will be specifically determined based on how the last 12 months of activity fair against the previous five years. The federal guidelines state that declines of 80 percent or greater will result in an automatic disaster declaration. Declines between 35 percent and 80 percent may result in a disaster declaration. Declines less than 35 percent will not result in a disaster declaration. Given the immediate nature of our 2012 fishery, this memo restricts the analysis to those fisheries that meet or exceed the 80 percent decline standard. There are many other fisheries under review that may also meet this definition or that of the 35 percent to 80 percent criteria.

In terms of evaluating impact, federal managers may consider impacts on sub units. This is important particularly in the Kuskokwim fishery, where management is split between the Kuskokwim Bay and River. For the purposes of this recommendation, the analysis shows the river fishery is under significant stress.

## Yukon Salmon Fisheries

Yukon salmon fisheries are broken into two main area, the Lower and Upper fisheries. There are several districts in each of the two areas.

### Chinook

The Yukon Chinook fishery continues to falter with poor returns. Commercial Chinook harvests have fallen significantly over the last five years. Table 1 provides the analysis on the total commercial Yukon Chinook harvests from 2006 through current 2012. The 5-year average number of fish sold commercially from 2006 – 2010 was 18,863 fish. The 109 fish sold commercially in 2011 is substantially below that mark. Even with the greatly reduced number of sales in 2011, the 2007 – 2011 average number of fish sold was 9,719 fish. With little to no commercial sale expected in 2012, it will again meet the definition of a fishery disaster.

Unfortunately, each year the river does not produce the 5 year average declines. This suggests in five years continued poor harvests will no longer technically result in a federal fisheries disaster. If a disaster declaration is requested, it appears critical it come with multi-year (8 or more years) funding for research and restoration.

Table 1

Yukon Total Chinook Data

Category	2006	2007	2008	2009	2010	2011	Disaster Metrics for 2011 Season		Disaster Metrics for 2012 Season		
							Current Data 2012	Average 2006-2010	2011 Increase (Decline)	Average 2007-2011	2012 Increase (Decline)
Number of Fish	45,829	33,634	4,641	316	9,897	109	-	18,863	-99%	9,719	-100%
Pounds Harvested	859,405	595,352	65,438	4,203	127,671	1,488	0	275,593	-99%	158,830	-100%
Value of Fisheries	\$ 3,319,552	\$ 2,171,349	\$ 303,633	\$ 21,014	\$ 638,357	\$ 7,438	\$ -	\$ 1,076,890	-99%	\$ 628,358	-100%

Source: 2006 - 2010 data, Alaska Department of Fish & Game, Annual Management Report Yukon and Northern Areas 2010, May 2012, Appendices A4, A5, A6, A7, A9, A11, A13. 2011 data, Alaska Fish & Game AYK Database Management System. 2012 data, Alaska Fish & Game online 2012 Preliminary Alaska Commercial Salmon Catches - Blue Sheet.

### Summer Chum

As of this writing, the summer chum fishery is underway. Preseason projections, escapement data, and current harvests do not suggest the summer chum fishery will meet the requirement fishery disaster threshold.

One factor that may impact summer chum harvests and values is reductions in harvest activity because of area closures and retention prohibitions due to Chinook measures.

We will conduct further analysis on the summer chum fishery for the Upper Yukon, where there may be justification for a declaration. Harvest levels for chum on the Upper Yukon fell 72 percent in 2011 in comparison to the five year average for the fishery. See Table 2 for details.

Table 2

Upper Yukon Summer Chum Data

Category							Disaster Metrics for 2011 Season		Disaster Metrics for 2012 Season		
	2006	2007	2008	2009	2010	2011	Current Data 2012	Average 2006-2010	2011 Increase (Decline)	Average 2007-2011	2012 Increase (Decline)
Number of Fish	44,641	21,978	25,588	12,366	49,673	8,651	-	30,849	-72%	23,651	-100%
Pounds Harvested	272,310	127,472	186,792	66,776	263,267	45,850	0	160,411	-71%	138,032	-100%
Value of Fisheries	\$ 43,570	\$ 31,868	\$ 46,698	\$ 17,362	\$ 60,551	\$ 11,463	\$ -	\$ 35,252	-67%	\$ 33,588	-100%

Source: 2006 - 2010 data, Alaska Department of Fish & Game, Annual Management Report Yukon and Northern Areas 2010, May 2012, Appendices A4, A5, A6, A7, A9, A11, A13. 2011 data, Alaska Fish & Game AYK Database Management System. 2012 data, Alaska Fish & Game online 2012 Preliminary Alaska Commercial Salmon Catches - Blue Sheet.

**Coho**

The Coho fishery occurs in the fall on the Yukon River. Pre-season projections do not suggest a disaster declaration will be warranted. However, it is simply too early to make any findings.

**Kuskokwim Salmon Fisheries**

Kuskokwim salmon fisheries are broken into two main areas, the Kuskokwim Bay and Kuskokwim River. The main area of concern is the river fishery. Results from the 2011 Kuskokwim River Chinook fishery indicate it clearly meets the criteria for a disaster determination. While the river fishery is known to begin in June, as of this time, subsistence Chinook fisheries have been severely restricted and the commercial fishery has not yet opened. It remains too early to determine if the 80 percent threshold requirement will be met. Given the late delay in the commercial fishery, a disaster finding is likely.

**Kuskokwim River**

Forty nine Chinook salmon were sold during the 2011 Kuskokwim River commercial salmon fishery compared to the previous 5-year average of 4,243. It appears this meets the threshold of a disaster declaration. However, no directed commercial Chinook fishery has occurred on the Kuskokwim River for several decades. Table 3 demonstrates the last five years of harvest activity for Chinook salmon.

Table 3

Kuskokwim River Chinook Data

Category							Disaster Metrics for 2011 Season		Disaster Metrics for 2012 Season		
	2006	2007	2008	2009	2010	2011	Current Data 2012	Average 2006-2010	2011 Increase (Decline)	Average 2007-2011	2012 Increase (Decline)
Number of Fish	2,777	179	8,865	6,664	2,731	49	-	4,243	-99%	3,698	-100%
Pounds Harvested	38,600	2,524	114,359	87,298	35,776	613	0	39,881	-98%	48,114	-100%
Value of Fisheries	\$ 20,844	\$ 1,489	\$ 83,482	\$ 61,982	\$ 57,242	\$ 521	\$ -	\$ 32,223	-98%	\$ 40,943	-100%

Source: 2006 - 2010 data, Alaska Department of Fish & Game, 2010 Kuskokwim Area Management Report, December 2011, Appendices A9, A10, A11, A12, A13, C3, D3. 2011 data, Alaska Fish & Game AYK Database Management System. 2012 data, Alaska Fish & Game online 2012 Preliminary Alaska Commercial Salmon Catches - Blue Sheet.

Area managers also expressed concern that the annual subsistence Chinook harvest may significantly be impacted by area closures. While other salmon species are not of concern, Chinook directed subsistence fishing has been severely restricted to achieve escapement goals. This has had an impact on Chinook subsistence harvest and is an area of immediate concern for region residents.

**Kuskokwim Bay**

Fishing is underway in the bay. At this time, returns are below five-year averages, but do not appear to warrant declaration. We will continue to monitor the situation.

## Cook Inlet Salmon Fisheries

The 2012 Cook Inlet salmon fishery is realizing significantly lower runs of Chinook than in previous years. At this time, we do not have sufficient economic impact information for a definitive recommendation. However, it is anticipated the economic decline will be significant, warranting a fishery disaster declaration.

Table 4

Data for 2012 current as of July 12

### Upper Cook Inlet Chinook Data

Category	2006	2007	2008	2009	2010	2011	Current Data 2012	Disaster Metrics for 2011 Season		Disaster Metrics for 2012 Season	
								Average 2006 - 2010	2011 Increase (Decline)	Average 2007 - 2011	2012 Increase (Decline)
Number of Fish	18,029	17,625	13,333	8,750	9,901	11,248	1,680	13,528	-17%	12,171	-86%
Pounds Harvested	353,368	359,550	310,659	152,250	204,951	227,210	34,104	267,998	-15%	250,924	-86%
Value of Fisheries	\$ 617,133	\$ 629,521	\$ 544,120	\$ 266,548	\$ 349,137	\$ 634,617	\$ 110,838	\$ 506,846	25%	\$ 484,789	-77%

Source: 2006 - 2011 data, Alaska Department of Fish & Game's 2011 Upper Cook Inlet Area Commercial Fisheries Annual Management Report, July 2012, Appendices B6 and B7, 2012 Preliminary Alaska Commercial Salmon Catches - Blue Sheet, and online catch history on Alaska Department of Fish & Game's website.

## Impacts on Subsistence

Discussions with Fish & Game indicate this year's commercial harvest closures may impact subsistence harvests in the Yukon and Kuskokwim. This may have significant economic consequence to region residents. Ongoing review and analysis is needed, particularly given the reliance on subsistence foods for community, household, and personal well-being.

## Follow-up Action

As described above, there appears to be ongoing and significant declines in the Yukon and Kuskokwim Chinook salmon fisheries, and Cook Inlet salmon fisheries. Ongoing monitoring, reporting, and analysis will be conducted as each fishery is prosecuted, but the known declines and restrictions on subsistence fisheries warrant the request for a federal fishery disaster declaration at this time.



# **ATTACHMENT 3**

**Exhibit V**

# ALASKA STATE LEGISLATURE

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## Senator Thomas Wagoner Press Release

For Immediate Release: July 26<sup>th</sup>, 2012

### **Senator Tom Wagoner Requests Cook Inlet Chinook Salmon Declared Fishery Disaster**

KENAI- This year's King salmon run is extremely meager, causing drastic economic hardships for businesses and families on the Peninsula.

There is no argument that our Chinook run is hurting, it is everywhere in the state. When king fishing was restricted it was understandable. When the Department of Fish and Game gave the order that sport fishers and those taking part in the personal use fishery could not take Kings that was understandable too.

The guided sports fishermen had hundreds of clients cancel due to the lack of Kings. This was a loss of income for the guides, B&B's, restaurants and many other businesses in our community.

On July 17<sup>th</sup> the Department completely closed the East Side Set Net Fishery.

Other fisheries are benefiting from the strong red salmon run the Cook Inlet is experiencing this year. Catch limits have been increased, fishing time has been expanded; trying to keep too many reds from coming up the river causing over escapement.

The east side set netters are still unable to take part in the strong sockeye salmon run because of the low Chinook salmon numbers.

On July 25<sup>th</sup> Senator Wagoner asked Governor Parnell to request a fishery disaster declaration for the 2012 Cook Inlet Chinook Salmon run.

To read a copy of the letter, please [click here](#).

For more information, contact Mary Jackson in Senator Wagoner's office at (907) 283-7996.

###

# **ATTACHMENT 4**

**Exhibit V**

Posted: Monday, July 23, 2012

## **Kenai commercial setnetters protest king fishery closure as AK officials discuss poor returns**

SEAFOOD.COM NEWS [Peninsula Clarion] by Rashah McChesney - July 23, 2012

Commercial setnet fishermen rallied and then took to the streets in Kenai to protest fishing closures aimed at protecting king salmon.

The format of the rally was simple; Any of the nearly 200 people who stood in the park strip on Friday could take the microphone and talk about economic issues, closures, fishery management and the elusiveness of harvesting an overabundance of one fish while protecting the dwindling numbers of another.

A steady stream of people took their turn, with many touching on often repeated phrases about the Alaska Department of Fish and Game's management of the Cook Inlet. Many questioned politics and biological management of king salmon, and called for more attention to the Cook Inlet as commercial setnet fishermen and in-river sport fishermen face unprecedented closures.

Attendees at the rally were overwhelming setnet fishermen who have been closed for a significant portion of their normal fishing season, Several people spoke about the economic impact of closures in the area.

Gov. Sean Parnell held a press conference earlier Friday to address the king salmon issue.

Borough Mayor Mike Navarre said he and Kenai Mayor Pat Porter travelled to Anchorage to discuss the issues with fish and game commissioner Cora Campbell and Parnell following the conference, where Campbell announced that a team of researchers was being formed to look into why king salmon have returned in low numbers all over the state.

"We had the opportunity to meet ... and stress what the impact means to the Kenai Peninsula but more importantly what the impact to families who participate and for years have participated in the setnet fishery," Navarre said. "We know it's important, the governor recognizes that there is a huge economic impact; they've pledged to use all of the management tools that they have as they get new information."

Navarre said he understood that people were angered by being pulled out of the water.

"I know its very frustrating not getting answers to what-ifs that are posed by fishermen wanting to know some definitive answer about whether or not they're going to be allowed back in the water," he said.

Navarre predicted the board of fisheries would meet off-cycle again and would discuss the Cook Inlet and said he would request that the board meet on the central peninsula so fishermen here wouldn't have to face the additional burden of travelling outside of the area to discuss the impacts of this year's closures.

As the crowd grew larger the weather dropped by several degrees and drops of rain began to drop intermittently, however the line of speakers remained steady and the crowd pressed closer together clapping and shouting and encouraging one another to speak.

Todd Smith, whose family setnets by False Creek in Clam Gulch, spoke to the crowd and urged them to remember that closures to the setnet fishery were a regular part of the process of

management in the Cook Inlet and to keep the fish in mind.

After he handed the microphone to the next person, Smith said he trusted the department of fish and game to manage the fishery competently when allowed to do so biologically.

"Commercial fishing — setnetting — has been in the inlet for over 100 years," he said. "Obviously we've made mistakes and we're fortunate ... the state in the past (has) done a very good job we've had good biologists and they've maintained all the data. That's what they use."

However, Smith said he thought increasing political pressure had influenced fish and game's commercial division to close the setnet fishery.

"They make a management report every year. It's 200 pages long. Nobody reads it but it's there, it has all the data in it and that's what they run off of," he said.

"The data supports (setnetters). They fish us when they can, when the fish aren't there we don't fish. That's why I supported us not fishing earlier this year with the understanding that when the fish are here an acceptable number of kings are going to be harvested. Now the political pressures aren't letting us do that."

Travis Every, whose family setnets and was instrumental in organizing the rally, said he called in to hear the press conference and wasn't pleased by what he heard.

"They can do all the studies they want after the season, but after the season is too late," he said. "We need help now."

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Email comments to [michaelramsingh@seafood.com](mailto:michaelramsingh@seafood.com)

# **ATTACHMENT 5**

**Exhibit V**

Alaska Board of Fisheries, Emergency Petition  
Re: Cook Inlet Set Net Closure  
July 18th, 2012

Due to the recent implementation of 5 AAC 21.359 (c)(4) in which the Kenai River was closed to king salmon fishing therefore closing the East side Cook Inlet set net fishery, the Kenai River is in danger of sockeye salmon over escapement. This potentially huge, unexpected over escapement, not only burdens the ecosystem now but also jeopardizes the strength of future returns.

The only "tool" currently available to local management is the Cook Inlet drift fleet which has a low king to sockeye harvest record. While this fishery can be partially successful in a situation such as this, it is not capable of stopping a estimated run of 4.0-6.0 million fish by itself, especially once the fish hit the beaches.

The East Forelands set net statistical area (244-42) is located at the northern end of the Central District approximately 12 miles from the mouth of the Kenai River. This stat area catches Kenai sockeye with minimal impact on king salmon. Data taken in this area shows one king caught for every 1236 sockeye. The stat area immediately to the south (Salamatof, 244-41) shows one king for every 359 sockeye. To further compare these stat areas, this neighboring district catches 20x the number of kings but only 5x the number of sockeye. By fishing stat area 244-42 when the rest of the Central District East side set net fishery is closed, local management, acting on 5 AAC 21.363(e), could have another "tool" at their disposal to curtail the over escapement of the Kenai River.

Sincerely,

Lance Alldrin, East Forelands set net  
530-864-4846  
[alldrin@sbcglobal.net](mailto:alldrin@sbcglobal.net)

Cliff Dejax, East Forelands set net  
907-953-2211

Mark Vincent, East Forelands set net  
907-240-6289

*Petition #1 (B)*

## STATISTICAL DATA RELATED TO EMERGENCY PETITION

Day to day (2009 – 2011) total sockeye harvest comparing set net area (244-42) to Cook Inlet drift fleet.

This data suggests that set net area (244-42) harvests approximately 4.053% as much as the drift fleet on a day to day basis. The sockeye harvest in area 244-42 would likely increase by 2 to 4 times that amount if fished when the remaining east side set net districts are closed for king salmon conservation. If that were the case, area 244-42 could increase the commercial harvest of sockeye by 8.106% to 16.212% on a daily basis.

In addition, whereas the drift fleet slows considerably after the end of July, district 244-42 could be fished well into August further increasing the harvest of sockeye with very minimal impact on king salmon.

Considering the unforeseen extreme imbalance of king salmon return versus sockeye salmon return in Upper Cook Inlet, we ask that this petition be considered for immediate implementation on a trial basis.



*Petition #1*

*(C)*

**2009**

<u>DATE</u>	<u>SET NET DISTRICT 244-42</u>	<u>DRIFT</u>
9-Jul	2,817	137,338
13-Jul	8,003	143,674
16-Jul	9,137	233,568
20-Jul	7,644	116,869
23-Jul	4,326	152,776
1-Aug	1,104	10,167
3-Aug	883	21,022
6-Aug	1,015	3,675
10-Aug	512	714
<b>TOTAL</b>	<b>35,441</b>	<b>819,803</b>

**2010**

<u>DATE</u>	<u>SET NET DISTRICT 244-42</u>	<u>DRIFT</u>
8-Jul	1,109	243,891
12-Jul	4,317	333,303
15-Jul	18,379	246,973
19-Jul	8,081	181,110
21-Jul	4,618	31,485
22-Jul	3,998	124,656
24-Jul	4,981	11,696
25-Jul	1,229	2,225
26-Jul	1,177	89,635
28-Jul	3,732	14,050
29-Jul	2,301	76,218
31-Jul	1,871	3,357
2-Aug	3,560	24,785
3-Aug	1,487	377
4-Aug	1,355	1,168
5-Aug	1,195	13,387
8-Aug	744	124
9-Aug	1,071	2,867
10-Aug	153	39
12-Aug	484	580
<b>TOTAL</b>	<b>65,842</b>	<b>1,587,424</b>

*Petition #1 (D)*

2011

<u>DATE</u>	<u>SET NET DISTRICT 244-42</u>	<u>DRIFT</u>
11-Jul	586	105,866
14-Jul	353	691,622
16-Jul	21,587	218,220
18-Jul	11,063	529,850
21-Jul	7,484	392,787
23-Jul	11,484	224,003
24-Jul	3,839	57,648
25-Jul	6,495	129,245
27-Jul	2,484	45,118
28-Jul	2,508	37,271
30-Jul	4,298	29,163
31-Jul	5,449	8,605
1-Aug	3,226	23,670
2-Aug	881	938
4-Aug	6,556	6,847
6-Aug	2,134	388
7-Aug	<u>1,933</u>	<u>43</u>
<b>TOTAL</b>	<b>92,360</b>	<b>2,502,284</b>

PETITION #2

TO ACCOUNTING

JUL 25 2012

Date: July 24, 2012

To: Alaska Board of Fisheries

From: Andy and Melissa Hall, East side setnet permit holders,  
Kasilof sub district (Box 60, Kasilof, AK 99610, 907-240-4255,  
907-240-7726)

Re: Petition Concerning the Cook Inlet Eastside Set Net Closure

The purpose of this request is to keep escapement of sockeye salmon in the Kasilof and Kenai rivers within management guidelines set by regulation, while minimizing harvest of Chinook salmon.

We propose that commercial setnet fishing be open immediately between a half-mile and one-and-a-half miles of mean high tide within the entire east side set net fishery.

In an effort to give everyone a chance to fish, permit holders who do not have locations beyond a half-mile will be allowed to set temporary locations with anchors between a half-mile and two miles as long as they maintain a distance of 600 feet from existing locations.

Alternately, those same permit holders could elect to drift between one and a half and 2-miles from the mean high tide line, using no more than three regulation-setnet-size shackles per permit, while maintaining the same 600-foot distance from other set gear.

Also, to further support conservation of the species, all live Chinooks caught in nets will be rolled out.

TO ACCOUNTING

JUL 25 2012

Date: July 25, 2012

To: Alaska Board of Fisheries

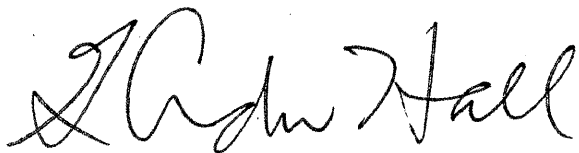
From: Andy and Melissa Hall, East side setnet permit holders,  
Kasilof sub district (Box 60, Kasilof, AK 99610, 907-240-4255,  
907-240-7726)

Re: Petition Concerning the Cook Inlet Eastside Set Net Closure

The purpose of this request is to keep escapement of sockeye salmon in the Kasilof and Kenai rivers within management guidelines set by regulation, while minimizing harvest of Chinook salmon.

We propose that commercial setnet fishing be open immediately between a half-mile and one-and-a-half miles of mean high tide within the entire east side set net fishery.

Also, to further support conservation of the species, all live Chinooks caught in nets will be rolled out.

A handwritten signature in black ink that reads "Andy Hall". The signature is written in a cursive, flowing style.

TO: The Board of Fish

FROM: JoAnn Wichers

PO Box 1728

Kenai, AK 99611 907-283-5780

RE: Opening the East Side set netters in Cook Inlet



I would like to request the Board of Fish to lift the closure of the east side set net fishery in upper cook inlet for regular periods in July, for two openings July 26<sup>th</sup> & July 30<sup>th</sup>, to help harvest the sockeye run and then open them every other day in August to allow for the harvest of the pink salmon and sockeye salmon run, the basis for this request is due to the possible over escapement of sockeye salmon in the Kenai river.

The upper sub district set net fishery was only open one day so far this season and has not been allowed to partake in the harvest of the large run of sockeye salmon this season. As a 30 year set netter in Cook Inlet, I humbly request an opportunity to fish. My family has 5 permits and we have many expenses that are fixed costs that come with our investment each year. Many user groups have had the opportunity to fish and make a living this season, except the set netters which have been around for over 130 years in Cook Inlet. The guides were allowed to harvest the early run kings, part of the late run kings, even if it was on catch and release they still were given opportunity and will continue with other fisheries for the remainder of the season. The drifters are having a record season. The sport fish bag limit has been increased to 6 fish and the dip netters are allowed to fish 24 hours a day. All of this is happening while the traditional fishery (set netters) have been waiting on the beaches.

The commercial fishing set netters are closed due a low king count. Unfortunately, the count is based on a new counting system "Didson", this system is being run by the Sport Fish department. The Sport Fish Department is doing their best to get accurate king counts, however they give their final counts post season. This is too late for the commercial set netters. Also, the new Didson counter has four parts which help check its accuracy, unfortunately two of the parts are not being used to check the count this season. The parts are, #1 The counter itself, which is currently over run with reds and so it takes many people counting the data, and several days lag time before numbers are posted, (only twice a week) Commercial sockeye salmon counts are given daily. #2 A drift net in the river, which can also be considered askew at this time due to the high numbers of reds in the river which also get caught in this net and can make it difficult to catch a king, just as the set netters know when we have large reds days you do not catch as many kings, common sense can tell you the kings can avoid a wall of red salmon. #3 Sport catch - which is closed and so this is not being used as a cross check reference, and #4 Commercial set net, which is closed and so there is no data to reference there.

Finally as of 7/22/12 according to the local Dept of Sport Fish the king count was 7,900. It is my understanding that in the past while testing the Didson counter, they took the Didson counts and then multiplied them by 2 or 3 to allow for error and then used this as the number. This would give them 15,800 or 23,700 which is more than enough kings in river to allow the set netters to fish.

In closing, I would request the Board of Fish take immediate action to lift the closure on east side set netters to regular periods in July and to every other day in August for the 2012 fishing season.

Sincerely,

JoAnn Wichers

*JoAnn Wichers*

Attention:

Monica Wellard

907-965-6094

PETITION #5

TO: MONICA WELLARD, EXECUTIVE DIRECTOR, BOARDS SUPPORT SECTION  
FROM: JUSTIN MCCAUGHAN AND TODD MCGOUGH, EAST SIDE SET NETTIERS  
SUBJECT: EMERGENCY PETITION REQUESTING SET NET FISHING IN UPPER COOK INLET  
DATE: JULY 25, 2012

The purpose of this letter is to file an emergency petition to the Alaska Board of Fisheries (Board) per Section AS 44.62.230 of the Alaska Statute for consideration at its teleconference meeting on July 26, 2012.

The Alaska Department of Fish and Game (Department) recently closed the commercial set gillnet fishery in Upper Cook Inlet (UCI) per Section 5 AAC 21.359 (b)(3)(C) and 5 AAC 21.359 (c)(4) of the Cook Inlet Area Commercial Salmon Fishing Regulations via Emergency Order No. 2S-14-12 as a king salmon conservation measure. At the same time, the Department is expecting a sockeye run above forecast with a very strong likelihood of a significant over-escapement of sockeye salmon in the Kenai River. With the set gillnet fishery out of the water, there is a much higher likelihood of over-escapement. The set gillnet fishery would normally fish alongside the drift gillnet fleet to help manage sockeye harvests and eliminate potential over-escapements. The set gillnet fishery typically harvests roughly one half of the total Upper Cook Inlet sockeye catch. It is likely that the sole use of the drift gillnet fleet as a measure to harvest excess sockeye will not be enough to guard against exceeding in-river goals and over-escaping the river, resulting in significant threats to future Kenai River sockeye stocks.

We respectfully request that the Board consider superseding Emergency Order No. 2S-14-12 to re-open set gillnet fishing in the following statistical areas of the East Side Set fishery in the Central District of UCI:

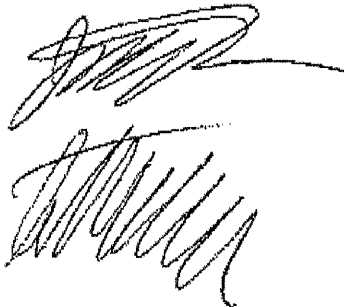
- 244-42 East Forelands
- 244-41 Salamatof
- 244-32 North K-Beach (beyond one half mile of the mean high tide mark)
- 244-31 South K-Beach (beyond one half mile of the mean high tide mark)
- 244-22 Cohoe (beyond one half mile of the mean high tide mark)
- 244-21 Ninilchik (beyond one half mile of the mean high tide mark)

We believe that restricting set gillnet fishing to beyond one half mile of shore south of the Kenai River will provide for adequate and immediate conservation of king salmon running along the beaches, while maximizing sockeye salmon harvests. Ultimately, we believe a balanced management approach like this would conserve both the king and sockeye stocks while at the same time prevent significant economic hardship to select user groups of the UCI fishery and the Kenai Peninsula.

Respectfully Submitted,

Justin McCaughan, Cohoe Beach set netter  
907-262-6135, cohoebeachfishing@gmail.com

Todd McGough, Cohoe Beach set netter  
907-262-6135, cohoebeachfishing@gmail.com



Petition #6

**Wellard, Monica J (DFG)**

---

**From:** Dupuis, Aaron W (DFG)  
**Sent:** Wednesday, July 25, 2012 3:21 PM  
**To:** Wellard, Monica J (DFG)  
**Subject:** FW: Petition fax number

Monica,

I am forwarding a petition from an East Side set netter.

Peace,

Aaron Dupuis  
Fishery Biologist II  
43961 Kalifornsky Beach Road, Suite B  
Soldotna, AK 99669-8276  
Phone: 907-260-2916

---

**From:** Nancy J. Richar [<mailto:nroilwell@yahoo.com>]  
**Sent:** Wednesday, July 25, 2012 3:18 PM  
**To:** Dupuis, Aaron W (DFG)  
**Cc:** [nroilwell@yahoo.com](mailto:nroilwell@yahoo.com)  
**Subject:** Re: Petition fax number

Aaron..I dont have access to a printer..pls forward  
Monica Wellard, Ak Board of Fisheries  
per AS 44.62.270 I request an emergency meeting of the Board regarding the set-net closures of the upper sub-district East side Cook Inlet. we have been forced to sit out this season and it is causing extreme financial damage to of us, at age 67 with several medical problems, being single I find myself working at minimum wage at a local cannery sorting fish 12-15 hours a day to cover cost of filling a bulk propane tank I had hoped to purchase so I would no longer be forced to drag 100 # bottles..such a simple thing but without fishing I cannot do it..social security check just isnt enough..many simple suggestions have been made but Fish & Game lacks authority we must beg you to convene immediately and try to help us to survive..not many days are left...the Commissioner of Fish and Game demanded a secret undisclosed location for meeting rather than risk being asked anything by local fishermen or view their nonj-violent rallies on local streets...we need someone to come and care about us while there are still a few fish to be caught. we could fish one net beyond 1/2 mile, be allowed to drift one net from a skiff per permit, be allowed to operate dipnet at mouth of river, as long as we have permits and licenses, and be allowed to sell...some may not like it but we sure dont like watching everyone else raking in the fish while we sit on our hands. if you dont like our suggestions I suggest the state or Board come up with a better one. thank you for your consideration.  
Nancy Richar

July 25, 2012

To:  
Alaska Department of Fish and Game  
Board Support Section  
PO Box 115526  
Juneau, Alaska 99811-5526  
FAX (907) 465 - 6094  
Board Support Executive Director  
Monica Wellard

Reason:

***Emergency Petition to the Alaska Board of Fisheries:***

BOF resolutions and policy statements related the petitions/ 2000-203-BOF, 95-153-FB, 85-16-JB, 80-81-FB

To the attention of:

The Alaska Board of Fisheries  
Chairman Karl Johnstone

This emergency petition is to address, "...in rare instances, unforeseen circumstances may arise during the course of a fishery which would prevent a harvestable surplus from being taken. The board acknowledges that foregoing such harvest opportunities may not be in the state's best interest and that emergency regulations may be appropriate under such circumstances as long as the allocation impacts of any such regulation are not significant."

With the closing of the Upper Subdistrict of the Central District of Upper Cook Inlet (UCI) setnet fishermen are seeking relief from the devastating restrictions, the unequal burden of conservation placed on the East Side Set Net (ESSN) fishery. Opportunity to harvest abundance of sockeye has been completely restricted from the complete closure in affect July 17, 2012; a zero harvest opportunity by the historical and traditional fishery. A defacto re-allocation to the drift gillnet fishery has created an unequal opportunity for the commercial setnet gillnet fleet within the UCI area.

We would request the BOF to alleviate some of the "burden" by opening up the area in the current regular corridor;

5 AAC 21.200 Fishing Districts, Subdistricts, and Sections  
(b) (2) (B) Kenai Section: (D) Kasilof Section:

This area would mirror the current defined areas in the Upper Subdistrict of the Central District of Upper Cook Inlet. The area for setnet fishing could be further defined to remain within 3 nautical miles of the area from the Ninilchik River marker to the Kenai River marker and 2 nm from the Salamantof to the East Foreland statistical area.



I had submitted this option to the Commissioners office on July 21, 2012 with other possible solutions.

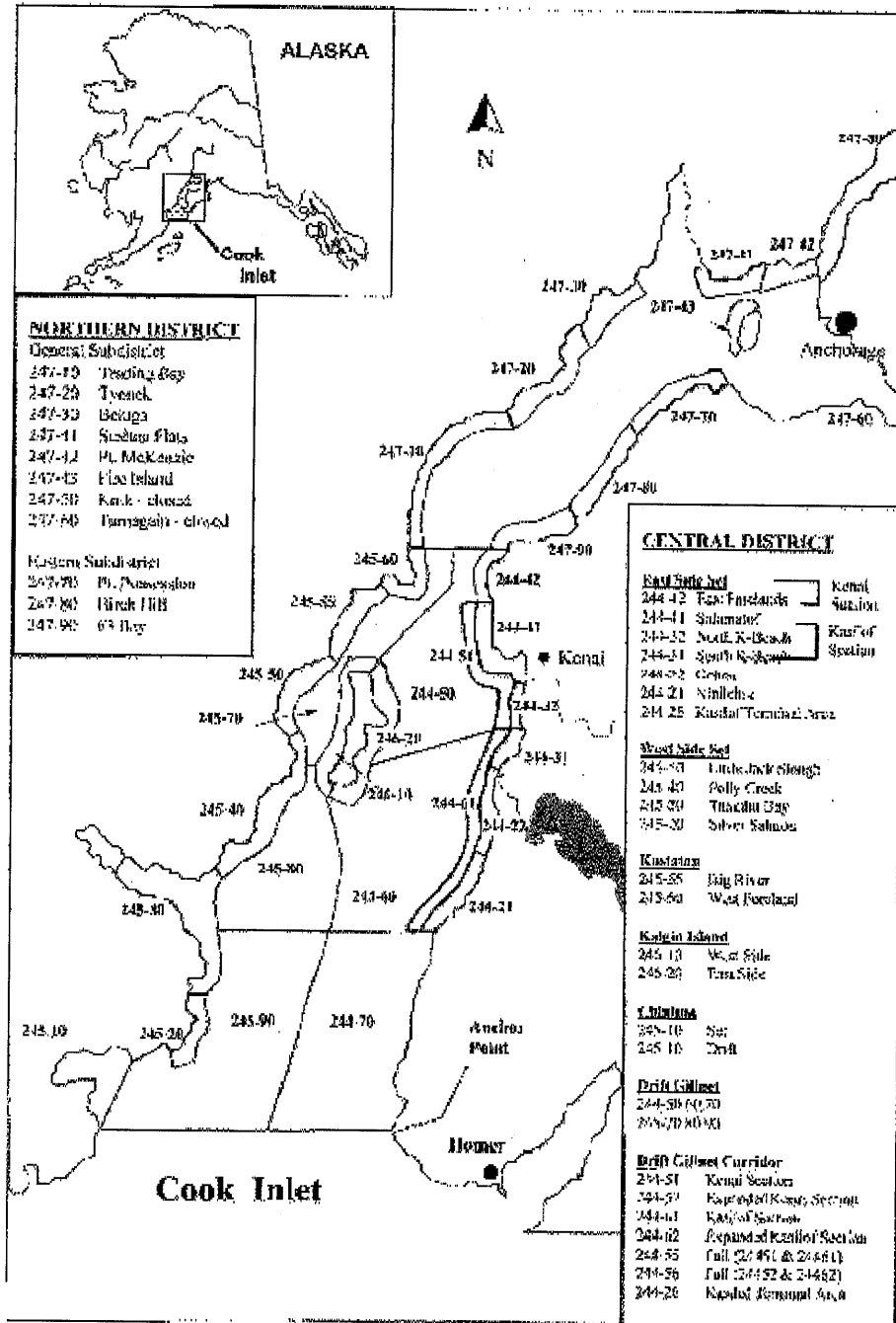
\*Open the Kenai and Kasilof sections for setnet fishing with registered ESSN permit holders for the normal 35 fathoms net per permit. Distance between other gear must remain 600ft as is currently in regulation; hours of operation will be consistent within area statistical designation (244 - 51, 244 - 61).

Further Justification for allowing fishing outside of the (US/CD) and in the Kenai and Kasilof corridors is that it will lessen the harvest of king salmon as indicated by the current drift net harvest reported in this statistical area (244 - 51, 244 - 61).

At the termination of this "emergency fishery" buoys may be required to be removed from this open area.

Submitted by: *Paul A. Shadura II*

Paul A. Shadura II  
P.O. Box 1632  
Kenai, Alaska 99611-1632  
(907) 283 - 5098



July 21, 2012

To:  
State of Alaska  
Department of Fish & Game  
Commissioner Cora Campbell  
PO Box 115526  
Juneau, AK. 99811-5526

From:  
Paul A. Shadura II  
PO Box 1632  
Kenai, Alaska 99611-1632  
(907) 283 - 5098, (907) 252 - 4290 cell

Commissioner Campbell,

A group of east side Cook Inlet (CI) setnet fishermen have requested me to contact your office with possible alterations to the current restrictions for the Upper Cook Inlet Sub-District setnet fishery.

We are confident that your authority vested to you under State statute (note (80) & (70)), and within various regulations, gives you the "in-season" latitude to open and close areas and to alter fishing methods, regulate time and means to conduct a fishery for the betterment of the State (note (60)). The Commissioner also has clarity in the form of a previous CI decision that upholds a policy to prioritize one user group over another to enhance opportunity to harvest a given stock (note (70) & (50)). In Cook Inlet, there is specific authority (note (40)) that guides the Board of Fisheries, the Alaska Department of Fish and Game (ADF&G) and the public on how the CI management plans will be derived, at the same time it gives a clear and concise understanding that the Commissioner can modify any management plan to accomplish other, possibly, competing goals. An example of this is included at the end of; Kenai River Late-Run Salmon Management Plan (note (30)); (f) exempts the Kasilof "step down" plans from this regulation, (h) specifically states that the Commissioner may depart from the provisions as provided in the (e) statement in the Upper Cook Inlet Salmon Management Plan (note 40)).

It is the latitude given specifically to the Commissioner (note (100)) that bridges the "gaps" from one static plan to another. It allows a dynamic response to negate a lost harvest opportunity (note (110)); unexpected consequences can be dealt with on a real time basis. It is readily apparent that the current regulation in place, adopted over decades ago, that demands the closure of the ESSN (note (30)) did not consider nor did they have available the current information or the enumerating indices and the technologies that are presently being utilized. New information is available and it has not been reviewed by the Alaska Board of Fisheries (BOF) and the public review process (note (120)).

The Commissioner has a unique position; responsible for the perpetuity of the resource, as well as being accountable for the "well being" (note (80)) of the people of the State.

To assist with applying options we offer these temporary mitigating measures:

\* Manage the sockeye resource on abundance (note (50)), and open the East Side Set Net (ESSN) fishery immediately under current hours allowed to the Drift net fishery (note (90)).

\* Open the Kenai and Kasilof sections (note (10)) for setnet fishing with registered ESSN permit holders for the normal three 35 fathom nets per permit. Distance between other gear must remain 600 ft as is currently in regulation; hours of operation will be consistent within area statistical designation (244-51, 244-61).

\* Open the Kenai and Kasilof sections (note (10)) for setnet permit holders who have registered for the ESSN area for drift net fishing with a maximum of 105 fathoms per permit holder. Distance between gear shall remain 600 ft apart; hours of operation will be consistent within area statistical designation (244-51, 244-61).

\* Open portions of the current Upper Cook Inlet (UCI), Upper Subdistrict (US/CD) of the Central District for setnet fishing (note (60)) outside of; one-half nautical mile (nm), three-quarters (nm), one-mile (nm). Time and area to be determined by area managers.

\* Open portions of the current (UCI), (US/CD) for setnet fishing (note (60)) as noted above in conjunction with areas outside of (US) (244-51, 244-61).

Justification for allowing fishing outside of the (US/CD) and in the Kenai and Kasilof corridors is that it will lessen the harvest of king salmon as indicated by the current drift net harvest reported in this statistical area (244-51, 244-61).

Please review the enclosed information, if you have any questions I am available as are other informed setnet fishermen that would be willing to answer any questions you may have.

Thank you,

Paul A. Shadura II  
East Side Set Net Commercial Fisherman

# **ATTACHMENT 6**

**Exhibit V**



# ALASKA STATE LEGISLATURE

SENATOR THOMAS H. WAGONER

Co-Chair: Senate Resources Committee

Member: C&RA Committee

Member: LB&A Committee

Member: Regulatory Review

Member: World Trade

Official Business

Session: January - May

State Capitol, #427

Juneau, AK 99801

Phone: 907-465-2828 Fax: 907-465-4779

Interim: May - December

145 Main Street Loop, Suite 226

Kenai, AK 99611

Phone: 907-283-7996 Fax: 907-283-8127

July 25, 2012

Governor Sean Parnell  
P.O. Box 110001  
Juneau, Alaska 99811-0001

Dear Governor Parnell:

Based on your July 14, 2012 letter to Rebecca Blank, Acting Secretary of the United States Department of Commerce, requesting consideration to declare a fishery disaster for the Chinook salmon fisheries on the Yukon and Kuskokwim, I am asking you to consider taking the same action on the Cook Inlet Chinook salmon fishery. The points used for the Yukon and Kuskokwim also fit the 2012 Cook Inlet Chinook salmon fishery.

The 2012 Kenai River king salmon fishery was restricted early in the season due to very low run strength. The low end of the escapement goal is 17,800, as of Monday there only about 7,000 and the department does not anticipate reaching the 17,800 goal. These low numbers triggered the Department of Fish and Game to issue Emergency Orders (No. 2S-14-12, 2-KS-1-42-12 and 2-KS-1-44-12) which closed the upper eastside set gillnet fishery, Kenai River drainage king salmon sport fishing and salt water sport fishing for king salmon. Also, personal use fishers are unable to keep king salmon if they catch any.

The in river and salt water sport fishing businesses have taken an economic hit with cancelations due to the king salmon fishery being closed. Businesses that benefit from the king salmon fishery have also been hurt with this closure.

The upper eastside set gillnet fishery has been shut down completely. They are unable to take advantage of the strong red salmon run that other users are benefiting from. Some of the set netters may end up having to file for bankruptcy due to the economic hardship from this complete closure.

Please consider requesting designation of the Cook Inlet Chinook salmon as a fishery disaster.

Regards,

A handwritten signature in black ink that reads "Tom Wagoner".

Senator Tom Wagoner

**Exhibit V**

# **ATTACHMENT 7**

**Exhibit V**

**ALASKA DEPARTMENT OF FISH AND GAME**  
**DIVISION OF COMMERCIAL FISHERIES**  
**NEWS RELEASE**



*Cora Campbell, Commissioner*  
*Jeff Regnart, Director*



---

Contact: Pat Shields, Area Management Biologist; Aaron Dupuis, Asst. Area Management Biologist  
43961 Kalifornsky Beach Rd, Suite B Soldotna, AK 99669  
Phone: (907) 262-9368 Fax: (907) 262-4709  
Date Issued: August 5, 2012 Time: 5:45 pm

---

**UPPER COOK INLET COMMERCIAL FISHING ANNOUNCEMENT No. 33**

The Upper Subdistrict set gillnet fleet will be open for the normally scheduled period on Monday, August 6, 2012 from 7 a.m. to 7 p.m. The drift gillnet fleet will be open for its normally scheduled period on Monday, August 6, 2012 from 7 a.m. to 7 p.m. The area open to the drift gillnet fleet will be all of the waters normally open in the Central District of Upper Cook Inlet.

The August 5th king salmon summary shows that the 2012 Kenai River king salmon run is later than what is typical. Since July 25, daily king salmon passage has ranged from 489 fish to 878 fish and is continuing to sustain those passage rates. This information indicates the 2012 run-timing indices currently being used to assess the run have increased by over 50% in the last 10 days. Even though all data on late-run king salmon indicate low abundance of fish this year, severe restrictions to all fisheries have reduced the harvest of late-run king salmon to the minimal extent that the DIDSON based king salmon escapement for the 2012 Kenai River late-run of king salmon will be larger than the last two years and may provide adequate spawning escapement. Based on this information, commercial fishing will be allowed during a regular period.

The August 5, 2012 king salmon summary can be found at:

<http://www.adfg.alaska.gov/sf/FishCounts/index.cfm?ADFG=main.kenaiChinook>



# **ATTACHMENT 8**

**Exhibit V**

STATE CAPITOL  
P.O. Box 110001  
Juneau, AK 99811-0001  
907-465-3500  
fax: 907-465-3532



550 West Seventh Avenue, Suite 1700  
Anchorage, AK 99501  
907-269-7450  
fax 907-269-7461  
[www.Gov.Alaska.Gov](http://www.Gov.Alaska.Gov)  
[Governor@Alaska.Gov](mailto:Governor@Alaska.Gov)

Governor Sean Parnell  
STATE OF ALASKA

August 16, 2012

The Honorable Rebecca Blank  
Acting Secretary  
United States Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230

Re: Federal Fishery Disaster

Dear Madam Secretary,

I trust you received my letter of July 14 advising you of the very serious situation in Alaska due to significant declines in Chinook salmon abundance and requesting a federal disaster declaration for the 2011 and 2012 Chinook salmon seasons on the Yukon and Kuskokwim Rivers. In that letter, I also alerted you that Cook Inlet Chinook salmon were experiencing diminished returns and fisheries managers had imposed severe restrictions.

Now that the Chinook runs in the Cook Inlet area have largely concluded, in accordance with Section 312(a) of the Magnuson-Stevens Fishery Management and Conservation Act (MSA), I am writing to request that you declare a fishery disaster for Upper Cook Inlet salmon fisheries for 2012. A number of the region's fisheries have been severely disrupted by the abrupt decline of Chinook salmon in the Kenai River and Northern District streams as fisheries managers restricted harvests in an effort to meet conservation objectives. The MSA authorizes the Secretary of Commerce to determine if a commercial fishery failure has occurred. I ask your prompt review of this matter due to the importance of these fisheries to the local, regional, state, and national economies.

Our analysis indicates that the decline of these fisheries meets the standards for a disaster determination under the MSA. The region has seen significant unanticipated decline of important fishery resources and while the cause of the decline is undetermined it may include reduced ocean survival rates or other unknown factors. As a consequence, the salmon fisheries of the region that harvest these resources have been severely restricted with revenues far below levels seen in prior years.

The Kenai River Chinook salmon run saw steep decline in returns for 2012. The stock is managed to provide a range of escapement into the river to ensure future sustainability. In 2012, the total run was well below expectations and fisheries that harvest the stock were tightly constrained to help provide for escapement. In order to pass Chinook salmon to the river and provide for spawning

The Honorable Rebecca Blank  
August 16, 2012  
Page 2

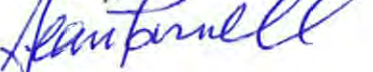
escapement, the east side setnet fishery was closed for most of June and July, the period in which most of the harvest generally occurs. As a result, a fishery which provides an average annual return to fishermen of \$10,900,000 yielded only about \$1,100,000 in 2012, a decline of nearly 90 percent.

The Kenai River Chinook salmon sport fishery was severely restricted and even closed for much of the season in order to conserve Chinook salmon for escapement. The Chinook sport fishery is one of the principle economic drivers for the local and regional economy, bringing in tens of thousands of visitors and supporting guided fishing ventures and lodges. These members of the fishing community suffered substantial losses as a direct result of the decline of the Kenai Chinook salmon run.

Fisheries in the Northern District were restricted as well. The Northern District setnet fishery was closed or restricted for many of the regularly scheduled periods in June and July; resulting in Chinook harvests of less than half the annual average. The sport fisheries in Northern District streams also experienced restrictions, with preseason restrictions tightening in-season and eventually going to complete closure on some systems. These restrictions affected the guides and many other support businesses who count on a robust sport fishery to generate traffic and economic activity in the region.

I cannot overstate the importance of fisheries to the economy of the Upper Cook Inlet region. Throughout this area, impacts are being felt by commercial fishermen, sport guides, fish processors, and those who sell fuel, tackle, supplies, groceries, and lodging. Local governments will feel the impact of lost revenue to their economic base. The Cook Inlet salmon runs are also an important food source to both Kenai Peninsula and Matanuska-Susitna Valley residents. The Upper Cook Inlet salmon fisheries affected by the decline of the Chinook salmon runs are crucial to the economic vitality of the region and the well being of the residents. I appreciate your prompt attention to this matter. I have directed the Alaska Departments of Commerce, Community and Economic Development and Fish and Game to provide National Marine Fisheries Service and your office with any additional information needed to make a determination.

Sincerely,



Sean Parnell  
Governor

cc: The Honorable Lisa Murkowski, United States Senate  
The Honorable Mark Begich, United States Senate  
The Honorable Don Young, United States House of Representatives  
The Honorable Gary Stevens, Alaska State Senate  
The Honorable Mike Chenault, Alaska State House of Representatives  
The Honorable Bill Stoltze, Alaska State House of Representatives  
The Honorable Bill Thomas, Alaska State House of Representatives  
The Honorable Bert Stedman, Alaska State Senate  
The Honorable Lyman Hoffman, Alaska State Senate

The Honorable Rebecca Blank  
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The Honorable Tom Wagoner, Alaska State Senate  
The Honorable Charlie Huggins, Alaska State Senate  
The Honorable Linda Menard, Alaska State Senate  
The Honorable Kurt Olson, Alaska State House of Representatives  
The Honorable Mark Neuman, Alaska House of Representatives  
The Honorable Wes Keller, Alaska House of Representatives  
The Honorable Shelley Hughes, Alaska House of Representatives  
The Honorable Susan Bell, Commissioner, Alaska Department of Commerce, Community,  
and Economic Development  
The Honorable Cora Campbell, Commissioner, Alaska Department of Fish and Game  
Kip Knudson, Director of State and Federal Relations, Office of the Governor

# EXHIBIT W

## **Hilborn presentation on Title II of the Ocean-Based Climate Solutions Act**

Ray Hilborn Professor School of Aquatic and Fishery Sciences Box 355020 University of  
Washington Seattle, WA 98195-5020 U.S.A.

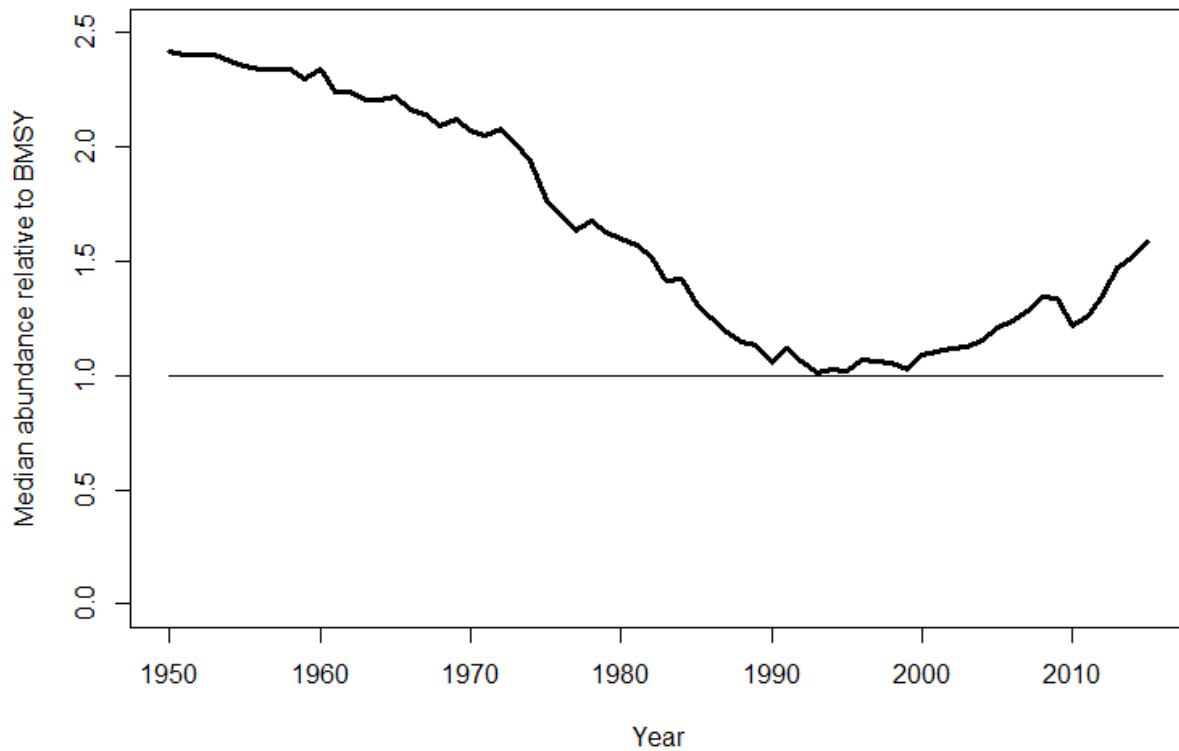
For House Committee on Natural Resources hearings on the 17 November 2020

Good morning and I want to thank the members and staff for the opportunity to address this committee. My name is Ray Hilborn, I am a Professor of Fisheries and Aquatic Sciences at the University of Washington. I have been studying fisheries management for 50 years, both in the U.S. and in a number of other countries and international commissions. I currently serve on the SSC of the Western Pacific Council. My research has resulted in 300 peer reviewed journal articles, and several books including “Quantitative fisheries stock assessment and management” which is a standard reference work on fisheries management. My work has been recognized by several awards including the Volvo Environmental Prize, the International Fisheries Science Prize, and the Ecological Society of America’s Sustainability Science Prize.

I am not representing any group, although I do receive research funding from a wide range of sponsors including major U.S. foundations such as the Gordon and Betty Moore Foundation, the David and Lucielle Packard Foundation and the Walton Family Foundation; NGOs such as the Environmental Defense Fund, The Nature Conservancy and the Natural Resources Defense Council; agencies including the National Science Foundation and NOAA; and commercial and recreational interest groups,

As someone who has worked in fisheries for over 50 years, and done field work in Alaska for almost 40 years, I know that global warming is real, and climate change is the major challenge to American fisheries. The key question is what are the most appropriate tools to respond?

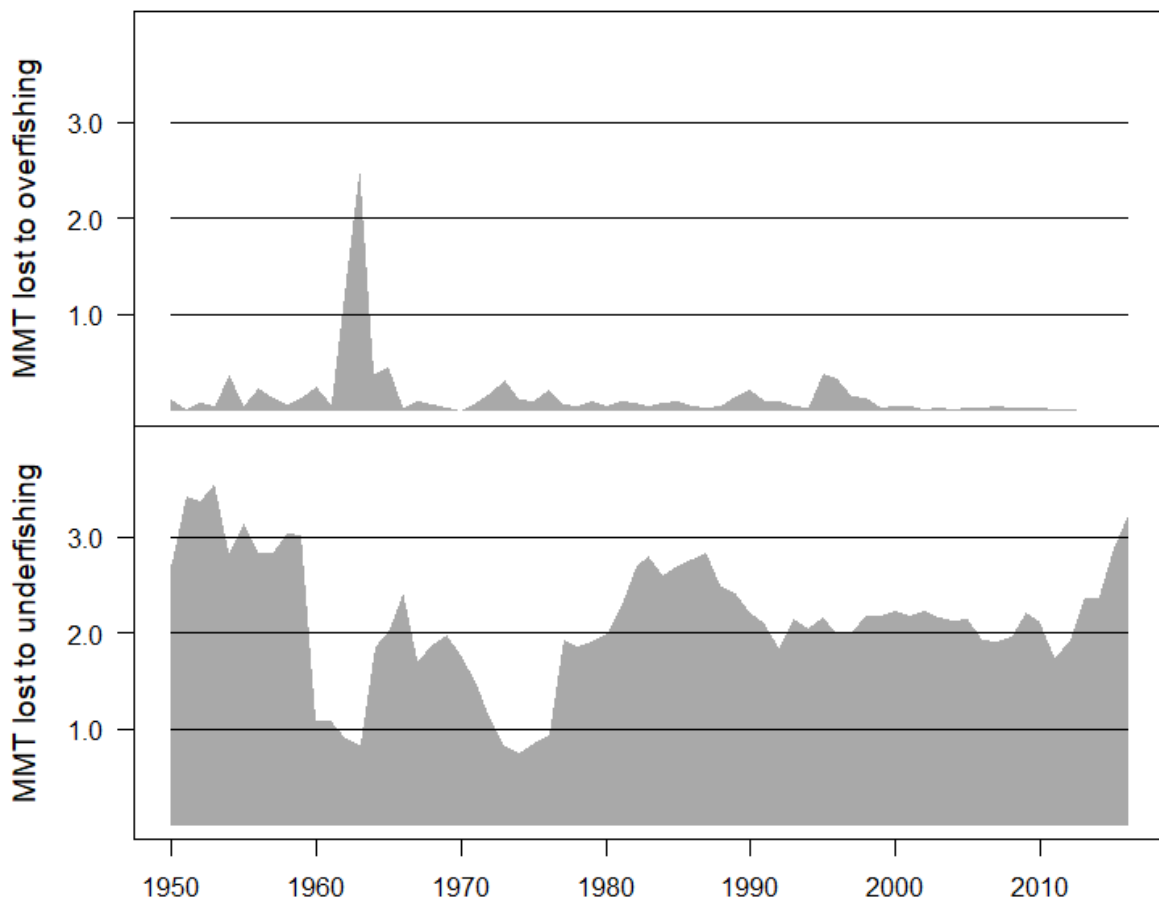
Before we discuss how to respond to climate change we first need to set the stage. What is the state of U.S. fisheries and Oceans? U.S. fish stocks are healthy and increasing in abundance, and U.S. fisheries management is highly precautionary. Figure 1 shows the median abundance of scientifically assessed stocks in the U.S. relative to the reference point of the abundance that would produce maximum sustainable yield<sup>1</sup>. As you will see the median abundance has always been above the target level and has been increasing since 2000.



**Figure 1. Median stock abundance of U.S. stocks relative to the target biomass that would produce maximum sustainable yield.**

<sup>1</sup> Data from NOAA stock assessments and can be found in [www.ramlegacy.org](http://www.ramlegacy.org)

In a recent paper in Proceedings of the National Academy of Sciences (1), we showed that overfishing is causing only a 3-5% loss in potential yield from U.S. fisheries, whereas precautionary underfishing is causing far more. Figure 2 shows the loss of U.S. fish production in millions of tons from overfishing, and from underfishing. Underfishing is simply harvesting less than would produce maximum sustainable yield. If we were to fully exploit all of our underfished resources we might increase yield by 40%. Overfishing is simply not a major concern for U.S. fisheries production: science-based management under the Magnuson-Stevens Act is working.



**Figure 2. The amount of yield lost to overfishing and underfishing from U.S. fish stocks.**

Also to set the stage, the Committee should be aware that in general U.S. fisheries produce food, protein and nutrients at much lower environmental cost than alternative land-based production



methods (2). Expanding crops production requires destroying native ecosystems, with most growth in global production coming from conversion of tropical forests. In contrast the well-managed U.S. fisheries maintain largely natural ecosystems that are little altered when compared to the conversion from forest to crops. Anything that reduces U.S. fish production will either cause us to import more fish from places with lower environmental standards, or rely on more land based production.

The impact of fishing on non-target species such as birds, and mammals, and on vulnerable marine ecosystems, is less well known but of more concern than overfishing target species, and to me the major challenge to sustaining our oceans and producing food from the ocean.

Climate change has two major dimensions, warming and increased variability in weather. Warming has been shown to cause species to shift their ranges (3), generally but not always towards the poles, and some species will become less productive and others will become more productive. We may also expect more variation from year to year in the abundance of fish stocks.

Recent examples of shifting distributions include the movement of pollock in the Bering Sea northwards, and North Atlantic right whales moving into areas of intense lobster and crab fishing. Responding to these changes in distribution requires dynamic real time management.

So how should we respond to the challenges of climate change? The U.S. has an admirable set of laws and institutions that can do this. The Regional Fisheries Management Councils have the authority, and the Magnuson-Stevens Act, the Endangered Species Act, the Marine Mammal Protection Act and other legislation gives Councils the tools to respond to climate change. We don't need a massive overhaul of existing law to tackle the challenge.

In the years ahead it will be important for fisheries management to be more flexible, allowing for changes in distribution and productivity. Areas and stocks that are high priority for protection now may not be the same in 20 years.

That brings me to Title II of the Ocean-Based Climate Solutions Act, which would require the establishment of marine protected areas that ban all commercial fishing activity in 30 percent of U.S. ocean waters by 2030. Such marine protected areas are simply the wrong tool for adapting to climate change. There are three primary objectives of the 30x30 proposal; (1) to increase target species production, (2) to protect non-target species and (3) to protect sensitive habitats. MPAs will either not help or there are better tools.

Both theory and empirical evidence shows that you cannot increase target species yield with MPAs unless overfishing is wide spread (4) (5) (6). Overfishing is rare in the U.S. and we would not expect MPAs to increase the yield from our fish stocks. Certainly there are typically more fish in the closed areas than outside, but remember that the fishing effort that was previously inside the MPA has been moved outside. The evidence shows that when MPAs are put in place and stocks are well managed, abundance goes up inside the closed area, and goes down outside with no-net gain.

In the highly publicized MPA network set up in California it has been shown that abundance of target species increased inside reserves, but declined outside (7) and that the result was no measureable increase in fish abundance (6).

It has been clearly demonstrated that bycatch can be best reduced by changes in fishing technology, fishing gear, or changes in incentives to alter fleet behavior. The dramatic reductions in bycatch from turtle excluder devices for trawls, acoustic pingers for gill nets, and a combination of tori lines, change in bait, circle hooks and night setting for longlines has often reduced bycatch by 90%. The

distribution of bycatch problems will change as species distribution changes. Setting aside fixed areas of the oceans is not going to be effective.

Certainly, vulnerable marine ecosystems need protection, but many Fishery Management Councils are doing that – and in a way that is science-based and has credibility with industry and other stakeholders. Moreover, these areas only need protection from mobile bottom contact gear such as trawls and dredges. There is no need to ban midwater trawling, purse seining, longlining or surface gill nets to protect corals, sponges or sea grasses. Moreover the distribution of these species may well change with climate change.

MPA advocates argue that MPAs are more resilient to climate change than fished areas; however a recent review article (8) entitled “Climate change, coral loss, and the curious case of the parrotfish paradigm: Why don't marine protected areas improve reef resilience?” has shown no evidence for this. Furthermore, the MPA advocates ignore that fact that 30x30 would cause 70% of U.S. oceans to see increased fishing pressure from the vessels that moved out of the 30% closed, and thus potentially be less resilient to climate change. Do we really want to make 70% of our oceans less resilient to climate change?

For none of these issues are no take MPAs the most appropriate tool, but the proposed legislation would draw staff time, resources and industry engagement away from the really effective tools. The oceans in the U.S. are under many threats beyond climate change, including ocean acidification, exotic species, land based runoff, plastics and illegal fishing. There are solutions to each of these problems, but it is not no-take MPAs – they do nothing to mitigate these problems.

I certainly agree with my colleagues in the environmental movement that we need to protect our oceans, but Title II takes the wrong approach and we can do much better if we apply the same

resources to the tools that will work. Let Councils use the effective tools to protect 100% of U.S. oceans, not apply an ineffective tool to 30%. No take areas are an inflexible, static tool, whereas agency management we already have can respond to climate change in real time.

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# EXHIBIT X

No. \_\_\_\_ - \_\_\_\_

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IN THE  
**Supreme Court of the United States**

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STATE OF ALASKA

*Petitioner,*

v.

UNITED COOK INLET DRIFT ASSOCIATION; COOK INLET  
FISHERMEN'S FUND,

*Respondents.*

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On Petition for a Writ of Certiorari to the  
United States Court of Appeals for the Ninth Circuit

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**PETITION FOR WRIT OF CERTIORARI**

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DATED: FEBRUARY 27, 2017

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## QUESTION PRESENTED

Since statehood, Alaska has managed under state law three salmon fisheries that overlap state and federal waters. The Federal Government has repeatedly approved of state management of these fisheries.

After fifty-seven years of successful state management, the Court of Appeals for the Ninth Circuit held that the Magnuson-Stevens Fishery Conservation and Management Act ("Magnuson-Stevens Act" or the "Act") requires that the fisheries be managed under a federal fishery management plan ("FMP"), rather than under state law.

The National Marine Fisheries Service ("NMFS") agrees that managing these salmon fisheries to meet "escapement goals," as the State does, is more effective at preventing overfishing than how the fisheries will be managed under an FMP, which requires managing the fisheries to meet inflexible catch limits. The question presented is:

May the Secretary of Commerce, acting through NMFS, approve an FMP that excludes and defers to state management of a fishery, because NMFS concludes that the excluded fishery does not require a plan and would be worse off managed under a plan?

## **PARTIES TO THE PROCEEDINGS BELOW**

Petitioner in this case is the State of Alaska.

Respondents in this case are United Cook Inlet Drift Association, Cook Inlet Fishermen's Fund, and the federal parties listed below.

Before the Ninth Circuit the State was an intervenor-defendant-appellee, aligned with defendants-appellees (and respondents in this case) National Marine Fisheries Service; Penny Pritzker, in her official capacity as Acting United States Secretary of Commerce; Kathryn Sullivan, in her official capacity as Acting Under Secretary of Commerce and Administrator for the National Oceanic and Atmospheric Administration; and James W. Balsiger, in his official capacity as NMFS Alaska Region.

Before the Ninth Circuit United Cook Inlet Drift Association and Cook Inlet Fishermen's Fund were plaintiffs-appellants.



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## PETITION FOR WRIT OF CERTIORARI

State of Alaska petitions for a writ of certiorari to review a judgment of the United States Court of Appeals for the Ninth Circuit.

### OPINIONS BELOW

The opinion of the Ninth Circuit is reported at 837 F.3d 1055 and reproduced at Appendix (“App.”) 1a–23a. The Ninth Circuit’s order denying rehearing and rehearing en banc is unreported and reproduced at App. 82a–83a. The opinion of the district court is unreported and reproduced at App. 24a–81a.

### JURISDICTION

The Ninth Circuit rendered its decision on September 21, 2016. App. 1a–23a. A timely petition for rehearing and rehearing en banc was denied on November 30, 2016. App. 82a–83a. This Court has jurisdiction under 28 U.S.C. § 1254(1).

### STATUTES AND REGULATIONS INVOLVED

Pertinent provisions of the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801, et seq., and regulations promulgated thereunder, are reproduced at App. 84a–112a.

## INTRODUCTION

The Ninth Circuit's decision in this case will harm some of the nation's most important fisheries. The case directly involves one of the nation's most productive wild salmon fisheries: Cook Inlet, Alaska. Cook Inlet and two other salmon fisheries in Alaska overlap state waters and a small part of the adjacent federal waters. The Ninth Circuit held that the federal waters portion of Cook Inlet must be managed under an federal fishery management plan ("FMP") even though the National Marine Fisheries Service ("NMFS") agrees that will do more harm than good for Cook Inlet salmon.

Salmon are anadromous fish. They hatch in freshwater streams and lakes, spend much of their lives at sea, and then return, often in large "runs" at predictable times to the freshwaters of their origin to spawn and sustain future runs of salmon.

Under an FMP, these salmon fisheries will have to be managed to meet annual catch limits. Catch limits restrict the amount of salmon that may be caught and are determined before the fishing season. Because it can be difficult to forecast how many salmon will return in a given year, NMFS agrees that managing these fisheries with catch limits risks overfishing: sometimes the limits will turn out to be too high, and sometimes too low.

The State's management method under state law is better. The State monitors salmon returns in-season, and by emergency order allows the level of fishing that will ensure that the appropriate number of salmon reach their spawning grounds to sustain the stock. NMFS agrees that the State manages

these fisheries consistent with the National Standards of the Magnuson-Stevens Act.

Since 1959, the State has managed these three fisheries under state law. In 2012, NMFS approved a salmon FMP for Alaska that excluded from its coverage the small part of federal waters where these fisheries occur, so that the State could continue managing the fisheries as single units in both state and federal waters. Removing the fisheries from the FMP allows for state management because the Magnuson-Stevens Act preserves state jurisdiction over in-state registered fishing vessels in federal waters in the absence of an FMP for a fishery. NMFS concluded that there was a low risk of fishing in these federal waters by out-of-state registered vessels, and if such fishing ever occurred, NMFS could close the fishery.

Plaintiffs are commercial fishermen who challenged NMFS's decision as it relates to Cook Inlet under the Administrative Procedure Act ("APA"). Plaintiffs contend that the Magnuson-Stevens Act requires an FMP for the entirety of any fishery that requires conservation and management in some manner from some entity. By contrast, NMFS has long interpreted the Act as requiring an FMP only when a fishery requires the conservation and management measures that an FMP would provide. The district court upheld NMFS's interpretation, but the Ninth Circuit reversed.

The Ninth Circuit's decision will upend management of some of the nation's most important salmon fisheries. Before statehood, the Federal Government managed Alaska's salmon fisheries using a strategy that, like annual catch limits, failed to ac-

count for the unpredictability of salmon returns. The result was record low salmon harvests. Since the State took over management of its salmon fisheries, commercial salmon harvests have increased more than tenfold, and Alaska's salmon fisheries are recognized as sustainable and among the best managed fisheries in the world. The court's decision will return these three salmon fisheries to inferior federal management over the opposition of the experts at NMFS.

The Ninth Circuit's decision also logically applies to and will require FMPs for those non-salmon fisheries in Alaska that NMFS has concluded are better managed by the State without an FMP. The decision means that in Alaska and the Ninth Circuit, where most domestically produced seafood is commercially harvested, NMFS will be deprived of an important fishery management tool: the ability to defer to state management of a fishery when that is the best way to manage the fishery and prevent overfishing. Because NMFS appears to use this tool most often in Alaska, and for more important fisheries, it is unlikely that another court of appeals will have the opportunity to directly rule on the issue the Ninth Circuit decided. This case may be the Court's only chance to correct the Ninth Circuit.

The Ninth Circuit's decision is also erroneous. The Magnuson-Stevens Act obviously does not require an FMP for fisheries that will be worse off with an FMP than without one. In rejecting NMFS's longstanding interpretation of the Act, the Ninth Circuit failed to interpret the Act as a harmonious whole and give effect to every clause and word. This Court should grant the petition.

## STATEMENT OF THE CASE

## A. Alaska's salmon and other fisheries

Alaska leads the nation in the harvest of seafood. In 2014, commercial fishermen landed 5.7 billion pounds of finfish and shellfish in Alaska, which was 58 percent of the fish landed in the United States. U.S. Dep't of Commerce, *Fisheries of the United States 2014* (Sept. 2015) ("Fisheries of the United States"), at 8 (available at <https://goo.gl/iGgHT9>). The combined commercial harvest in Alaska and the other states within the jurisdiction of the Ninth Circuit equaled more than 70 percent of fish by weight landed in the United States. *Id.*

Fishing, and especially salmon fishing, is vital to Alaska's economy. In 2014, commercial fishing and the seafood industry accounted for billions of dollars in local economic impacts and supported approximately 61,000 full- and part-time jobs. U.S. Dep't of Commerce, *Fisheries Economics of the United States 2014* (May 2016) ("Fisheries Economics of the United States"), at 20 (available at <https://goo.gl/SsDlvZ>). That was more than one-sixth of all the jobs in the state. Recreational fishing accounted for another billion dollars in local economic impacts and supported 5,167 full- and part-time jobs. *Id.* at 21. Seafood is Alaska's largest foreign export, and the state by itself ranks sixth in seafood export value compared to seafood producing nations. The McDowell Group, *The Economic Value of Alaska's Seafood Industry* (Dec. 2015), at 5 (available at <https://goo.gl/LLYfvQ>). Among Alaska's commercial fisheries, salmon have the greatest ex-vessel value. *Id.* at 7. Salmon are also responsible for the greatest economic impact in terms of producing jobs and income, *id.* at 11, and are im-

portant to Alaska's recreational fisheries, *Fisheries Economics of the United States*, at 21.

Nearly 95 percent of salmon commercially landed in the United States are landed in Alaska. *Fisheries of the United States*, at xi–xii. Most of the rest are landed in Washington, California, or Oregon. *Id.* Alaska's salmon fisheries are certified as “well managed and sustainable” by the Marine Stewardship Council. Alaska's fisheries in general have been recognized as one the three best managed fisheries in the world, the others being Iceland and New Zealand. BOB KING, STATE OF ALASKA DEPT OF FISH AND GAME, *SUSTAINING ALASKA'S FISHERIES: FIFTY YEARS OF STATEHOOD* 47 (Jan. 2009) (“Sustaining Alaska's Fisheries”) (available at <https://goo.gl/1HbvWl>).

**B. The pre-statehood decline of Alaska's salmon fisheries, and their post-statehood recovery**

Alaska's salmon fisheries were not always well managed. The primary motivation for statehood was the failure of the federal government to properly manage Alaska's salmon fisheries and the desire for local control, according to a former territorial governor and keynote speaker at Alaska's constitutional convention. ERNEST GRUENING, *THE STATE OF ALASKA* 382–407 (1968) (“[T]he Territory of Alaska, deprived, as no other territory had been, of the control and management of its fisheries, through the intrigue and political manipulations of the same forces that have helped to destroy the resource, began to plead for the right of self-government.”). Pre-statehood management of Alaska's salmon fisheries was so bad that by 1953 harvests reached their lowest point in thirty-two years, and President Eisenhower declared the territory a federal disaster area. *Id.* at 404–05.

Among other issues, the federal government failed to appropriate sufficient funds to manage Alaska's fisheries, *id.* at 400-01, and established fishing periods months in advance based on salmon run expectations. Sustaining Alaska's Fisheries, at 9.<sup>1</sup> Because the number of salmon returning varies from year to year, inflexible management decisions made in advance, before a run's size is known, risk over- or under-harvesting stocks. The danger of over-harvesting is obvious, but under-harvesting salmon can also harm stocks because having too many fish in the spawning areas can overload the areas' capacity and lead to fewer salmon surviving. When the State took over management of its salmon fisheries it gave local managers the authority to open fishing by emergency order, based on actual run strength, and only when enough salmon, but not too many, were ensured to reach the spawning areas so as to sustain future yields. *Id.* The number of salmon that managers aim to have escape harvesters and reach the spawning grounds to sustain and maximize future yields is known as an "escapement goal." The constitution for the new state required that fisheries be managed on the sustained yield principle. Alaska Const. art. VIII, § 4.

After the State assumed control over its salmon fisheries at statehood, salmon runs and harvests began to recover. In the 1960s annual state salmon harvests ranged between forty and sixty million fish,

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<sup>1</sup> Another issue was the controversial use of fish traps in salmon fishing, which were allowed by the federal government but banned by the State at statehood. *Metlakatla Indian Cmty., Annette Islands Reserve v. Egan*, 369 U.S. 45, 47-48 (1962).

compared to twenty-five million in 1959. Sustaining Alaska's Fisheries, at 3, 10. Yet, a serious threat to Alaska's fisheries remained: foreign fishing. *See* App. 6a-7a (citing Mark H. Zilberberg, *A Legislative History of the Fishery Conservation & Management Act of 1976* ("Legislative History") 237-41, 352, 448-49, 455-56, 472-73, 476-81, 519 (1976)). As an example, it was estimated that in 1975 Japanese fishermen caught more than twice as many salmon in the North Pacific than American fishermen. *Legislative History*, at 265. The Magnuson-Stevens Act was enacted "to protect the American fishing industry, and to preserve endangered stocks of fish, from what were perceived to be predatory incursions by foreign fishing fleets into American waters." *Davrod Corp. v. Coates*, 971 F.2d 778, 785 (1st Cir. 1992).

### C. The Magnuson-Stevens Fishery Conservation and Management Act

In 1976, Congress enacted the Fishery Conservation and Management Act, Pub. L. No. 94-265, 90 Stat 331 (codified as amended at 16 U.S.C. §§ 1801-1891), later renamed the Magnuson-Stevens Fishery Conservation and Management Act, extending federal jurisdiction over fisheries within 200 miles from the coast. App. 6a. States retained jurisdiction over state waters, the first three miles from the coast, and the federal government asserted jurisdiction over the next 197 miles, called the exclusive economic zone ("EEZ"). *Id.* Among other things, the Magnuson-Stevens Act severely restricts foreign fishing in the EEZ. 16 U.S.C. §§ 1821-1829.

#### 1. The National Fishery Management Program

The Magnuson-Stevens Act also establishes a National Fishery Management Program. 16 U.S.C.



§§ 1851–1869. The Secretary of Commerce, acting through NMFS, is given authority to implement the program “to prevent overfishing, to rebuild overfished stocks, to insure conservation, to facilitate long-term protection of essential fish habitats, and to realize the full potential of the Nation’s fishery resources.” *Id.* § 1801(a)(6). Assisting NMFS are eight Regional Fishery Management Councils, which are advisory bodies with authority over different coastal regions. *Id.* §§ 1852(a)–(b). The North Pacific Fishery Management Council (“North Pacific Council”) has authority over the fisheries in federal waters off Alaska. *Id.* § 1852(a)(1)(G).

Section 1852(h) describes the “functions” of Councils. The principal task of each Council is to prepare FMPs and amendments “for each fishery under its authority that requires conservation and management.” *Id.* § 1852(h)(1). Councils conduct public hearings to receive input on the development of FMPs, *id.* § 1852(h)(3), and submit FMPs to NMFS for review and approval, *id.* §§ 1852(h)(1), 1854(a). As FMPs lack regulatory effect, Councils also propose regulations to implement FMPs and submit the proposed regulations to NMFS for review and approval. *Id.* §§ 1853(c), 1854(b).

FMPs, and regulations that implement FMPs, must be consistent with ten National Standards for fishery conservation and management. *Id.* § 1851(a). FMPs must also include certain mandatory provisions, while other provisions are optional. *Id.* §§ 1853(a)–(b). NMFS must review a recommended FMP “to determine whether it is consistent with the national standards, the other provisions of this chapter, and any other applicable law,” publish notice of

the plan and solicit public comments, and “approve, disapprove, or partially approve” the FMP. *Id.* §§ 1854(a)(1)–(3). A Council may submit a revised FMP if a plan is disapproved or only partially approved. *Id.* § 1854(a)(4).

NMFS reviews a Council’s proposed regulations “to determine whether they are consistent with the fishery management plan, plan amendment, this chapter and other applicable law.” *Id.* § 1854(b)(1). If that determination is affirmative, NMFS promulgates final regulations after providing notice and an opportunity for public comment. *Id.* § 1854(b)(3). If that determination is negative, the Council may submit revised proposed regulations. *Id.* § 1854(b)(2).

Councils do not propose FMPs for every fishery within their authority. The phrase “conservation and management” was added to § 1852(h)(1) in 1983 “to clarify that the function of the Councils is not to prepare a fishery management plan (FMP) for each and every fishery within their geographical areas of authority. Rather, such plans are to be developed for those fisheries which require conservation and management.” H.R. CONF. REP. NO. 97-982 (1982), *reprinted in* 1982 U.S.C.C.A.N. 4364, 4367. The Act defines “conservation and management” in part as “the rules, regulations, conditions, methods, and other measures ... which are required to rebuild, restore, or maintain, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment.” 16 U.S.C. § 1802(5).

NMFS has long interpreted § 1852(h)(1) as requiring Councils to prepare FMPs only for fisheries that require the conservation and management measures that an FMP would provide. Advisory

guidelines adopted by NMFS to assist Councils in the development of FMPs, 50 C.F.R. §§ 600.305–.355 (2016), recommend that if “an FMP can improve or maintain the condition of the stock,” *id.* § 600.305(c)(1)(iii), and the amount of the stock caught in federal waters significantly contributes to the stock’s status, that should “weigh heavily in favor” of a Council preparing an FMP, *id.* § 600.305(c)(3). On the other hand, if a stock is “already adequately managed by states” or otherwise, “consistent with the requirements of the Magnuson-Stevens Act and other applicable law,” § 600.305(c)(1)(x), that may “weigh heavily against a Federal FMP action,” *id.* § 600.305(c)(3). While these guidelines were recently revised, National Standard Guidelines, 81 Fed. Reg. 71858-01 (Oct. 18, 2016), that interpretation of § 1852(h)(1) by NMFS is longstanding, *see, e.g.*, 50 C.F.R. §§ 600.340(a)–(b) (1998).

Except for fisheries that are overfished, NMFS has discretion whether to adopt an FMP when a Council does not recommend one for a particular fishery. Specifically, NMFS “may” prepare its own FMP if a fishery requires conservation and management and a Council fails to develop an FMP after a reasonable time, 16 U.S.C. § 1854(c)(1)(A), or if NMFS disapproves or partially disapproves an FMP and a Council fails to submit a revised plan, *id.* § 1854(c)(1)(B). NMFS does not have discretion, and “shall” prepare its own FMP, if NMFS determines and notifies a Council that a fishery is overfished and the Council does not recommend an FMP for the fishery within two years. *Id.* §§ 1854(e)(2)–(5).

The Magnuson-Stevens Act allows a court to review and set aside NMFS's implementing regulations under some, but not all, of the judicial review provisions of the APA. *Id.* § 1855(f)(1)(B). The Act does not provide for judicial review of actions by Councils, such as whether a Council performed one of its "functions" under § 1852(h).

## 2. State jurisdiction over fisheries in the EEZ

As originally enacted, the Magnuson-Stevens Act preserved state jurisdiction over in-state registered fishing vessels in the EEZ. Pub. L. No. 94-265, 90 Stat. 331, 355 § 306(a) (previously codified at 16 U.S.C. § 1856(a) (1976)). The statutory language provided in relevant part:

No State may directly or indirectly regulate any fishing which is engaged in by any fishing vessel outside its boundaries, unless such vessel is registered under the laws of such State.

*Id.* Of course, under the Supremacy Clause state regulation of vessels in the EEZ must be consistent with federal law. *See, e.g., California v. Weeren*, 607 P.2d 1279, 1287 (Cal. 1980) (holding that the Magnuson-Stevens Act allowed California to regulate fishing in the EEZ where there was no FMP for the fishery).

The Sustainable Fisheries Act of 1996 amended the Magnuson-Stevens Act to both clarify and provide additional ways for a State to exercise jurisdiction over fishing vessels in the EEZ. Pub. L. No. 104-297, § 112(a), 110 Stat. 3559, 3595-96 (1996). The relevant subsection of the Magnuson-Stevens Act now has three discrete parts, 16 U.S.C.

§§ 1856(a)(3)(A)–(C), with subsection (a)(3)(A) allowing States to regulate fishing vessels in the EEZ if:

The fishing vessel is registered under the law of that State, and (i) there is no fishery management plan or other applicable Federal fishing regulations for the fishery in which the vessel is operating; or (ii) the State's laws and regulations are consistent with the fishery management plan and applicable Federal fishing regulations for the fishery in which the vessel is operating.

Under subsection (a)(3)(A), just as was true before its enactment, States can regulate in-state registered fishing vessels in the EEZ so long as federal law does not preempt state law. Legislative history for the amendment confirms that this subsection was meant not to change the law but to “clarify that a State may regulate a fishing vessel registered under its laws outside its boundaries if there is no Federal fishery management plan in place for a fishery,” as the prior provision was “somewhat vague with respect to a State's authority to regulate its vessels and [had] been the subject of recent court challenges.” S. REP. NO. 104-276, at 30 (1996), *reprinted in* 1996 U.S.C.C.A.N. 4073, 4103.

Under subsection (a)(3)(B), States may regulate in- or out-of-state registered fishing vessels in the EEZ if the FMP for the fishery in which the vessel is operating delegates management authority to a State, and the State's laws are consistent with the FMP.

Subsection (a)(3)(C) applies only to fisheries in Alaska. Although legislative history does not explain

the reason for it, subsection (a)(3)(C) was a response to the “Mister Big” episode discussed by the Ninth Circuit, where in 1995 an out-of-state registered vessel overharvested scallops in a fishery in Alaska that was not covered by an FMP. App. 9a–10a. Subsection (a)(3)(C) allows the State to regulate out-of-state registered vessels operating in the EEZ off Alaska, like the Mister Big, if the vessel is operating in a fishery for which there was no FMP in place on August 1, 1996, and NMFS and the North Pacific Council find that the State has a legitimate interest in conserving and managing that fishery. The State is able to regulate in-state registered vessels in such a fishery pursuant to subsection (a)(3)(A)(i). The state regulatory authority provided for under subsection (a)(3)(C) terminates upon the approval and implementation of an FMP for the fishery.

#### **D. The three historical commercial salmon fisheries**

Since statehood, Alaska has managed three commercial salmon fisheries that extend into the EEZ, depicted on the map at App. 113a, and commonly referred to as the Cook Inlet, Alaska Peninsula, and Prince William Sound Areas.<sup>2</sup> The three areas constitute a very small part of the EEZ and are adjacent to state waters. *Id.* This case directly concerns Cook Inlet. The federal government regulated commercial salmon fishing in Cook Inlet before statehood, after which the State took over management of the fishery. *See Alaska v. United States*, 422 U.S. 184, 200–01 (1975).

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<sup>2</sup> The map is also available at Figure 23 to 50 C.F.R. pt. 679 (2013).

The origin of these fisheries dates to 1953, when a treaty banned most commercial salmon net fishing in waters more than three miles from Alaska's coast, but exempted these three fisheries. App. 5a-6a. Congress implemented the treaty through the North Pacific Fisheries Act of 1954, and authorized the Secretary of Interior, who at the time had authority over fisheries, to promulgate regulations for fisheries contiguous to Alaska waters. *Id.* The Secretary, through the Bureau of Commercial Fisheries, Fish and Wildlife Service, issued a regulation prohibiting salmon net fishing in the western waters of Alaska, but excepting Cook Inlet and the two other areas where net fishing had historically been allowed; in those areas, federal regulation was to mirror Alaska regulation. 50 C.F.R. § 210.10 (1970) (repealed). In deferring to state management over these fisheries, the Bureau of Commercial Fisheries recognized that the State was best suited to manage the fisheries:

Since salmon stocks are dynamic in nature the management of them must be extremely flexible and under common management both within and outside of State waters which are open to commercial fishing.

North Pacific Commercial Fisheries, North Pacific Area, 35 Fed. Reg. 7070, 7070 (May 5, 1970).

The State continued to manage these fisheries after the enactment of the Magnuson-Stevens Act, though the North Pacific Council and NMFS could have proposed and promulgated an FMP and federal

regulations for the fisheries.<sup>3</sup> Instead, the first FMP for Alaska's salmon fisheries deferred to existing state management of the fisheries. Fishery Management Plan for the High Seas Salmon; Fishery Off the Coast of Alaska, 44 Fed. Reg. 33250 (June 8, 1979).

The FMP divided the federal waters adjacent to Alaska into East and West Areas, with the boundary at the longitude of Cape Suckling. *Id.* at 33267; see App. 113a (map depicting Cape Suckling). In the West Area, the FMP prohibited commercial salmon fishing except for the "existing small-scale net fisheries" in the three fisheries. *Id.* The plan noted that these fisheries were "technically" in the EEZ but "are conducted and managed by the State of Alaska as inside fisheries." *Id.* at 33267. At the time, a state could exercise jurisdiction over in-state registered vessels in the EEZ, consistent with federal law, even if the fishery was technically included within the FMP. The first FMP deferred to state management by including the fisheries within the plan but declining to adopt any federal management measures for the fisheries beyond the existing regulations under the North Pacific Fisheries Act (which deferred to state management). *Id.*<sup>4</sup>

In 1992, Congress repealed the North Pacific Fisheries Act and passed the North Pacific Anadro-

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<sup>3</sup> In 1970, most of the functions of the Bureau of Commercial Fisheries transferred to the Secretary of Commerce. Reorganization Plan No. 4 of 1970, § 1(a), 84 Stat. 2090 (1970).

<sup>4</sup> The Ninth Circuit's observation that in 1979 Cook Inlet salmon stocks were at historic lows under state management, App. 7a-8a, appeared to overlook that the Magnuson-Stevens Act was enacted in part to stop foreign fishing that was decimating fish stocks in the EEZ, Legislative History, at 265.



mous Stocks Act of 1992, which implemented a new fishing treaty that replaced the 1953 treaty. App. 9a. The new treaty did not apply to the EEZ. *Id.* As a result, NMFS repealed for lack of a statutory basis the regulations at 50 C.F.R. part 210 that had expressly deferred to the State's management of the three fisheries. Removal of Regulations, 60 Fed. Reg. 39272 (Aug. 2, 1995). The FMP was not amended at that time to reflect this change in law, and continued to provide that the State would manage the fisheries.

After the 1996 amendments to the Magnuson-Stevens Act, the State's jurisdiction over the three fisheries depended on the fisheries being excluded from the FMP, and the fisheries remained technically within the management area for the FMP, but with no federal management measures. Still, the State has continued to manage the three fisheries, just as it has done since statehood.

State management of Alaska's salmon fisheries has been extraordinarily successful. Whereas under federal management the state salmon harvest reached a low of twenty-five million fish in 1959, the state commercial salmon harvest in 2015 was estimated to be 263.5 million fish. Alaska Department of Fish & Game, *2015 Alaska Preliminary Commercial Salmon Harvest and Exvessel Values* (Oct. 16, 2015) (available at <https://goo.gl/ap9Mp2>). Even with this huge commercial harvest Alaska's salmon fisheries are recognized as sustainable and among the best managed fisheries in the world.

#### **E. Factual background**

In 2010, the North Pacific Council began a comprehensive review of the FMP. App. 12a. During that process, NMFS realized that Cook Inlet and the oth-

er two historical fisheries were “not exempt from the FMP as previously assumed.” *Id.* The FMP claimed that fishing in the areas was authorized by “other Federal law.” App. 12a–13a. But the “other Federal law” was the North Pacific Fisheries Act and its implementing regulations, both of which had been repealed. The North Pacific Council therefore circulated a draft Environmental Assessment analyzing four options for amending the FMP to provide for management of these areas, held five public meetings, and took testimony. App. 13a.

An update of the FMP was also needed after passage of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (“Reauthorization Act”). Pub. L. 109-479, 120 Stat. 3575 (2007). Subsection 104(a)(10) of the Reauthorization Act required that by 2011 FMPs establish a mechanism for specifying annual catch limits for fisheries managed under an FMP and accountability measures to ensure compliance with those limits. 16 U.S.C. § 1853(a)(15).

In December 2011, the North Pacific Council unanimously recommended that NMFS approve Amendments 10, 11, and 12 to the FMP. Fisheries of the Exclusive Economic Zone Off Alaska: Pacific Salmon, 77 Fed. Reg. 19605-01 (Apr. 2, 2012). Amendment 12, at issue in this case, revised the FMP to reflect the Council’s salmon management policy: to facilitate State management of all of Alaska’s salmon fisheries in accordance with the Magnuson-Stevens Act, Pacific Salmon Treaty, and applicable federal law. *Id.* at 19606. To that end, Amendment 12 redefined the FMP’s management area to exclude from the West Area the three fisheries and

the sport salmon fishery. *Id.* at 19606–07. The Council concluded that federal conservation and management of these fisheries was not necessary because salmon are more appropriately managed as a unit to meet in-river escapement goals. *Id.* at 19607. Excluding these fisheries from the FMP would allow the State to continue managing the stocks as seamlessly as practicable throughout their range, rather than imposing dual state and federal management. *Id.*<sup>5</sup>

As required by the Magnuson-Stevens Act, 16 U.S.C. § 1854(a)(1), NMFS evaluated Amendment 12 to ensure its consistency with the Act, including the National Standards and other applicable law. Fisheries of the Exclusive Economic Zone Off Alaska; Pacific Salmon, 77 Fed. Reg. 75570 (Dec. 21, 2012). NMFS agreed that State management of the three fisheries is “consistent with the policies and standards of the Magnuson-Stevens Act, and that Federal management of ... [these fisheries] would serve no useful purpose or provide present or future benefits that justified the costs of Federal management.” *Id.* at 75570. NMFS and the North Pacific Council considered four alternatives for managing the fisheries, including whether the fisheries should be managed under an FMP, and preferred the State’s escapement goal management system. *Id.* at 75582–83. NMFS

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<sup>5</sup> For the East Area, Amendment 12 delegated management of the commercial and sport salmon fisheries to the State pursuant to 16 U.S.C. § 1856(a)(3)(B). 77 Fed. Reg. at 19607. Management of the East and West Areas require different considerations because unlike in the West Area, many salmon stocks caught in the East Area spawn in rivers thousands of miles away in Canada, Washington, and Oregon and are subject to the Pacific Salmon Treaty.

agreed with the North Pacific Council that under an FMP, even if management authority were delegated to the State, annual catch limits would have to be established for the fisheries “in advance through notice and comment rule making, which would result [in] harvests being restricted in years when returns were above forecast and harvests too high in years when returns were below forecast.” *Final Envtl. Assessment/Regulatory Impact Review for Amendment 12* (June 2012), at 31 (available at <https://goo.gl/s7w3Sp>). NMFS agreed that the State’s escapement goal management system is consistent with National Standard 1, 16 U.S.C. § 1851(a)(1), because the State’s system is more effective than an FMP for preventing overfishing of the salmon stocks in the three fisheries. 77 Fed. Reg. at 75582. NMFS also agreed that the State manages salmon stocks for optimum yield as required by National Standard 1. *Id.* at 75581.

NMFS further agreed that removing the fisheries from the FMP, and deferring to State management, is consistent with National Standard 2, 16 U.S.C. § 1851(a)(2), because the State manages fisheries using the best scientific information available; consistent with National Standard 3, *id.* § 1851(a)(3), because Amendment 12 allows the State to manage salmon stocks in Cook Inlet as a unit; and consistent with National Standard 7, *id.* § 1851(a)(7), because Amendment 12 minimizes costs and avoids unnecessary duplication. 77 Fed. Reg. at 75575. Although under Amendment 12 the State has jurisdiction to regulate only in-state registered vessels in the EEZ, NMFS agreed that the risk of unregulated fishing in the three fisheries is unlikely for several reasons, including the fisheries’ remoteness. *Id.* at 75576. “The

negligible level of risk [of fishing by out-of-state registered vessels] did not warrant retaining the net fishing areas in the FMP.” *Id.* at 75578. NMFS also stated that it may have insufficient funds to manage the fisheries through an FMP. *Id.* at 75574.

#### F. Proceedings below

Plaintiffs are two groups representing Cook Inlet commercial salmon fishermen that opposed NMFS’s proposed rule to implement Amendment 12. App. 13a. Plaintiffs argued that commercial harvests of sockeye salmon in Cook Inlet had declined since 1981, which plaintiffs attributed in part to the State managing those stocks to achieve escapement goals rather than catch limits. *Id.*

In 2013, plaintiffs filed suit under the APA challenging Amendment 12 and NMFS’s implementing regulations as contrary to the Magnuson-Stevens Act’s requirement that the North Pacific Council prepare an FMP “for each fishery under its authority that requires conservation and management,” 16 U.S.C. § 1852(h)(1); inconsistent with the National Standards; and arbitrary and capricious and contrary to the National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4332(2)(C). App. 14a.

The district court granted the State’s motion to intervene to defend NMFS’s rule, and entered summary judgment for defendants. The court applied *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984), App. 42a–43a, and at step one of *Chevron* held that the Act is ambiguous as to whether a Council must prepare an FMP for every fishery that requires conservation and management in any manner from any entity, App. 54a. Reading the Act as a harmonious whole, the

court held that by allowing States to regulate in-state registered fishing vessels in the EEZ in the absence of an FMP, "Congress contemplated situations in which there would be no FMP for a fishery and a state would need to regulate outside the delegation process." App. 48a. The court was also guided by National Standard 3, requiring that stocks of fish be managed as a unit where practicable, and National Standard 7, requiring that conservation and management measures minimize costs and avoid unnecessary duplication, in concluding that a Council has some discretion in determining whether to prepare an FMP for a particular fishery. App. 49a-50a. At step two of *Chevron*, the court held the Act did not expressly forbid NMFS's interpretation that Councils could defer to state management of a fishery by declining to include the fishery within an FMP, and that NMFS's interpretation was within permissible bounds and consistent with the National Standards. App. 55a-66a. The court also rejected plaintiffs' NEPA claim. App. 67a-80a. Plaintiffs appealed.

The Ninth Circuit reversed. The Ninth Circuit framed the issue in the case as "whether NMFS can exempt a fishery under its authority that requires conservation and management from an FMP because the agency is content with State management." App. 5a. The court stated that the "usual initial question is whether the fishery at issue even needs conservation and management," with the agency's answer reviewed under the arbitrary and capricious standard of review, but the court felt no need to "tarry over that issue here; the government concedes that the Cook Inlet fishery requires conservation and management." App. 15a-16a.

The Ninth Circuit next assessed NMFS's interpretation of the Magnuson-Stevens Act at step one of *Chevron*. App. 16a. The court began its analysis by looking to § 1852(h)(1), which provides that as one of its "functions" a Council "shall" prepare an FMP for a fishery that requires "conservation and management." *Id.* To accept NMFS's interpretation that a Council may exclude a fishery from an FMP and defer to State management, the court thought it would need to add the word "federal" before the phrase "conservation and management," which the court would not do. App. 16a–17a. Instead, the court interpreted § 1852(h)(1) as requiring an FMP for every fishery requiring conservation and management in any manner from any entity. App. 17a–18a. As for § 1856(a)(3)(A)(i), which allows States to regulate in-state registered vessels in the EEZ in the absence of an FMP, the court held that that express grant of state regulatory authority did not override the North Pacific Council's duty to prepare an FMP for Cook Inlet. *Id.* The court thought § 1856(a)(3)(A)(i) would be "a strange form of delegation of federal regulatory authority, as it does not allow states to regulate vessels registered in other states." *Id.* The court held that the "Act is clear: to delegate authority over a federal fishery to a state, NMFS must do so expressly in an FMP." *Id.* The court thought subsection 1856(a)(3)(A)(i) only "covers those waters where for some reason a plan is not in effect; it is not an invitation to a Council to shirk the statutory command that it 'shall' issue an FMP for each fishery within its jurisdiction requiring conservation and management." *Id.* Ruling against NMFS at step one of *Chevron*, the court declined to reach plaintiffs' other challenges to Amendment 12, including plaintiffs' claim that the

FMP was inconsistent with the National Standards. App. 23a. The court denied the State's petition for rehearing and rehearing en banc with a one-sentence order. App. 82a-83a.

### REASONS FOR GRANTING THE PETITION

The Ninth Circuit "has decided an important federal question that has not been, but should be, settled by this Court." Sup. Ct. Rule 10(c). When Alaska's salmon fisheries were last managed by the Federal Government using a strategy akin to catch limits, before statehood, salmon harvests fell to record lows. By contrast, under State management Alaska's salmon fisheries have flourished. The Ninth Circuit's decision returns these fisheries to that inferior federal management. Commercial salmon fishing is crucial to Alaska's economy.

The decision also deprives NMFS of a fishery management tool that it uses for other important fisheries in Alaska, where most domestic commercial fishing occurs. The Ninth Circuit's interpretation of the Magnuson-Stevens Act is also deeply flawed.

#### **I. The Petition Raises a Federal Question of Exceptional Importance to Alaska and All Who Benefit From Its Fisheries.**

The Ninth Circuit decided a federal question so important to the State—how Alaska's salmon fisheries will be managed—that it was the primary impetus for statehood. For more than fifty years, with the express, repeated, and continuous approval of the Federal Government, Alaska has managed these three salmon fisheries the same way it manages most salmon fisheries in state waters: to meet escapement goals. The Ninth Circuit held that the Magnuson-



Stevens Act forecloses that option and requires that the fisheries be managed under an FMP with annual catch limits. NMFS agrees that managing the fisheries with catch limits increases the risk of over- and under-harvesting salmon. Whether salmon are over- or under-harvested, the result is the same: fewer salmon in years to come.

Managing the three fisheries with annual catch limits harkens back to how the Federal Government managed Alaska's salmon fisheries before statehood, when fishing periods were inflexibly established months before the fishing season based on run expectations. By the 1950s Alaska's salmon harvests were at record lows under that inflexible federal management and the territory was declared a federal disaster area. A writ of certiorari is needed for Alaska to retain what it achieved at statehood: the authority to manage the three fisheries the way they should be managed to sustain and maximize yields, including Cook Inlet, "one of the nation's most productive salmon fisheries." App. 5a. This Court's intervention is especially needed because NMFS warned it may lack sufficient funds to manage the fisheries through an FMP; lack of funding for fishery management was also a problem before statehood. Alaska's salmon fisheries are critically important to the state's economy and the nation.

This case also warrants the Court's attention because Alaska and the other states within the Ninth Circuit are where most of the nation's commercial seafood is harvested, including almost all salmon. Salmon fisheries are usually best managed to meet escapement goals. For fisheries with populations that are more stable and easier to quantify, catch limits

work better. Yet, the fishery management experts at the North Pacific Council and NMFS have determined, for various reasons, that Alaska should also manage some non-salmon fisheries without an FMP, including the Tanner crab fishery in the Gulf of Alaska. *See* Tanner Crab off Alaska, 52 Fed. Reg. 17577-01 (May 11, 1987). The North Pacific Council and NMFS have also declined to adopt an FMP for lingcod in Alaska, deferring management of the entire EEZ for that fishery to the State. These fisheries require conservation and management in some manner from some entity, meaning the NMFS-approved state management of these fisheries is in jeopardy after the Ninth Circuit's decision.

This case may be the Court's one chance to correct the Ninth Circuit's misinterpretation of a forty-year-old statute. When NMFS defers to state jurisdiction over fisheries in Alaska, it is for more important fisheries than elsewhere in the nation. While NMFS and other Councils have deferred to state jurisdiction over fisheries outside of the Ninth Circuit, it seems they do so because little harvest occurs in those federal waters. *See, e.g.*, Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic, 77 Fed. Reg. 15916, 15918 (Mar. 16, 2012) (removing thirteen species of snapper/grouper from the FMP); Stone Crab Fishery of the Gulf of Mexico; Removal of Regulations, 76 Fed. Reg. 59064-01 (Sept. 23, 2011). NMFS may defer to state management more often in Alaska, and for more important fisheries, because of Alaska's expertise in fisheries management. Alaska's remoteness undoubtedly is also a factor. Under the Magnuson-Stevens Act, States have jurisdiction over only in-state registered fishing vessels in the absence of an FMP, but Alaska's unique geography makes it

unlikely that a vessel registered elsewhere would make the long trip to fish in one of Alaska's non-FMP fisheries. *See, e.g.*, 77 Fed. Reg. at 75576 (NMFS agreeing that unregulated salmon fishing in Cook Inlet under Amendment 12 was unlikely). For these reasons, it is unlikely that another court of appeals will have the opportunity to directly rule on the issue the Ninth Circuit decided.

Alaska's fisheries are among the best managed in the world and of critical importance to the state economy. The Court should grant the petition so that the State may continue to manage those fisheries in federal waters that the experts at the North Pacific Council and NMFS agree are best managed by the State under state law.

## **II. The Ninth Circuit's Interpretation of the Magnuson-Stevens Act is Incorrect.**

To find against NMFS at step one of *Chevron*, as the Ninth Circuit did, the court had to conclude that the Magnuson-Stevens Act "unambiguously forbid[s]" NMFS's interpretation. *Barnhart v. Walton*, 535 U.S. 212, 218 (2002). To the contrary, when read as a harmonious whole, the Act clearly allows NMFS to approve an FMP that is consistent with the National Standards, and excludes small areas that do not need the conservation and management measures that an FMP would provide. If the statute is ambiguous on that point, NMFS's interpretation should be upheld as well within "permissible bounds" at step two of *Chevron. Id.*

**A. The Magnuson-Stevens Act does not require a Council to prepare an FMP for a fishery that does not need one.**

NMFS has long interpreted 16 U.S.C. § 1852(h)(1) as requiring an FMP only for those fisheries that need the conservation and management measures that an FMP would provide. 50 C.F.R. § 600.305(c) (2016); 50 C.F.R. §§ 600.340(a)–(b) (1998). That interpretation is not only reasonable, it is manifestly correct. Under the Ninth Circuit’s contrary interpretation, Councils could be required to prepare FMPs for small areas of federal waters even if that would lead to overfishing, impose unnecessary costs and duplication, and force state and federal managers to manage stocks piecemeal instead of as units, all in violation of the National Standards. The Act does not require that counter-intuitive result.

Instead, 16 U.S.C. § 1852(h)(1) requires that as one of its “functions” Councils “shall” prepare FMPs “in accordance with the provisions of this chapter.” Far from “shirk[ing]” its duty, App. 19a, the North Pacific Council held five public meetings to consider four options for managing the three fisheries; among the options considered was whether to manage the fisheries under an FMP. 77 Fed. Reg. at 75582–83. The North Pacific Council made a reasoned decision to exclude the fisheries so that the FMP would be consistent with the National Standards and prevent overfishing. *Id.* The Ninth Circuit should have found that the Council performed its function. The easy answer to the Ninth Circuit’s hypothetical worrying that NMFS might approve an FMP “for only a single ounce of water in [the Alaska salmon] fishery,” App. 22a, is that approval of such an FMP would be al-

lowed only in the very unlikely event that the FMP prevented overfishing of salmon and complied with the other National Standards.

The Ninth Circuit's interpretation of § 1852(h)(1) renders § 1856(a)(3)(A)(i) virtually meaningless. That subsection explicitly preserves state jurisdiction over in-state registered vessels in a fishery in the absence of an FMP. Under the Ninth Circuit's interpretation, that subsection would allow States to regulate fishing vessels precisely when a fishery does not need any conservation and management in any manner from any entity. The Ninth Circuit's interpretation also means that the North Pacific Council will have to prepare FMPs for fisheries currently managed by Alaska under § 1856(a)(3)(C), rendering empty that grant of state jurisdiction.<sup>6</sup> Alaska's management authority under that subsection terminates upon the adoption and implementation of an FMP for a fishery. The Ninth Circuit violated this Court's command to "give effect, if possible, to every clause and word of a statute rather than to emasculate an entire section." *Bennett v. Spear*, 520 U.S. 154, 173 (1997) (internal quotation marks omitted).

The Ninth Circuit's interpretation of 16 U.S.C. § 1852(h)(1) also conflicts with its history, as the phrase "conservation and management" was added to the Act in 1983 to clarify that Councils are not required to prepare an FMP for every fishery within

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<sup>6</sup> An example of such a fishery is the Tanner crab fishery for the Gulf of Alaska, for which Alaska has jurisdiction over out-of-state registered fishing vessels under § 1856(a)(3)(C), and jurisdiction over in-state registered fishing vessels under § 1856(a)(3)(A)(i).

their authority. 1982 U.S.C.C.A.N. at 4367. Every ongoing commercial fishery requires conservation and management from some entity and in some manner—for example, measures requiring a permit, recordkeeping, or certain methods and means. If the phrase “conservation and management” had the unbounded meaning that the Ninth Circuit ascribed to it, then Councils would have to prepare an FMP for every fishery within their authority, contrary to the clear intent of Congress. The Ninth Circuit’s circular response to this point, App. 21a, fails to explain how a commercial fishery could operate without any conservation and management measures. For similar reasons, the Ninth Circuit erred to the extent it viewed as significant NMFS’s concession that the Cook Inlet salmon fishery requires conservation and management. App. 15a. All commercial fisheries do, but not all of them require the conservation and management measures of an FMP.

Read in context, the phrase “conservation and management” in § 1852(h)(1) must mean the conservation and management measures that an FMP would provide. Otherwise, Councils will be required to prepare FMPs for fisheries that do not need FMPs. NMFS’s interpretation of that phrase is consistent with its statutory definition. 16 U.S.C. § 1802(5). Under that definition, the requirement in § 1852(h)(1) that Councils prepare an FMP for a “fishery . . . that requires conservation and management” simply means Councils must prepare an FMP for a fishery that requires the “measures . . . required to . . . rebuild, restore, or maintain . . . any fishery resource”—in other words, the “measures” in an FMP. *Id.* § 1802(5). In a case that the Ninth Circuit thought turned on the meaning of “conservation and

their authority. 1982 U.S.C.C.A.N. at 4367. Every ongoing commercial fishery requires conservation and management from some entity and in some manner—for example, measures requiring a permit, recordkeeping, or certain methods and means. If the phrase “conservation and management” had the unbounded meaning that the Ninth Circuit ascribed to it, then Councils would have to prepare an FMP for every fishery within their authority, contrary to the clear intent of Congress. The Ninth Circuit’s circular response to this point, App. 21a, fails to explain how a commercial fishery could operate without any conservation and management measures. For similar reasons, the Ninth Circuit erred to the extent it viewed as significant NMFS’s concession that the Cook Inlet salmon fishery requires conservation and management. App. 15a. All commercial fisheries do, but not all of them require the conservation and management measures of an FMP.

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management,” the court never even acknowledged the statutory definition of that phrase.

While the Ninth Circuit thought the state jurisdiction preserved in 16 U.S.C. § 1856(a)(3)(A) to be “strange,” as it does not allow for regulation of out-of-state registered vessels, App. 18a, the Magnuson-Stevens Act as originally enacted preserved that same limited state jurisdiction over fishing vessels in the EEZ. 16 U.S.C. § 1856(a) (1976). The 1979 FMP for Alaska’s salmon fisheries deferred to that same limited state jurisdiction; following the Ninth Circuit’s reasoning, that first FMP must have been contrary to law. In any event, the experts at the North Pacific Council and NMFS agree that for the three fisheries this limited state jurisdiction is enough for Alaska to regulate the fisheries effectively. The Ninth Circuit should have deferred to that expert judgment regardless of how strange the court thought it was. *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971) (“The court is not empowered to substitute its judgment for that of the agency.”).<sup>7</sup>

The Ninth Circuit appeared to give much weight to Congress’s rejection of proposals to amend the Magnuson-Stevens Act. App. 8a–9a, 19a–20a. That was an error, as “courts have no authority to enforce a principle gleaned solely from legislative history

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<sup>7</sup> Although the Mister Big was briefly able to exploit this so-called jurisdictional loophole, the situation in Cook Inlet is different. An out-of-state registered salmon fishing vessel in Cook Inlet would be quickly noticed, for when salmon are present in Cook Inlet so are other fishing vessels and law enforcement. The Mister Big was able to fish unnoticed for a time because it was fishing when the scallop fishery was closed.



that has no statutory reference point.” *Shannon v. United States*, 512 U.S. 573, 584 (1994). Whatever the reasons for Congress’s rejection of amendments to the Magnuson-Stevens Act that would have *mandated* state management of fisheries in the EEZ, App. 8a–9a, the Act has always preserved state jurisdiction over in-state registered fishing vessels in the EEZ in the absence of an FMP. NMFS is allowed to defer to that explicit preservation of state jurisdiction, so long as NMFS does not act in an arbitrary or capricious manner. *Volpe*, 401 U.S. at 415–16.

The Ninth Circuit was also incorrect in finding that the 1996 amendments were intended to limit State authority over fisheries in the EEZ. App. 17a–18a. Legislative history states that the amended language was intended to clarify the law. Nothing in the history of the amendments, or in the amendments themselves, suggests that Congress intended to alter Alaska’s longstanding authority to manage the three fisheries. Though the 1996 amendments added additional avenues for States to exert jurisdiction over fishing vessels in the EEZ, the amendments explicitly preserved state jurisdiction over in-state registered vessels in the EEZ in the absence of conflicting federal law. Management of the three fisheries under an FMP, even if management authority is delegated to the State, is not an acceptable substitute for current State management because under an FMP the fisheries must be managed with annual catch limits. The Ninth Circuit incorrectly stated that the Magnuson-Stevens Act requires catch limits. App. 13a. It does not. Only FMPs must include catch limits, and not every fishery is managed under an FMP. 16 U.S.C. §§ 1856(a)(3)(A)(i) & (3)(C). The Ninth Circuit

erred by effectively reading these provisions out of the statute.

**B. The Ninth Circuit Erred By Not Limiting Its Review to NMFS's Approval of the FMP.**

The Ninth Circuit should not have even looked to 16 U.S.C. § 1852(h), which describes the "functions" of Councils, to assess whether NMFS acted contrary to law in approving Amendment 12 and its implementing regulations. The Magnuson-Stevens Act provides for judicial review of NMFS's final regulations implementing an FMP, *id.* § 1855(f), not of whether a Council performed one of its listed functions, such as recommending to NMFS an FMP for a fishery.

Because NMFS's implementing regulations must be consistent with an FMP, *id.* § 1854(b), a court probably can also review NMFS's determination that a recommended FMP is consistent with the Act, such as NMFS's determination that an FMP is consistent with the National Standards, *id.* § 1851(a) ("Any fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this subchapter shall be consistent with the following national standards for fishery conservation and management ...").

For example, the Ninth Circuit could have reviewed NMFS's determinations that: State conservation and management measures prevent overfishing while achieving optimum yield of Cook Inlet salmon stocks, consistent with National Standard 1, *id.* § 1851(a)(1); the FMP allows Cook Inlet salmon stocks to be managed as a unit, consistent with National Standard 3, *id.* § 1851(a)(3); and the FMP minimizes costs and avoids unnecessary duplication,

consistent with National Standard 7, *id.* § 1851(a)(7). The Ninth Circuit also could have reviewed NMFS's determination that the FMP included all of the mandatory provisions listed in § 1853(a). The Ninth Circuit opted instead to review solely whether the North Pacific Council, an advisory body, performed its function under § 1852(h)(1). App. 23a.

But the Magnuson-Stevens Act does not provide for judicial review of a Council's recommendation to NMFS of what fishery to include in an FMP, just as it does not provide for judicial review of whether a Council performed any of its other "functions." *See, e.g.*, 16 U.S.C. § 1852(h)(3) (providing that as one of its "functions," a Council "shall" "conduct public hearings"); *id.* § 1852(h)(4) (Council "shall" "submit to the Secretary such periodic reports as the Council deems appropriate"); *id.* § 1852(h)(7) (Council "shall" "develop . . . multi-year research priorities for fisheries"). In essence, the Ninth Circuit re-wrote § 1852(h)(1) to establish a substantive requirement of an FMP, rather than merely list one of the functions of Councils.

NMFS could have overruled the North Pacific Council's recommendation to exclude the three fisheries from the FMP. The Act provides that NMFS "may" adopt an FMP for a fishery requiring conservation and management if a Council fails to. 16 U.S.C. §§ 1854(c)(1)(A)-(B). By using the permissive "may," the Act signals that NMFS has discretion. *S. Ry. Co. v. Seaboard Allied Milling Corp.*, 442 U.S. 444, 455-56 (1979) (holding an agency decision unreviewable where the underlying statute, which provided that the agency "may" take certain actions and was silent on what factors should guide the agency's

decision, was “written in the language of permission and discretion”). The Act only requires that NMFS “shall” adopt an FMP if NMFS determines a fishery to be overfished and a Council fails to act (not the case with the three fisheries). 16 U.S.C. §§ 1854(e)(2)–(5). Ninth Circuit should have avoided the “nonsensical result” of finding NMFS to have violated the Act by approving of the North Pacific Council’s decision to leave the three fisheries without an FMP, when NMFS had discretion to make that same decision. *Paroline v. United States*, 134 S. Ct. 1710, 1729 (2014).<sup>8</sup>

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<sup>8</sup> The Ninth Circuit’s decision is in tension with a recent decision from the Court of Appeals for the D.C. Circuit. *Anglers Conservation Network v. Pritzker*, 809 F.3d 664 (D.C. Cir. 2016). In that case, environmental groups sued NMFS alleging that a Council had violated 16 U.S.C. § 1852(h)(1)’s command that the Council “shall” prepare an FMP for certain fish stocks, similar to the claim made by plaintiffs in this case. *Id.* at 668. In *Anglers*, the court of appeals affirmed the dismissal of the case on the grounds that Council’s decision to not include the stocks within an FMP was but a recommendation to NMFS, and therefore not a reviewable final agency action, and because the Magnuson-Stevens Act provides that NMFS “may” adopt an FMP if a Council fails to, indicating agency discretion. *Id.* at 669–72.

**CONCLUSION**

The Court should grant the petition.

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# EXHIBIT Y

# Issues Concerning Salmon Yields in Upper Cook Inlet, Alaska



United Cook Inlet Drift Association

September 2019



## **Abstract**

This report presents new biological and economic information and analysis concerning sockeye salmon stocks of Upper Cook Inlet. Other Upper Cook Inlet salmon populations are also referenced. In the last decade, the commercial drift fleet has seen a drastic reduction in both the annual and daily catch per unit of effort. The Kenai River sockeyes now have a pronounced August entry timing pattern. The mid-eye to mid-fork tail length, as measured by the offshore test fishery, drift fleet and the Kenai River Mile 19.5 counter all demonstrate a 5cm (2 inch) shorter sockeye at age 1.3 and 2.3. The corresponding weights are .5k (1 lb) less at the same ages. Excess spawning escapements and changing environmental conditions are discussed as forcing, perturbing and stochastic drivers of these smaller and later entry patterns. The economics associated with these decade-long trends are identified and discussed. Recommendations are put forward concerning revised escapement goals involved incorporating ecosystem approaches, multi-empirical and modeling-based approaches.



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## Errata

The majority of the data for this paper comes from ADFG. A portion is the annual management reports. In some selected figures, this will be an original presentation.

In the figures and tables, the 2019 data has been included. However, much of the 2019 data was unavailable at the time of this printing as the Cook Inlet commercial salmon season was still open. The sport fish harvests will not be available until the fall of 2020. Some of the 2018 sport fish harvest data is included, but only as estimates.

## **Glossary of Acronyms**

ADFG – Alaska Department of Fish & Game  
Area H – Federally designated fishing area encompassing Cook Inlet  
BEG – Biological Escapement Goal  
BOF – Board of Fisheries  
CIAA – Cook Inlet Aquaculture Association  
CPUE – Catch Per Unit of Effort  
DIDSON – Dual-frequency Identification SONar  
EGC – Escapement Goal Committee  
EZD – Euphotic Zone Depth in meters  
FMP – Fishery Management Plan  
GHL – Guideline Harvest Level  
KasR – Kasilof River  
KR – Kenai River  
KRLRS – Kenai River Late-Run Sockeye (July & August)  
lbs – Imperial Pounds, 16oz = 1 pound  
m – meters  
MEFL – Mid-Eye to Mid-Fork Tail Length in millimeters  
mg - milligrams  
mm – millimeters  
MSA – Magnuson Stevens Act  
MSY – Maximum Sustained Yield  
NGOs - Non-Governmental Organizations  
NMFS – National Marine Fisheries Association  
OTF – Offshore Test Fishery  
OY – Optimum Yield  
RM – River Mile  
R/S – Return per Spawner  
SAC – Salmon Advisory Committee  
UCI – Upper Cook Inlet  
Zoop Biomass – Zooplankton Population Biomass in mg/m<sup>3</sup>

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## I. Introduction

This paper presents historical, biological, yield and harvest data concerning the 23 major sockeye salmon populations that are natal to UCI, Alaska. Currently, there are federal, state, municipal and legally recognized subsistence stakeholders that are involved in salmon management, research and allocation discussions and decisions.

In addition, there are numerous NGOs and several user groups in the fishery that have historic and legal rights to harvest these salmon stocks of UCI. Indeed, the legal harvesting of these salmon stocks are complex due to the myriad of overlapping contradictory regulatory environments created by the various levels of government, including respective agencies. These governments and respective agencies often compete and push back on each other. In this myriad of competing, often contradictory legal and regulatory environment, there are two victims: the fish and the commercial fishing industry. Without exception, every level of government, elected and appointed agency officials, proffer a preferred action to salmon management issues in UCI.

The fishing industry is seeking to bring science, clarity and hopefully meaningful solutions so that these salmon, a national treasure of UCI, can, once again, achieve MSY/OY outcomes. This will fulfill the national mandate of MSY, incorporating OY as Congress has mandated in the MSA. It is difficult for the fishing industry to achieve the MSY/OY mandate of Congress when those involved have unique or conflicting personal or agency opinions.

This paper will deal with harvesting (food production) and biological (MSY/OY) issues.

There are a number of assumptions that are often made when managing salmon populations, not exhaustive, but rather obvious include:

1. Independent spawning events, year-to-year. Spawning events and subsequent progeny do interact with each other and prior years' fry.
2. Mathematical relationship between spawners, eggs, fry, smolt and returning adults.
3. Food – quantity, quality, temporal and spacial distribution and size is understandable and somewhat constant.
4. Parasites, disease, virus and bacterial effects are known and constant (no thresholds).
5. Predator-Prey complexes are understood and or constant.
6. Forcings and Perturbations: ecosystem stability has had no forcing functions or random perturbation
7. Stochastic: ecosystem stability may have stochastic changes that have no, or a minor, effect.

## II. History of Area H: Cook Inlet

To get an appreciation of the overlapping, regulatory mechanisms, reference is made to Figures 1 – 4.

Area H is the original Federal Commercial Fisheries Bureau map from the late 1940s. Area H designation precedes Alaska Statehood in 1959. Shortly after 1959, alpha designations were incorporated statewide. The Central Region was designated as Area H – Cook Inlet, Area E – Prince William Sound and Area K – Kodiak.

In Area H, there were federally designated districts, Northern and Central, see Figures 1 & 2. The State also adopted these federal districts. Additionally, each district has sub-districts and individual fishing areas. Some of the sub-districts were created by the Federal Government and some new fishing areas were added by the State of Alaska.

The State, to further complicate these area designations, created management plans that have new/revised/combined fishing areas, see Figure 3. Then, if the foregoing isn't enough, the State has created new fishing areas called "Corridors" and Sections, see Figure 4.

One of the points to be made is that over the last 140 years, area designations, revisions and new fishing areas have made it impossible to separate harvest, economic and biological data relative to the EEZ boundary. Since the 1880s, this EEZ boundary has been non-existent in the management of this fishery. However, the Set Net fishery has been relatively stable during this same 140 year history.

Figure 1. Area H: Cook Inlet

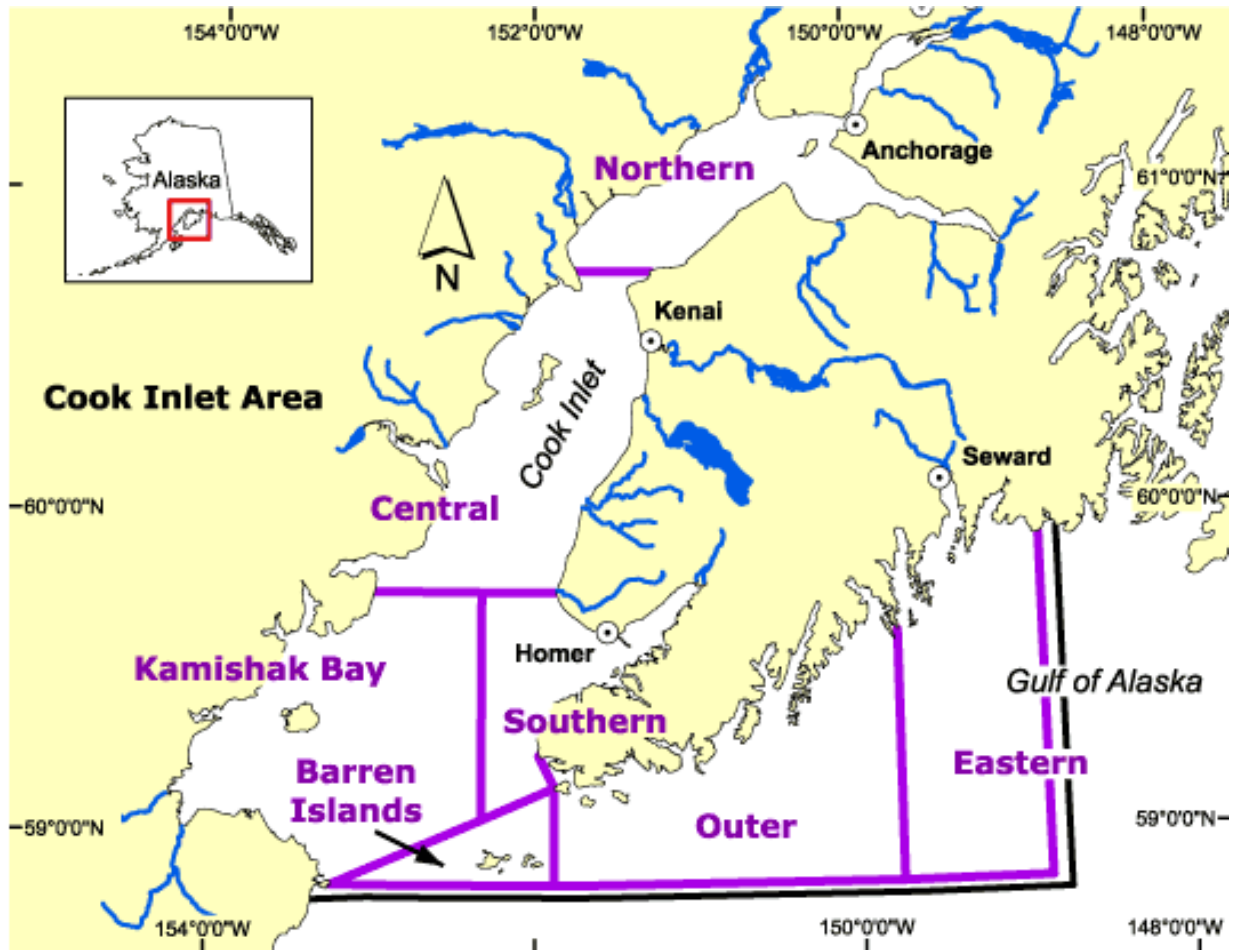
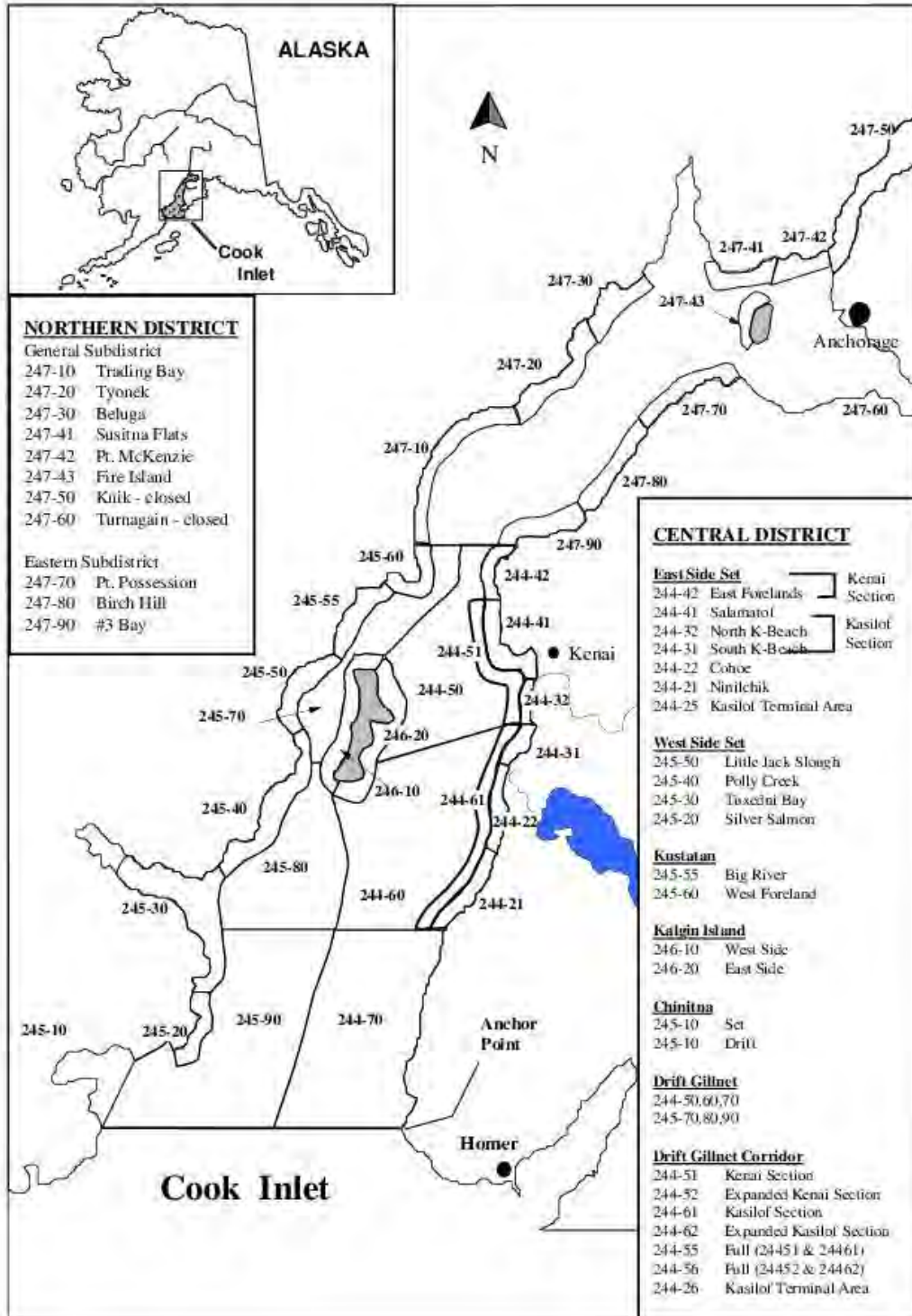


Figure 2. Central District Statistical Areas





**Figure 3. Drift Gillnet Area Waypoints**

	<u>Latitude</u>	<u>Longitude</u>
N Boundary – Boulder Pt	60°46.39'	
NW Kenai Section	60°40.35'	151°26.33'
SW Reg Kenai Section	60°27.10'	151°25.70'
SW Exp Kenai Section	60°27.10'	151°33.76'
Midpoint Reg Kasilof Section	60°12.75'	151°32.05'
SW Kasilof Section	60°04.02'	151°46.60'
Shell C Platform (approx.)	60°45.60'	151°30.40'
West Foreland (approx.)	60°42.75'	151°43.00'
East Foreland	60°43.20'	151°24.30'
Drift River Terminal	60°33.25'	152°08.00'
Harriet Point	60°23.70'	152°14.40'
Kalgin Buoy	60°04.70'	152°09.90'
NW AP/SW Exp Kasilof Section	60°04.02'	151°49.00'
SW Anchor Point Section	59°46.15'	152°15.80'
S Boundary – Anchor Pt Light	59°46.15'	151°52.06'

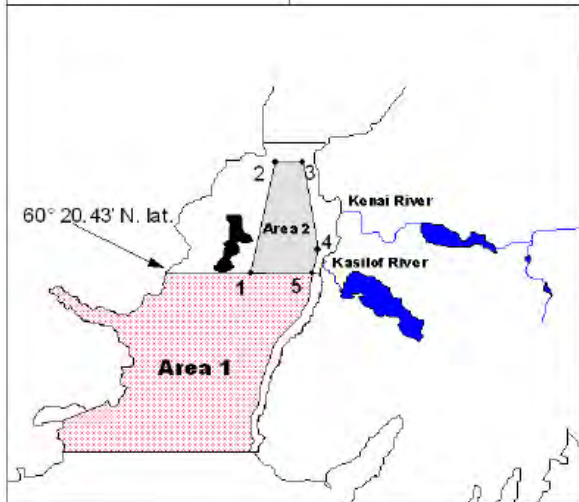
**UCIDA presents the accompanying graphics as a convenience to drift fishermen. UCIDA accepts no liability for any actions where an individual makes a judgment based upon information provided by these graphics and coordinates.**



*Cook Inlet, Alaska ~ 2019*

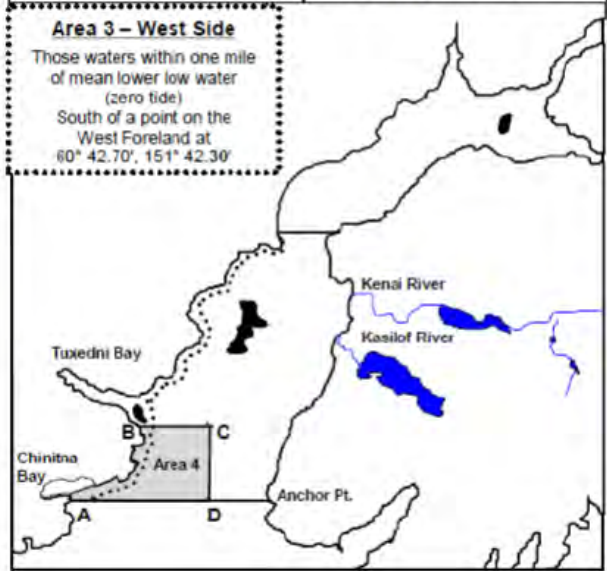
**Drift Gillnet Area 1 & Area 2 Descriptions**

AREA 2 DESCRIPTION	COORDINATES
1. Southwest Corner	60° 20.43' N. lat., 151° 54.83' W. long.
2. Northwest Corner	60° 41.08' N. lat., 151° 39.00' W. long.
3. Northeast Corner	60° 41.08' N. lat., 151° 24.00' W. long.
4. Blanchard Line Corridor Boundary	60° 27.10' N. lat., 151° 25.70' W. long.
5. Southeast Corner	60° 20.43' N. lat., 151° 28.55' W. long.

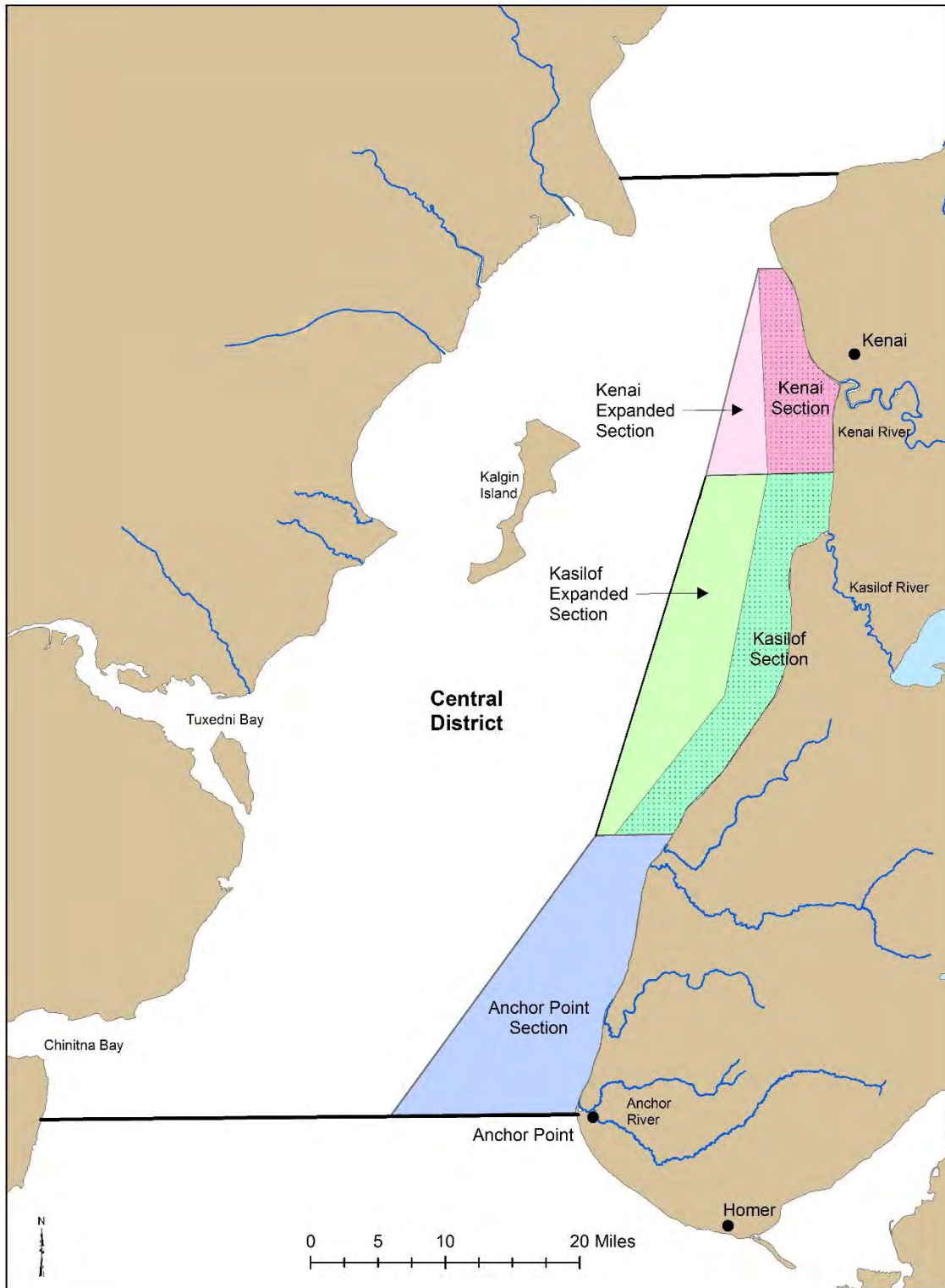


**Drift Gillnet Areas 3 & Area 4**

AREA 4 LOCATION	COORDINATES
A. SW Corner	A. 59° 46.15' N 153° 00.20' W
B. NW Corner	B. 60° 04.70' N 152° 34.74' W
C. NE Corner (Kalgin Buoy)	C. 60° 04.70' N 152° 09.90' W
D. SE Corner	D. 59° 46.15' N 152° 18.62' W



**Figure 4. Central District Drift Gillnet Sections**



### III. KRLRS and KasR Sockeye Salmon Brood Tables, 1968 – 2019

#### Table 1A-1C, Figure 1A-1B

##### 1. Brood Tables

Table 1A is one of many brood tables reported by ADFG. This particular brood table omits the fry abundance, weights, EZD, and Zoop Biomass. Table 1A does not subtract Hidden Lake enhanced spawners.

Table 1A: Explanation of Column Data, left to right:

A. YEAR OF THE SPAWNING EVENT, 1968-2019

B. SPAWNER ESTIMATES, not an actual fish count, only an index

C. AGE of returning adults 0.2 – 3.3, fourteen possible age combinations

The first number indicates the number of years in fresh water, the second indicates the number of years in saltwater. Lastly, there needs to be one (1) year added to arrive at the total age of the fish since being spawned and fertilized.

- **EXAMPLE:** An adult returning salmon designated as a 0.2 would be 0 years in freshwater and 2 years in saltwater, then add the year it was spawned and fertilized. The life sequence would be: spawned & fertilized in August 2016, emerge from gravel in May 2017 and immediately go to the ocean (smolt). Spend 2 years in the ocean, from May 2017 until July 2019, return as an adult to its natal stream and spawn in August 2019. Total age 3 years from spawned egg to spawning eggs. The 3 year life cycle is designated, for the purposes of this brood table, as a 0.2 adult return. To get the time, number of years from spawned to spawning, add one year to all the adult return age class designations.
- **EXAMPLE:** 1.2 is one year spawn, plus one year freshwater, plus two years in the ocean for a 4 year old sockeye.
- **EXAMPLE:** 2.2 is one year spawn, plus two years in freshwater, plus two years in the ocean for a 5 year old sockeye.
- **EXAMPLE:** 2.3 is one year spawn, plus two years in freshwater, plus three years in the ocean for a 6 year old sockeye.

D. RETURN is the additive sum of all the age classes that came back as adult sockeyes from that spawn or brood year.

E. THE RETURN PER SPAWNER is the number of adults returning from a particular spawning year. Expressed as a positive value, see 1968 – 8.3 returning adults per spawning adult. See Table 1A, year 1968.

- **EXAMPLE:** 1968: 115,545 spawners produced 960,169 returning adults. Divide 960,169 by 115,545 for a total of 8.3 returning sockeye adults per spawning adult.

- F. RUN is the total number of sockeye that returned in a calendar year. The run has multiple age classes from different brood, or spawn years.
- G. TOTAL HARVEST is the number of sockeye harvested in that calendar year, by all user groups.
- H. HARVEST RATE is the exploitation rates of the run for that year.
  - EXAMPLE: In 1975, the harvest rate was .62, or 62% of the run. The remaining .38, or 38% went on to spawn. Mean, 1975-2011, provides the reader and average number for the columns.
- I. MEAN 1975-2011 is the adult return by age class. Located at bottom of page
  - EXAMPLE: The 1.2 age class has contributed 10.6% of the annual returns.
  - EXAMPLE: The 1.3 age class has contributed 60.5% of the annual returns.

2. Observations from the KR Brood Table 1975-2018

- A. From 2010 thru 2019, the number of spawners has exceeded or been near one million. See Table 16

3. Table 1B. KRLRS Salmon Brood Table

Table 1B included the fall fry abundances, fall fry weight, EZD and Zoop Biomass.

Explanation of column data:

- A. FALL FRY ABUNDANCE – age 0. These values are the fall fry estimates arrived at thru conducting hydro-acoustic surveys and net sampling techniques. These age 0 fry are from the prior years’ spawning event.
- B. FALL FRY ABUNDANCE – age 1. The numeric values are the fall fry estimates.
- C. FALL FRY WEIGHTS – units are expressed in grams of body weight. Age 0 has the same age meaning as above. Table 1B.
- D. EZD in the euphotic zone depth recorded in meters using a 30cm black & white quadrant secchi disk.
- E. ZOOPLANKTON BIOMASS is the milligrams per cubic meter of water volume, expressed in mg/m<sup>3</sup>. This value is an average of numerous samples taken throughout Skilak Lake.
- F. ADULT RETURN – Return per spawner, run, total harvest and harvest rate. (0.2 thru 3.3 age classes have the same meaning as described in Table 1A descriptions.)

Discussion/Observation: In 1989, the largest number of spawners, 2,026,637 produced 24,601,413 age 0 and 387,673 age 1 fall fry. In 2011, 1,280,733 spawners produced 23,560,643 age 0 and 2,857,684 age 1 fall fry. There were 745,000 fewer spawners in 2011 as compared to 1989, yet the fry numbers are nearly the same. There were 745,000 sockeye lost to yield/harvest.

Brood year interactions. During the months of April, May and June, there are four brood years of fry competing for the same resources, food, space and escape cover in Skilak Lake.

Three different spawn years are in Skilak Lake during this April, May and June period. These fry are competing for every necessary resource. Both depredation and predation are occurring.

**\*\* Nearly all of the models currently being used do not include a variable or mix of variables identified for this brood year interaction. Skilak and Kenai Lakes as well as the KR are both unique in the brood year interactions.**

4. In Table 1A, the 35-year (1975-2010) yearly average return for the 1.3 age class is 2,292,896 sockeye (highlighted in yellow for the reader's reference). That is to say, over the last 35 years of various escapement/spawner counts, this sockeye population has, on average, returned 2,292,896 age 1.3 (5 year old) sockeyes.
5. In 2018, the age 1.3 sockeye return was 699,561. (Highlighted in yellow for reader's reference). This is to say, that in 2018, 699,561 age 1.3 sockeyes returned in comparison to 35-year average return of 2,292,896. The age 1.3 return of 699,561 is 30.5 % of the 35-year average of 2,292,896. In a less positive light, 1,593,355, or 70%, of the 1.3 age class were simply missing in 2018.
6. In 2018, the 2.3 age class, or 6 year old sockeye return was 69,055. The 35-year average return is 766,088 (highlighted in yellow for reader's ease). In 2018, 766,088 sockeyes were expected, however, 69,055 were determined to be in the return. There were 697,073, or 91%, of the 2.3 age class of sockeyes missing in the 2018 return.
7. In 2018, there were two significant age class failures: 1.3 and 2.3. Together, these two age class failures represent 2,300,000 sockeye salmon that failed to return, when compared to the 35-year historic averages.
8. In further examination of Table 1A, note the erratic age classes: 0.2, 0.2, 0.4, 3.1, 3.2, 2.4 and 3.3. These age classes potentially provide ecological plasticity and ecological diversity. In recent years of over one million spawners, these age classes have nearly disappeared in the KRLRS runs.
9. It is unknown how the above diminished age classes are distributed in the KR Watershed. It needs to be noted that some tributary waterways have had no, or very little, spawning activity for over a decade. The ecological roles, spacial or temporal distributions of these diminished age classes are not known. The point being, some discrete stocks may have already been extirpated from UCI.

10. Table 1C. Kasilof sockeye salmon brood table.

It is interesting to note that in this brood table, there are two age classes that are 34% and 32% of the runs, ages 1.4 and 1.3 respectively, while age 2.2 contributes 23% of the annual run. Collectively, these three age classes contribute 89% of the annual run. There are no missing sockeye age classes in the Kasilof River as is seen in the Kenai River.

Table 1A. Late-run Kenai sockeye salmon brood table. Note: Hidden enhanced was not subtracted to estimate spawners.

Brood Year	Adult Return																Return per Spawner		Total Harvest	Harvest Rate
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Return	Spawner				
1968	115,545	0	169,641	894	0	657,176	77,265	0	1,456	53,737	0	0	0	0	960,169	8.3				
1969	72,901	0	894	0	37,929	7,740	0	209,347	94,190	0	10,719	66,771	3,356	0	0	430,947	5.9			
1970	101,794	0	1,548	0	65,999	6,143	0	195,322	136,422	0	136,620	8,869	0	0	550,923	5.4				
1971	406,714	0	4,472	0	57,003	10,019	0	338,382	299,954	0	10,340	266,227	0	0	986,397	2.4				
1972	431,058	0	5,738	0	564,078	17,738	0	1,656,310	182,117	0	1,140	120,729	0	0	2,547,851	5.9				
1973	507,072	0	8,966	0	153,573	0	0	1,825,724	87,313	0	50,410	0	0	0	2,125,986	4.2				
1974	209,836	0	0	0	59,726	1,710	0	488,947	94,517	0	143,167	0	0	0	788,067	3.8				
1975	184,262	0	0	0	162,573	0	0	623,465	209,203	0	60,132	0	0	0	1,055,373	5.7	485,350	301,088		
1976	507,440	0	1,391	0	457,669	6,092	0	804,033	95,053	1,142	2,930	136,815	0	888	0	1,506,012	3.0	1,374,607	867,167	
1977	951,038	0	41,798	0	212,799	3,251	0	2,421,274	67,308	0	18,530	347,053	0	607	3,112,620	3.3	2,268,567	1,317,529		
1978	511,781	0	0	0	136,820	0	0	3,250,866	67,217	0	38,048	287,747	6,343	0	0	3,785,040	7.4	2,096,342	1,584,561	
1979	373,810	0	1,295	29,452	259,051	4,699	0	565,799	149,644	0	11,216	292,947	4,810	2,125	0	1,321,039	3.5	797,838	424,028	
1980	615,382	0	3,655	18,199	218,853	2,613	690	1,597,876	271,442	0	14,942	545,024	0	0	2,673,295	4.3	1,481,394	866,012		
1981	535,524	825	0	7,818	301,195	2,217	0	1,244,961	295,294	0	6,783	605,230	0	0	2,464,323	4.6	1,176,410	640,886		
1982	755,672	4,413	1,392	36,636	803,813	1,950	2,978	7,661,502	297,352	0	23,314	744,869	0	9,482	0	9,587,700	12.7	2,766,442	2,010,770	
1983	792,765	1,216	0	22,901	795,150	0	0	4,465,204	262,695	0	49,747	387,890	0	10,975	0	4,886,794	12.0	3,981,411	3,188,646	
1984	446,297	0	0	2,383	547,407	4,517	0	1,662,723	701,759	7,674	19,946	905,800	6,291	609	0	9,486,109	8.6	1,286,678	840,381	
1985	573,761	0	4,130	4,862	314,370	20,065	0	1,568,911	297,302	0	4,858	372,746	678	0	0	2,587,921	4.5	2,496,016	1,922,255	
1986	555,207	1,727	4,959	15,702	390,370	3,222	2,037	834,890	140,049	0	11,395	752,587	0	8,200	0	2,165,138	3.9	2,945,961	2,390,754	
1987	2,011,657	0	5,664	48,620	771,535	4,509	0	7,009,121	300,271	0	105,416	2,096,054	1,114	14,322	0	10,356,627	5.1	9,391,896	7,380,239	
1988	1,212,865	405	1,146	0	150,926	7,079	0	1,491,076	292,223	596	21,861	573,931	2,853	4,544	0	2,546,639	2.1	6,054,519	4,841,654	
1989	2,026,619	3,919	0	16,807	352,278	77,839	0	2,469,188	555,383	1,407	17,207	948,211	0	16,440	0	4,458,679	2.2	6,656,274	4,629,565	
1990	794,616	1,133	3,459	5,931	222,285	13,834	0	771,248	189,043	0	10,973	283,961	2,423	3,405	0	1,507,693	1.9	3,224,183	2,429,567	
1991	727,146	1,592	4,331	10,275	662,798	22,619	0	2,764,304	251,886	1,839	17,583	689,932	2,928	2,958	0	2,182,082	6.1	2,182,082	1,454,936	
1992	1,207,382	0	2,610	8,468	345,350	10,423	0	3,442,905	140,639	0	19,992	293,917	2,775	4,497	0	4,271,576	3.5	8,235,298	7,027,916	
1993	997,693	0	0	14,950	288,883	7,055	0	816,311	196,799	1,642	12,461	330,508	14,864	6,306	0	1,689,779	1.7	4,446,195	3,448,502	
1994	1,309,669	0	1,762	0	484,075	77,318	0	1,727,282	439,229	1,822	17,644	291,648	9,532	0	2,322	3,052,634	2.3	3,886,918	2,577,249	
1995	776,847	0	3,402	8,637	429,006	16,262	0	1,039,246	154,484	0	15,060	230,897	0	2,266	610	1,899,870	2.4	2,628,555	1,851,708	
1996	963,108	0	0	13,177	254,663	26,314	0	1,532,580	157,933	0	25,384	246,751	2,554	2,402	0	2,261,757	2.3	3,696,067	2,732,959	
1997	1,365,676	0	1,765	0	230,281	16,857	0	2,141,616	327,086	1,220	16,829	873,668	0	10,985	6,095	3,626,402	2.7	4,610,042	3,244,366	
1998	929,090	0	3,740	3,017	701,989	12,436	0	2,710,969	314,136	1,356	30,290	677,566	6,351	3,477	0	4,465,328	4.8	1,902,219	973,129	
1999	949,276	1,833	0	11,713	499,236	4,232	0	3,957,730	426,477	0	18,160	807,582	14,996	10,825	2,279	5,755,063	6.1	2,984,568	2,035,292	
2000	696,899	4,396	634	19,641	562,552	7,454	0	4,988,074	123,670	0	67,227	1,253,952	2,279	23,772	4,682	7,058,333	10.1	1,814,779	1,117,880	
2001	738,229	0	0	12,693	133,740	4,837	0	1,102,407	103,974	0	52,226	279,858	4,682	3,540	0	1,697,957	2.3	2,189,670	1,451,441	
2002	1,126,616	1,906	38	13,104	281,726	10,825	0	2,837,840	156,677	0	95,584	227,610	0	3,403	0	3,628,712	3.2	3,466,762	2,340,146	
2003	1,402,292	0	0	4,682	213,585	23,772	0	1,267,159	150,560	0	20,902	235,750	3,403	0	0	1,919,813	1.4	4,439,571	3,037,279	
2004	1,690,547	0	0	7,289	315,905	14,785	0	1,764,966	239,153	0	8,272	858,115	4,316	8,142	15,658	3,236,600	1.9	5,705,141	4,014,594	
2005	1,654,003	0	0	3,403	148,984	3,403	0	1,598,266	168,314	0	23,800	2,857,849	0	0	0	4,804,018	2.9	6,109,173	4,455,170	
2006	1,892,090	0	7,048	4,316	841,212	101,060	0	2,438,848	340,712	0	79,654	1,172,388	0	21,043	0	5,006,280	2.6	2,848,597	956,507	
2007	964,243	4,316	8,272	0	498,542	71,399	0	2,151,603	739,778	0	21,043	876,917	0	0	6,808	4,378,678	4.5	3,601,777	2,637,535	
2008	708,805	0	8,142	0	591,917	11,447	0	1,987,848	261,588	0	0	519,456	0	0	0	3,380,397	4.8	2,082,431	1,373,626	
2009	848,117	0	22,894	0	438,640	17,150	0	2,160,200	246,112	0	14,894	903,197	0	9,368	0	3,809,455	4.5	2,430,414	1,582,297	
2010	1,038,302	0	6,893	13,616	416,994	27,232	0	1,671,965	314,687	0	21,515	1,121,581	0	28,965	1,939	3,625,388	3.5	3,596,458	2,558,156	
2011	1,280,733	0	13,616	0	895,559	18,713	0	2,119,496	185,225	0	45,340	1,221,727	3,113	9,777	1,248	4,513,185	3.5	6,263,091	4,982,359	
2012	1,212,921	0	0	2,230	240,206	10,283	0	1,057,626	75,078	0	29,565	69,055	0	0	0	1,484,043		4,769,681	3,556,760	
2013	980,208	0	1,938	992	147,848	8,094	0	699,561	220,225	0						1,078,658		3,628,121	2,647,914	
2014	1,218,342	1,530	3,468	0	790,594	44,325													3,404,034	2,185,693
2015	1,400,047	1,050	2,598																3,819,016	2,418,969
2016	1,118,155																		3,711,842	2,593,688
2017	1,056,773																		2,595,720	1,538,947
2018	831,096																		1,867,998	1,036,902
Mean (1975-2010)	967,631	769	3,901	9,953	401,033	17,660	158	2,292,896	262,365	519	25,991	766,088	2,589	5,915	1,223	3,791,059	4.4	3,370,572	2,402,941	
Percentage of Return				11%				61%	7%			20%								

Values less than 1% not shown  
3.1 + 3.2 + 3.3 less than 1%  
Data Source: ADF&G

Table 1B. Late-run Kenai sockeye salmon brood table. Note: Hidden enhanced was not subtracted to estimate spawners.

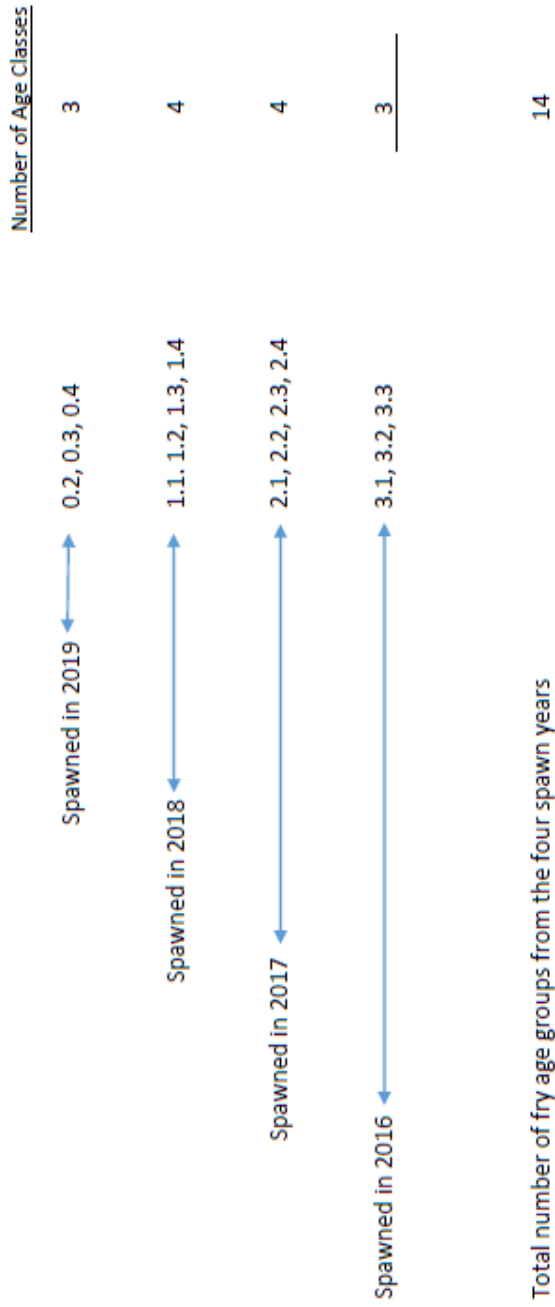
Brood Year	Fall Fry Abundance		Fall Fry Weight E/D Age 0 Age 1 (mm)	Zoop Biomass (mg/m2)	Smolt Abundance		Smolt Weight Age 1 Age 2	Adult Return													Return per Spawner	Total Harvest	Harvest Rate												
	Age 1	Age 2			Age 1	Age 2		0.2	1.1	1.2	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.1				12.1	13.1	14.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.1
1968	115,545	72,901	0	0	169,641	894	0	657,176	77,265	0	1,456	53,737	0	0	0	960,169	8.3	3,440,912	0.68																
1969	72,901	40,671	0	0	894	0	37,929	7,740	0	209,347	94,100	0	10,719	3,356	0	430,947	5.9	2,189,670	0.66																
1970	101,794	406,714	0	0	1,548	0	65,999	6,143	0	193,322	136,422	0	136,630	8,869	0	580,923	5.4	3,466,762	0.68																
1971	431,058	507,072	0	0	4,472	0	57,003	10,019	0	338,382	299,954	0	10,340	266,227	0	986,397	2.4	4,439,571	0.73																
1972	431,058	507,072	0	0	5,738	0	564,078	17,738	0	1,656,310	182,117	0	11,440	120,729	0	2,547,851	5.9	6,109,173	0.70																
1973	431,058	507,072	0	0	8,966	0	1,553,573	0	0	1,825,724	87,313	0	50,410	0	0	2,125,986	4.2	2,848,597	0.34																
1974	209,836	184,262	0	0	0	0	59,726	1,710	0	488,947	94,517	0	143,167	0	0	788,067	3.8	3,601,777	0.73																
1975	573,761	22,217,486	0	0	1,391	0	457,699	6,092	0	804,033	95,053	142	2,930	136,815	0	1,055,373	5.7	485,350	0.08																
1976	951,038	535,524	0	0	4,179	0	212,799	3,251	0	2,421,274	67,308	0	18,530	347,053	0	607	3,312,620	3.3	3,746,807	0.63															
1977	507,440	10,182,400	0	0	0	0	3,250,866	67,217	0	38,048	285,747	6,343	0	0	3,785,040	7.4	2,096,342	0.76																	
1978	573,761	2,536,556	0	0	1,295	0	29,452	259,051	4,699	0	565,799	149,644	0	11,216	292,947	4,810	1,215	0	9,486,794	12.0	3,981,411	0.80													
1979	373,810	83,810	0	0	3,655	0	18,199	218,833	2,613	690	1,597,876	271,442	0	14,942	545,024	0	2,673,295	4.3	1,481,394	0.53															
1980	615,382	825	0	0	7,818	0	301,195	2,217	0	1,244,961	295,294	0	6,783	605,230	0	2,464,323	4.6	1,176,410	0.48																
1981	535,524	4,413	0	0	1,392	0	36,636	803,813	1,950	2,978	7,661,502	297,352	0	23,314	744,869	0	9,482	0	9,837,700	12.7	2,766,442	0.73													
1982	755,672	1,216	0	0	2,383	0	795,150	0	0	4,465,204	262,695	0	49,747	3,878,906	0	10,975	0	9,486,794	12.0	3,981,411	0.80														
1983	792,765	446,297	0	0	0	0	2,383	547,407	4,517	0	1,662,723	701,759	7,674	19,946	905,800	6,291	609	0	3,859,109	8.6	1,286,678	0.65													
1984	446,297	2,536,556	0	0	4,130	0	4,862	314,370	20,065	0	1,596,911	297,302	0	4,858	372,746	6,798	0	2,587,921	4.5	2,496,016	0.75														
1985	573,761	22,217,486	0	1.7	8.9	0	560.6	0	4.5	0	1,133	3,459	5,931	22,285	13,834	0	771,248	189,043	0	10,973	283,961	2,423	3,405	0	1,507,693	1.9	3,224,183	2,429,567	0.70						
1986	555,207	94,089	0	0	8.3	0	615.4	0	4.8	5.6	1,992	4,331	10,275	662,798	22,619	2,764,304	251,886	1,839	17,583	693,932	2,928	2,958	3,030	4,436,074	6.1	1,828,082	1,454,916	0.67							
1987	2,011,657	37,071,211	11,066,228	0.9	2.8	12.4	586.0	0	3.0	4.3	2,610	8,468	345,330	10,423	0	3,442,905	140,639	0	19,992	209,917	2,775	4,497	0	4,271,576	3.5	8,235,298	7,027,916	0.85							
1988	1,212,865	13,987,502	782,393	1.2	4.0	10.5	693.2	0	3.6	7.2	0	14,950	288,883	7,055	0	816,311	196,799	1,642	12,461	330,508	14,864	6,306	0	1,689,779	1.7	4,446,195	3,448,502	0.78							
1989	2,026,619	24,601,413	387,673	1.3	4.7	5.5	495.4	0	4.5	4.9	1,762	0	484,075	77,318	0	1,727,822	439,229	1,822	17,644	291,648	9,532	0	2,322	3,052,654	2.3	3,886,918	2,577,249	0.66							
1990	794,616	1,126,616	0	0	1.7	7.0	6.3	368.8	3.9	9.0	1,133	3,459	5,931	22,285	13,834	0	771,248	189,043	0	10,973	283,961	2,423	3,405	0	1,507,693	1.9	3,224,183	2,429,567	0.70						
1991	727,146	9,540,536	1,732,650	1.8	4.5	9.2	557.9	0	4.8	5.6	1,992	4,331	10,275	662,798	22,619	2,764,304	251,886	1,839	17,583	693,932	2,928	2,958	3,030	4,436,074	6.1	1,828,082	1,454,916	0.67							
1992	1,207,382	35,687,389	1,280,854	1.2	3.6	7.0	761.9	0	3.0	4.3	2,610	8,468	345,330	10,423	0	3,442,905	140,639	0	19,992	209,917	2,775	4,497	0	4,271,576	3.5	8,235,298	7,027,916	0.85							
1993	997,693	11,159,398	473,111	1.4	5.7	5.6	428.2	0	3.6	7.2	0	14,950	288,883	7,055	0	816,311	196,799	1,642	12,461	330,508	14,864	6,306	0	1,689,779	1.7	4,446,195	3,448,502	0.78							
1994	1,309,669	8,812,995	368,644	1.7	4.0	8.0	507.0	0	4.5	4.9	1,762	0	484,075	77,318	0	1,727,822	439,229	1,822	17,644	291,648	9,532	0	2,322	3,052,654	2.3	3,886,918	2,577,249	0.66							
1995	776,847	5,882,452	239,582	1.6	3.1	3.5	378.6	0	4.2	3.7	3,402	8,637	429,066	16,262	0	1,039,246	154,484	0	15,600	230,897	2,266	610	1,899,780	2.4	2,628,555	1,851,708	0.70								
1996	963,608	25,316,385	2,459,746	0.9	1.7	5.5	342.5	0	2.1	1.7	0	13,177	254,663	26,314	0	1,532,580	157,933	0	25,384	246,751	2,554	2,402	0	2,261,757	2.7	3,696,067	2,732,959	0.74							
1997	1,365,676	21,193,560	629,011	0.7	4.0	4.2	273.4	0	1.5	4.9	1,765	0	230,281	16,887	0	1,414,616	327,086	1,220	16,829	873,668	10,985	6,095	0	3,626,402	2.7	4,610,042	3,244,366	0.70							
1998	929,090	8,330,506	472,469	1.3	4.1	7.4	421.7	0	3.3	5.0	3,740	3,017	701,989	12,436	0	2,710,969	314,136	1,356	30,290	677,566	6,351	3,477	0	4,465,328	4.8	1,922,219	973,129	0.51							
1999	949,276	19,950,396	520,673	1.2	3.2	6.7	489.8	0	3.0	3.8	1,833	0	1,171	499,236	4,232	0	3,957,730	426,477	0	18,160	807,382	14,956	10,825	2,279	5,755,063	6.1	2,984,568	2,035,292	0.68						
2000	696,899	22,509,586	3,342,145	1.0	2.6	8.6	386.3	0	2.4	2.9	4,396	634	19,641	562,552	7,454	0	4,988,074	123,670	0	67,227	1,253,952	2,279	23,772	4,682	7,058,333	10.1	1,814,779	1,117,880	0.62						
2001	738,229	8,748,692	434,724	1.0	2.8	9.0	535.5	0	2.4	3.2	0	12,693	133,740	4,837	0	1,102,407	103,974	0	52,226	279,858	4,682	5,540	0	1,697,957	2.3	2,189,670	1,451,441	0.66							
2002	1,126,616	12,750,428	711,475	1.3	2.1	4.1	344.9	0	3.3	2.3	1,906	38	13,104	281,726	10,825	0	2,837,840	156,677	0	95,584	227,610	0	3,403	0	3,628,712	3.2	3,466,762	2,340,146	0.68						
2003	1,402,292	27,574,335	106,971	0.6	1.5	5.9	407.1	0	1.1	1.8	0	4,682	213,585	23,772	0	1,267,159	130,360	0	20,902	235,750	3,403	0	0	1,919,813	1.4	4,439,571	3,037,279	0.68							
2004	1,690,547	41,936,000	7,859,788	0.5	2.0	6.0	489.9	0	1.3	1.9	0	7,289	315,585	14,785	0	1,764,966	239,153	0	8,272	888,115	4,316	8,142	15,658	3,236,600	1.9	5,705,141	4,014,594	0.70							
2005	1,684,003	29,563,865	8,945,317	0.7	1.8	6.6	592.6	0	1.3	4.5	0	3,403	148,984	3,403	0	1,598,266	168,314	0	23,800	2,857,849	0	0	0	4,804,018	2.9	6,109,173	4,455,170	0.73							
2006	1,892,090	9,138,282	186,842	0.9	4.0	5.4	563.9	0	3.0	5.0	7,048	4,316	841,212	101,060	0	2,438,848	340,712	0	79,654	1,172,388	21,043	0	5,006,280	2.6	2,848,597	956,507	0.34								
2007	964,243	20,154,463	688,401	1.3	4.8	10.9	884.7	0	2.7	6.0	4,316	8,272	0	498,542	71,399	0	2,151,603	739,778	0	21,043	876,917	0	0	6,808	4,376,678	4.5	3,601,777	2,637,535	0.73						
2008	988,817	17,778,081	460,689	1.6	3.4	9.4	987.4	0	3.1	4.1	814.2	0	591,917	11,447	0	1,987,848	261,388	0	0	519,456	0	0	0	3,380,397	4.8	2,082,451	1,373,626	0.66							



**Table 1C. Kaslof sockeye salmon brood table.**

Year	Spawners				Smolt Weight (g)										Return per Spawner		Total Harvest	Harvest Rate					
	Age 1	Age 2	Total	Age 2	0	1	0	1	0	1	2	0	1	2	3	1			2	3	Return	Spawner	
1968	90,958	.	.	.	0	0	231	0	86,418	115	0	42,653	14,079	0	2,588	0	0	0	0	145,853	1.6		
1969	46,964	.	.	.	0	0	0	12,833	204	0	85,255	6,389	0	5,484	0	522	0	0	10,919	2.4			
1970	38,797	.	.	.	0	0	0	38,507	299	0	8,744	69,392	0	51,297	0	0	0	0	168,239	4.3			
1971	91,887	.	.	.	0	0	0	36,811	268	0	107,438	101,308	0	49,258	0	0	0	0	295,083	3.2			
1972	115,486	.	.	.	49	494	0	115,995	0	103,393	114,377	0	38,332	0	0	0	0	0	372,639	3.2			
1973	40,880	.	.	.	0	473	0	119,001	2,433	0	176,558	38,748	0	4,521	0	0	0	0	341,734	8.4			
1974	71,540	.	.	.	0	2,753	0	206,299	0	80,966	34,636	0	1,350	16,890	0	0	0	0	342,896	4.8			
1975	48,884	.	.	.	440	1,801	0	246,019	0	368,132	33,934	0	41,369	0	0	0	0	0	691,693	4.9			
1976	142,058	.	.	.	0	4,087	0	149,225	0	358,492	51,558	0	46,809	0	0	0	0	0	610,171	3.9			
1977	158,410	.	.	.	0	0	0	172,123	465	0	364,997	104,687	0	53,408	0	0	0	0	695,739	5.8			
1978	119,165	401,000	.	.	2,465	0	407,690	0	204,991	112,060	0	2,937	52,479	0	1,199	0	0	0	783,821	5.0			
1979	155,527	1,865,000	1,010,000	2,875,000	2,8	4,8	0	264,207	577	0	485,118	258,171	0	3,504	71,144	0	0	0	1,082,721	5.7			
1980	188,314	1,440,000	1,328,000	5,468,000	2,9	5,0	0	854,061	1,742	0	679,270	220,031	0	95,613	236	2,489	0	0	1,853,442	7.1			
1981	262,271	6,817,000	2,869,000	9,686,000	2,9	5,2	0	2,187	529,984	267	345,805	266,602	0	1,718	141,028	0	0	0	1,287,592	7.0			
1982	184,204	11,390,000	4,001,000	15,391,000	3,3	4,3	0	748	0	709	255,882	382	0	244	65,366	0	0	0	1,008,308	4.7			
1983	215,730	12,580,000	2,223,000	14,803,000	2,6	4,6	0	143	0	596	101,750	129	0	133,572	123,311	0	0	0	766,694	3.2			
1984	238,413	5,268,000	3,540,000	8,808,000	2,6	3,4	0	656	775	133,031	162	0	330,225	248,546	0	0	0	1,743,87	3.5				
1985	512,827	1,074,000	2,549,000	3,623,000	2,2	3,6	0	0	0	0	139,802	738	0	133,336	0	0	0	0	887,782	3.5			
1986	283,054	2,056,000	3,009,000	5,065,000	2,5	4,1	0	0	0	0	189,085	145,680	0	113,166	0	0	0	0	665,176	3.3			
1987	256,707	3,109,000	3,521,000	6,630,000	2,7	4,4	0	0	159,892	738	0	197,694	173,302	0	0	0	0	0	1,058,045	3.3			
1988	204,336	3,961,000	2,320,000	6,281,000	2,6	4,0	0	0	0	0	189,085	145,680	0	113,166	0	0	0	0	994,511	70.9			
1989	164,952	2,353,000	1,973,000	4,326,000	2,6	5,3	0	0	0	0	63,863	590	0	0	0	0	0	0	512,385	3.1			
1990	147,663	2,038,000	1,833,000	3,891,000	4,2	4,2	0	567	0	147,703	0	110,369	174,950	0	68,223	0	0	0	501,812	3.4			
1991	233,646	7,189,000	1,717,000	8,906,000	2,6	4,9	0	0	222,798	0	414,977	205,588	0	102,874	0	0	0	0	946,237	4.0			
1992	188,819	7,174,000	2,342,000	9,516,000	2,8	4,4	0	386	0	185,940	0	453,802	122,402	0	1,496	51,892	0	0	815,919	4.3			
1993	151,801	4,593,000	1,041,000	5,634,000	2,8	4,7	0	0	145,659	0	155,518	125,775	0	1,801	92,168	441	0	0	521,361	3.4			
1994	218,826	3,924,000	1,617,000	5,541,000	3,2	5,2	0	0	195,201	1,883	0	297,531	196,873	0	74,041	0	0	0	765,529	3.5			
1995	202,428	2,971,000	942,000	3,913,000	3,9	5,4	682	388	0	237,182	373	0	190,926	56,162	0	1,141	42,235	1,019	491	530,599	2.6		
1996	264,511	3,654,000	1,026,000	4,680,000	3,8	5,8	0	0	208,276	1,202	0	377,605	109,373	0	1,958	53,153	0	0	751,566	2.8			
1997	263,780	3,474,000	804,000	4,278,000	3,9	5,0	0	403	0	217,593	707	0	279,338	118,996	0	0	0	0	682,580	2.6			
1998	259,045	3,496,000	2,025,000	5,521,000	3,2	5,1	0	1,386	0	206,816	4,941	0	264,189	248,417	0	1,194	65,365	0	0	792,308	3.1		
1999	312,481	3,217,000	2,121,000	5,338,000	3,3	5,2	0	1,542	0	279,767	1,343	0	224,666	511,584	0	0	0	0	1,158,888	3.7			
2000	263,631	1,379,000	3,328,000	4,707,000	3,7	7,2	0	2,972	0	614,279	1,272	0	468,763	191,544	0	0	0	0	1,388,432	5.3			
2001	318,735	9,572,000	2,245,760	11,817,760	4,8	6,6	966	1,287	0	420,057	1,918	0	573,939	515,285	0	0	0	0	1,627,669	5.1			
2002	235,732	4,127,860	1,010,152	5,138,012	4,3	6,4	0	4,747	0	663,235	7,708	0	292,890	222,994	0	0	0	0	1,250,022	5.3			
2003	353,526	10,213,764	2,559,924	10,469,688	3,9	7,4	0	10,152	0	517,851	1,852	0	603,710	282,320	0	1,989	142,431	0	0	1,560,304	4.4		
2004	523,653	2,587,676	710,558	3,298,234	4,5	5,9	0	7,406	0	622,458	2,836	0	501,436	298,674	0	58,286	0	0	1,491,097	2.8			
2005	360,065	3,029,221	1,137,780	4,167,001	3,5	7,1	0	5,672	0	128,287	24,088	0	259,738	255,738	0	0	0	0	878,678	2.4			
2006	389,645	4,280,220	1,517,880	5,798,100	3,9	6,8	0	8,066	0	226,513	12,034	0	249,075	207,535	0	0	0	0	744,647	1.9			
2007	365,184	2,096,120	240,000	2,336,120	4,7	9,0	1,719	8,596	0	110,448	21,782	0	66,847	237,982	0	37,013	0	0	484,387	1.3			
2008	327,018	1,760,000	.	.	5,0	12,0	0	11,741	0	215,278	28,080	0	268,221	318,776	0	31,544	0	0	873,640	2.7			
2009	326,283	2,488,632	.	.	5,9	12,3	0	42,815	0	346,060	11,636	0	324,152	227,315	0	83,653	0	0	1,035,630	3.2			
2010	295,265	5,288,344	3,047,410	.	5,8	9,6	1,906	19,460	0	467,313	29,448	0	409,452	415,209	0	720	32,518	639	929	1,377,594	4.7		
2011	245,721	4,039,590	.	.	5,4	.	4,191	18,970	0	246,611	12,219	0	97,688	188,641	0	954	117,098	0	0	686,373	2.8		
2012	374,523	4,522,960	.	.	7,6	.	2,232	5,522	0	143,497	9,406	0	152,743	191,458	0	0	4,579	0	128	0	509,565	1.4	
2013	489,654	5,309,562	.	.	5,2	.	0	7,664	0	284,613	32,073	0	73,061	242,906	0	0	0	0	1,003,071	513.417	0.51		
2014	440,192	901,464	.	.	6,6	.	0	22,034	0	368,806	9,001	0	0	0	0	0	0	0	1,102,934	662.742	0.60		
2015	470,677	2,854,638	1,326,426	.	4,6	11.4	.	0	4,649	.	.	.	.	.	.	.	.	.	1,174,899	704.222	0.60		
2016	239,981	3,080,305	.	.	5,9	.	.	.	.	.	.	.	.	.	.	.	.	.	480,774	240.793	0.50		
2017	358,724	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	801,902	443.178	0.55		
2018	388,009	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	703,002	314.993	0.45		
Mean (1968-2018)	247,855	4,134,409	1,510,353	5,777,846	3,7	5,8	254	3,780	31	253,870	3,959	0	272,835	182,976	0	528	73,771	87	128	0	792,127	3.9	
Percentage of Return									32%				34%	23%			9%						
Values less than 1% not shown																							
Genetic estimates of stock-specific harvests.																							
Preliminary age composition catch allocation model estimates of stock-specific harvests.																							
1968-2012 average was used as an estimate in order to complete 2012 broody year for the EG analysis in 2019																							
Data Source:																							ADP&G

**Figure 5A. KRLRS Smolting in May, June and July 2020**



The Age 1.3, 2.3 and 1.2 comprise 92% of the Kenai River Sockeye Returns

#### IV. UCI Drift Gillnet Sockeye Salmon Annual CPUE, 1999-2019

##### Figure 6

Figure 6 displays the annual CPUE for the entire UCI Drift Fleet by year from 1999-2019. This CPUE includes all districts, all sub-districts, all areas and all sections. One drift gillnet vessel is one 'Unit of Effort'. The mean of the annual average CPUE figure is 3,239 sockeye salmon. This does not include any kings, chums, cohos or pinks harvested in any single year.

It is readily observable that since the 6,944 CPUE in 2011, there has been a steady decline to where in 2018, the UCI Drift Fleet's CPUE was **900 sockeye per vessel for the entire salmon season**. The UCI drift gillnet season starts the third Monday in June or June 19<sup>th</sup>, whichever is later. The vast majority of the drift area closes August 15<sup>th</sup>. A small portion of the drift area, basically confined to within 1 mile of the west shoreline, closes by emergency order, usually in October.

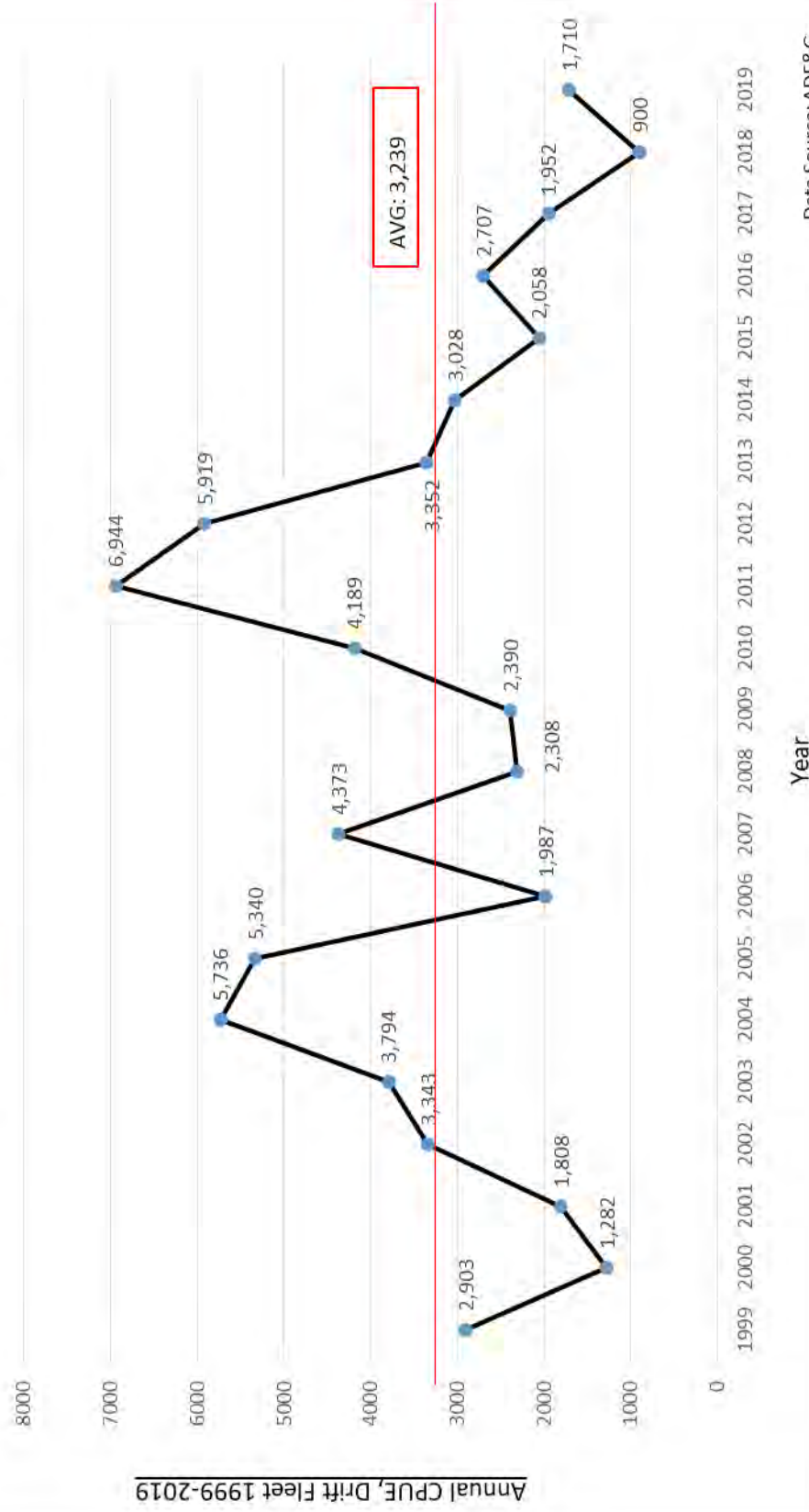
In 2019, the annual CPUE for the UCI drift fleet was 1,710 sockeye salmon, all 23 major stocks included.

The UCI Drift Fleet harvest CPUE of 1,710 in 2019 was below the average CPUE of 3,239, which is economically unstable.

With an annual sockeye CPUE of less than 3,239, the drift fleet is below marginal costs of operation. The costs of securing a vessel, maintenance, insurance, fuel, oil, nets, deckhands and permit purchase or lease, are about equal to the revenue generated by the harvest and sale of approximately 3,000 sockeye salmon.

For the major processors, hiring staff, trucks, forklifts, scale systems, totes, ice machines and permits, \$1.5 to \$2.5 million is a marginal start-up cost for the season.

Figure 6. **Annual Sockeye CPUE, UCI Drift Gillnet, 1999-2019**



Data Source: ADF&G

## **V. Highest Daily CPUE, UCI Drift Gillnet Sockeye Salmon District Wide and Area 1, 2010-2019**

Figure 7 provides the highest daily, regular, 12-hour fishing period CPUE catches by the UCI Drift Fleet, District Wide or Area 1.

Beginning in 2010, the highest, single day, 12-hour fishing period CPUE were as follows:

- 1,328 on July 12, 2010;
- 1,687 on July 14, 2011;
- 1,399 on July 19, 2012; and
- 929 on July 15, 2013.

In 2012, the UCI Set Net fishery was restricted or closed due to the low return of Chinook salmon to the KR.

Beginning in 2014, the highest, single day, 12-hour CPUE were as follows:

- 556 on July 17, 2014;
- 276 on July 20, 2015;
- 355 on July 18, 2016;
- 471 on July 13, 2017;
- 323 on July 12, 2018 and
- 331 on July 18, 2019.

One drift gillnet vessel is equal to one unit of effort. It should be noted that the highest, single 12-hour CPUE was 1,687 in 2011, while a CPUE of just 323 occurred in 2018. That is a reduction of 1,364 sockeyes harvested per drift vessel in a 12-hour fishing period. Economically, this reduced CPUE represents over \$15,000 per vessel in just this single best day CPUE comparison.

Figure 7. Drift Gillnet District Wide/Area 1 Peak Sockeye CPUE, 2010-2019



## **VI. Sockeye Salmon Run Timing to the KR Mouth, 2010 – 2018**

### **Figures 8A – 8E**

There are three figures, 8A, 8B and 8C, which display the late-run sockeye salmon entry patterns, sonar counts and sockeye movements into the KR. Information in each figure is the result of applying appropriate shifts to sonar counts and sockeye movements in the KR.

Figure 8A displays the run timing for the years 2010-2013 into the KR. It is readily apparent that in the 2010-2013 timeframe, there were large, daily entry patterns of 250,000-300,000 between July 14 and July 18.

Figure 8B displays the run timing for the years 2014-2019 into the KR. It is readily apparent that there are no single-day, large sockeye salmon entry patterns into the KR. There is only one 90,000-plus day entry into the KR.

Figure 8C displays the daily entry patterns into the KR for the entire 2010-2019 time frame. Even the casual observer can see that the daily sockeye entry patterns have changed. Also note the later entry patterns into the end of August in the later years, 2014-2019.

Figures 8D & 8E display the total seasonal KR sonar passage percentages and numbers for sockeye salmon. Figures 8D & 8E also display the August component in percentages and numbers, as well as the last day the counter was operating. It is rather obvious that there is a trend toward increasing percentages and numbers of sockeye are entering the KR in August.

In the 1980s, an average of 7% of the KRLRS entered the river in August. In the last five years, 2014-2019, 46% of the sockeye entered the KR in August. While not a direct year by year analysis, the 2014-2019 time period represents over a six-fold, or 600%, increase in the August entry pattern when compared to the early 1980s. The reasons and consequences of this 46% August component are real and have socio-economic-biological consequences for the entire Kenai, Alaska and national economies.

Figure 8A. Sockeye Salmon Run Timing to the Kenai River Mouth 2010-2013

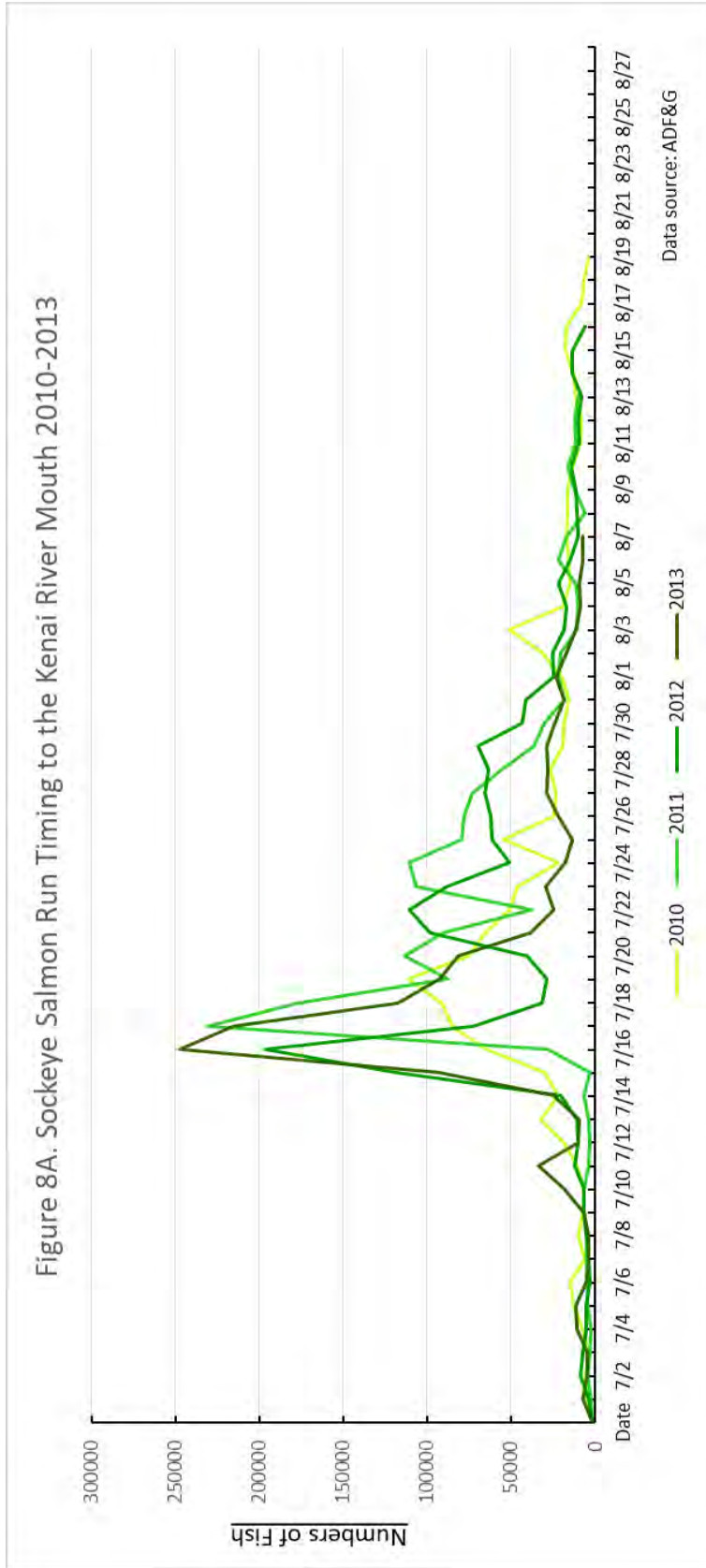




Figure 8B. Sockeye Salmon Run Timing to the Kenai River Mouth 2014-2019

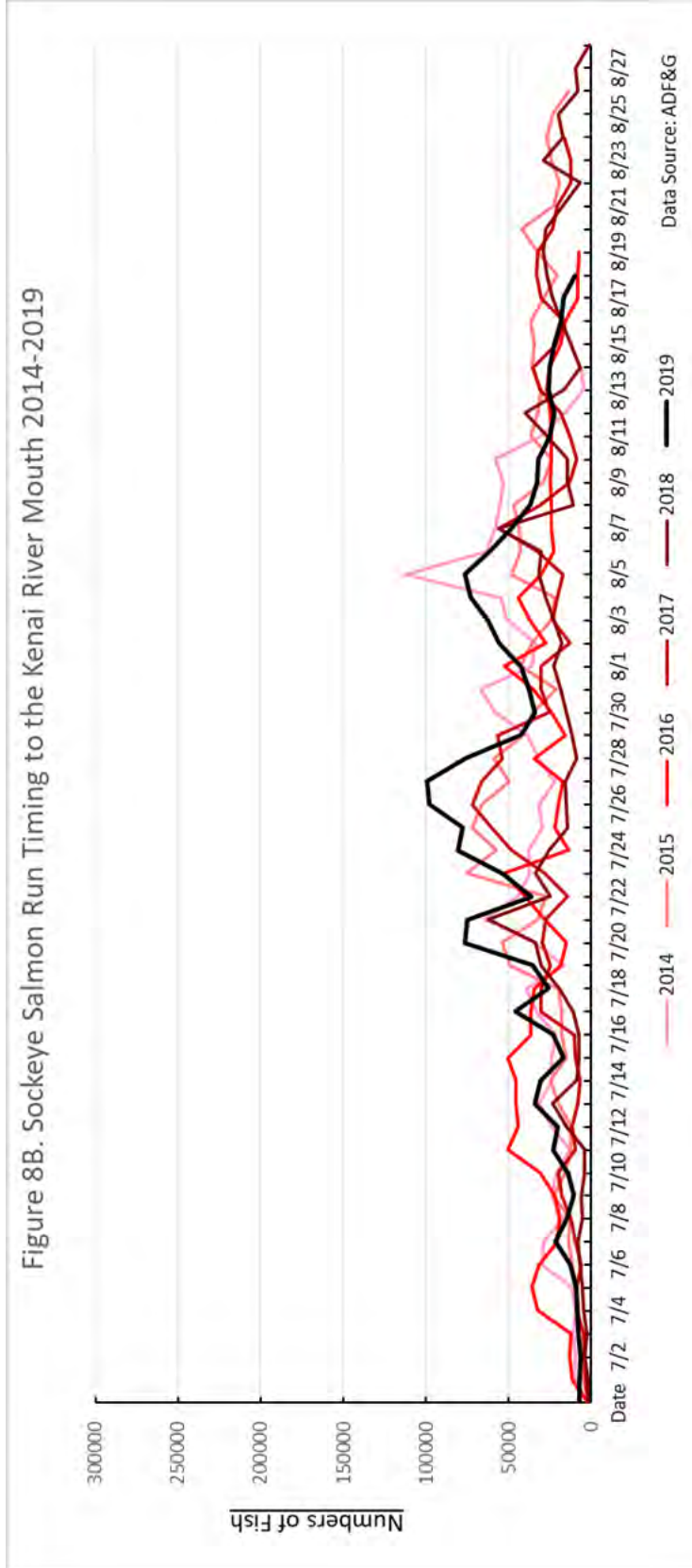


Figure 8C. Sockeye Salmon Run Timing to the Kenai River Mouth 2010-2019

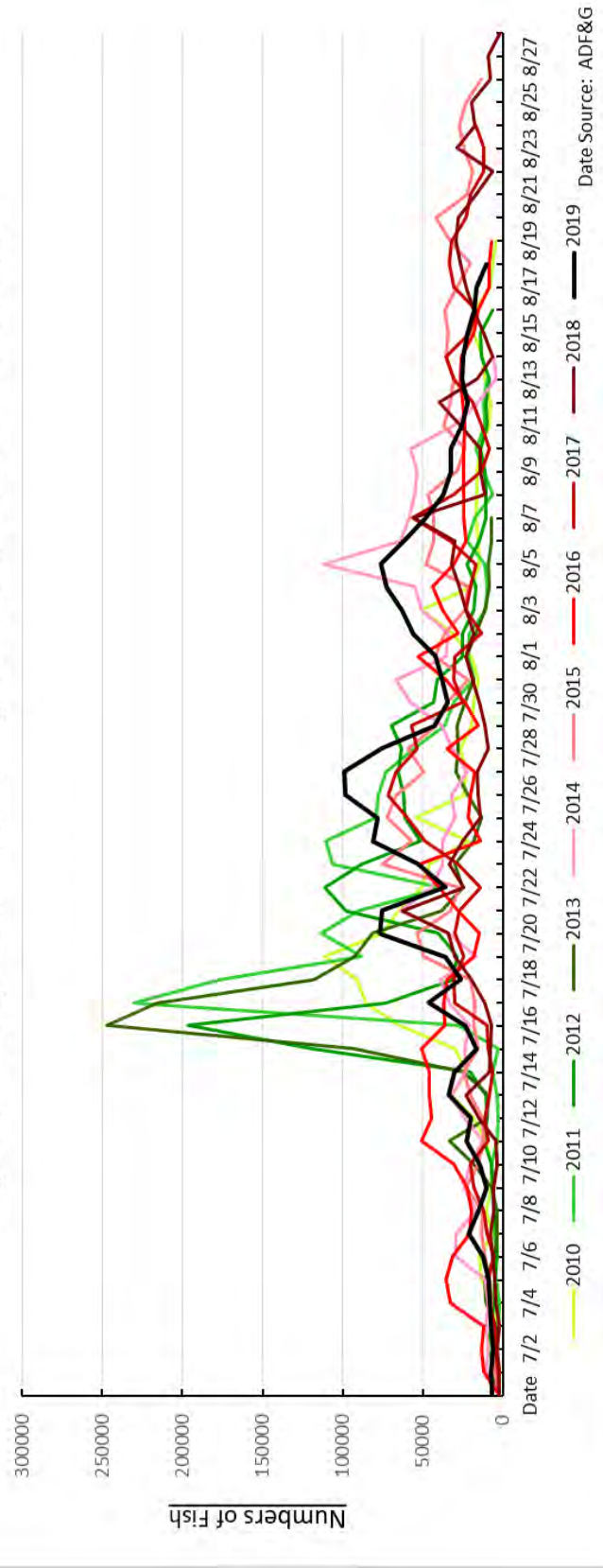
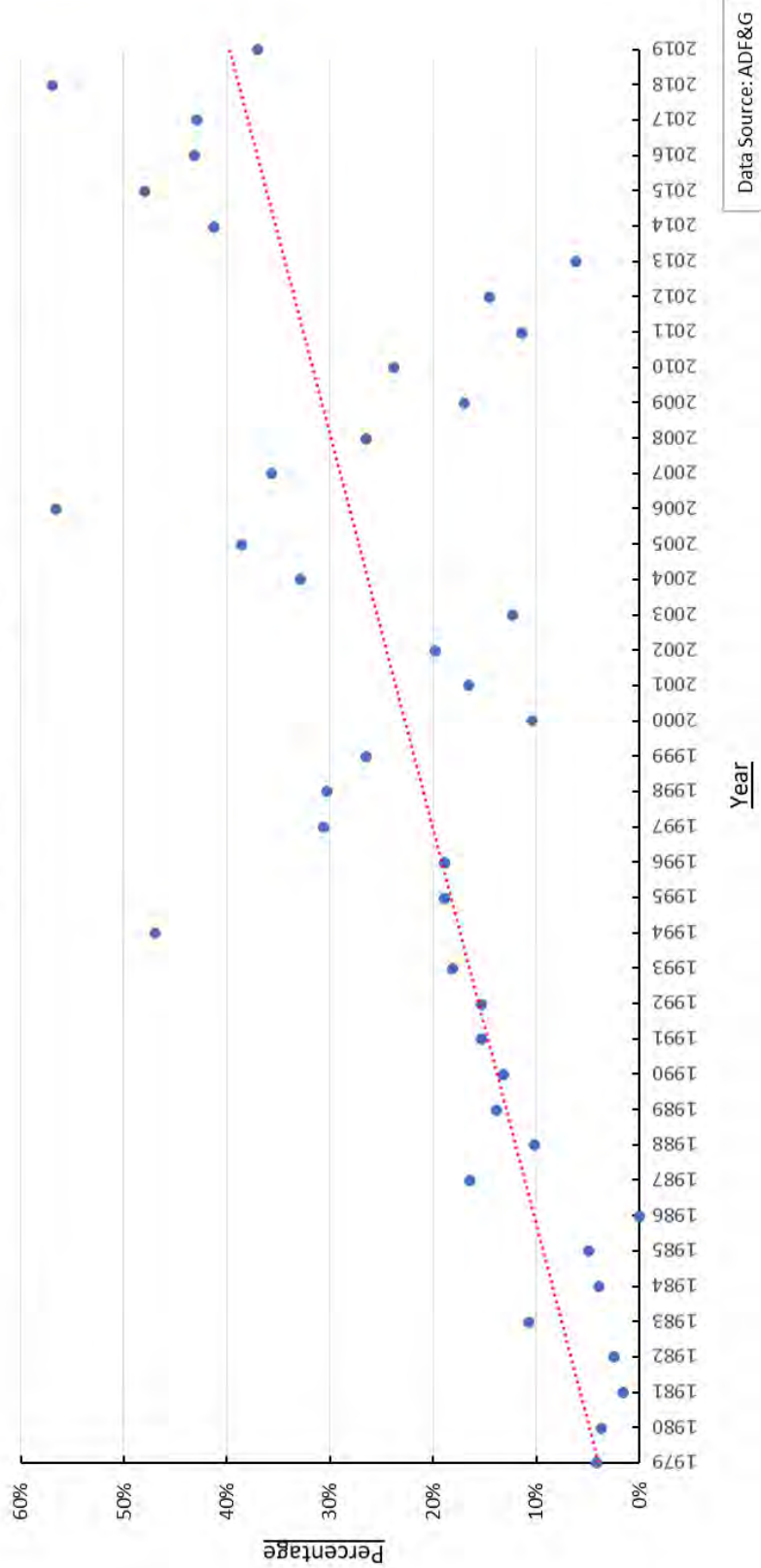
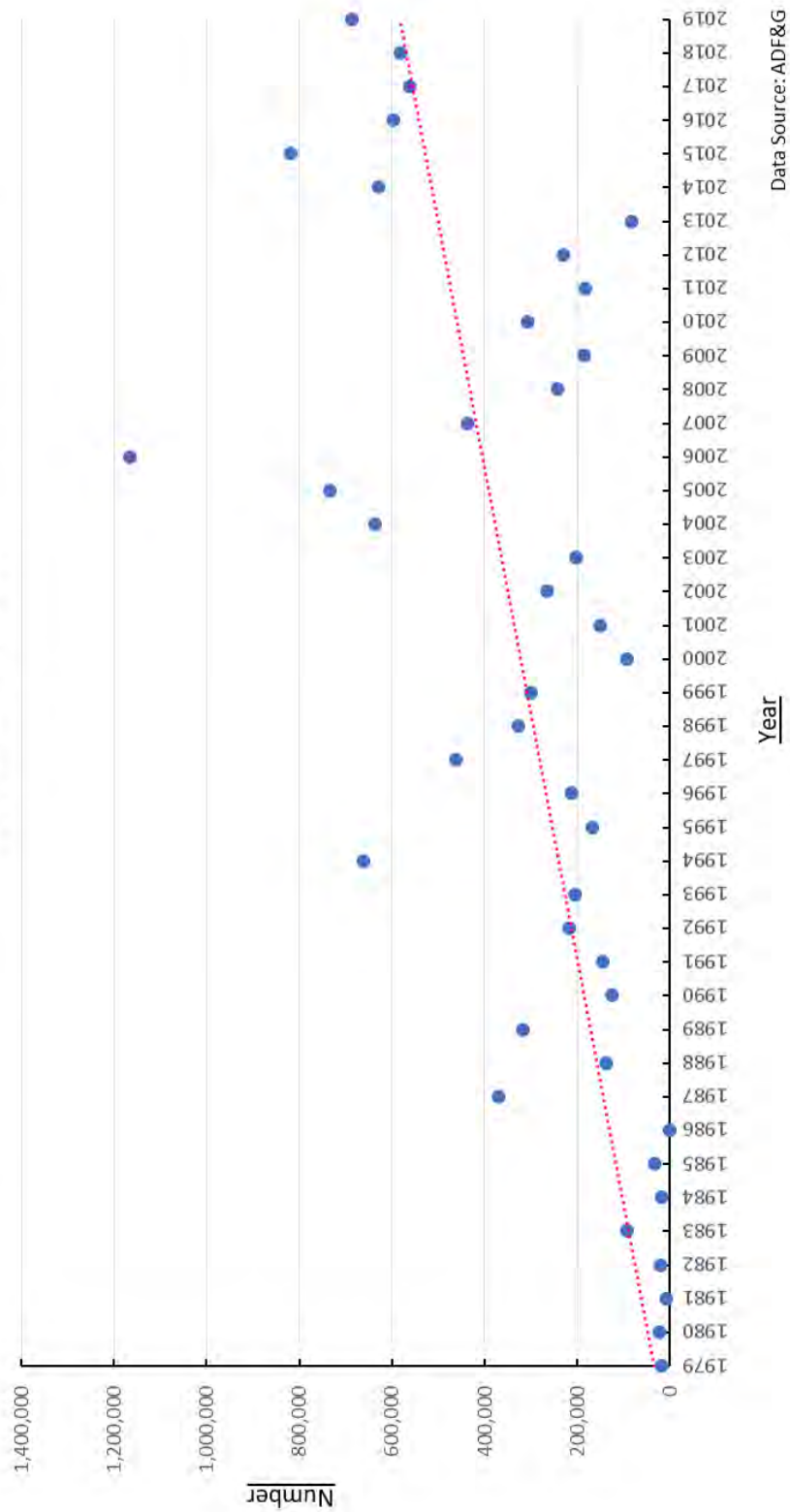


Figure 8D. Kenai River Late-Run Sockeye Salmon August Sonar Passage Data, 1979-2019 Percentages



**Figure 8E. Kenai River Late-Run Sockeye Salmon August Sonar Passage Data, 1979-2019 Numbers**



## VII. Anchor Point OTF Average Sockeye Salmon MEFL

### Figures 9 & 10

Figure 9 displays the MEFL data that comes from the OTF that operates during the month of July. The MEFLs represent data from all the 23 major sockeye stocks occurring in UCI. The OTF vessel has been operating since the early 1980s. Currently, there are six prescribed locations where a 200 fathom, 45 mesh deep, 5 1/8" drift gillnet is set for 30 minutes and retrieved back on the vessel. At each of these six locations, salmon may be caught, see Figure 10. These salmon, all species, are assessed and sampled with various biological data recorded. Figure 9 is the historic data for the MEFL by year. Each year in July, a daily MEFL is calculated for a monthly average.

As you can observe, there may be some length variability from year to year. For instance, in 1992, the July average was 570 mm MEFL. In 1994, the July average was 538 mm MEFL.

\* Note: 570 mm MEFL = 22.4 inches

538 mm MEFL = 21.2 inches

Please note, the OTF reported MEFL in 2012, 581 mm (22.87 inches), decreasing in 2019 to 532 mm (20.94 inches). Also note the returning sockeye MEFLs have steadily declined over the most recent eight year period. The OTF MEFLs declining since 2012 most likely occurred prior to 2012, as these sockeye salmon are the returning adults.

Figure 9. Anchor Point OTF Average Sockeye Salmon MEFL, 1992-2019

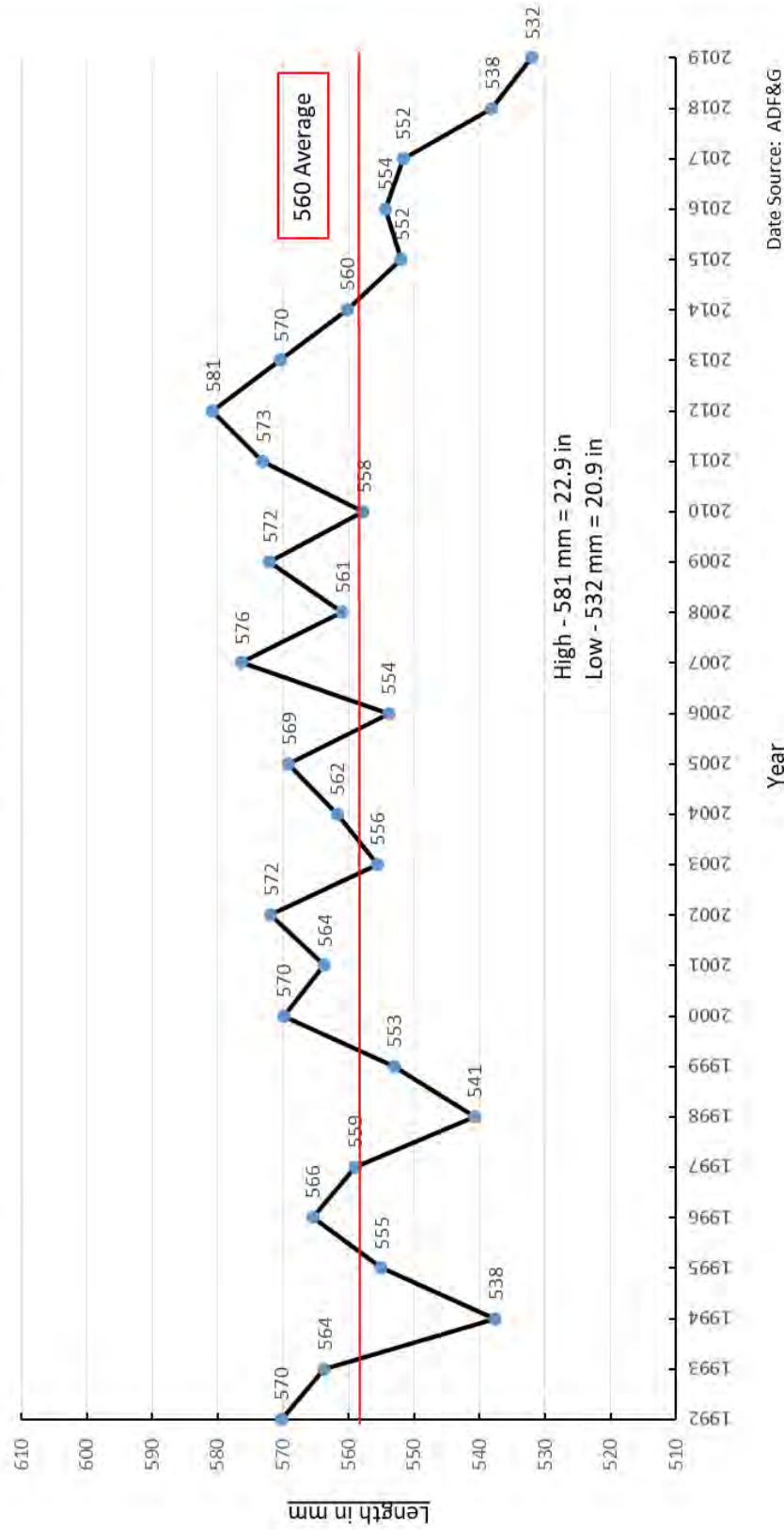
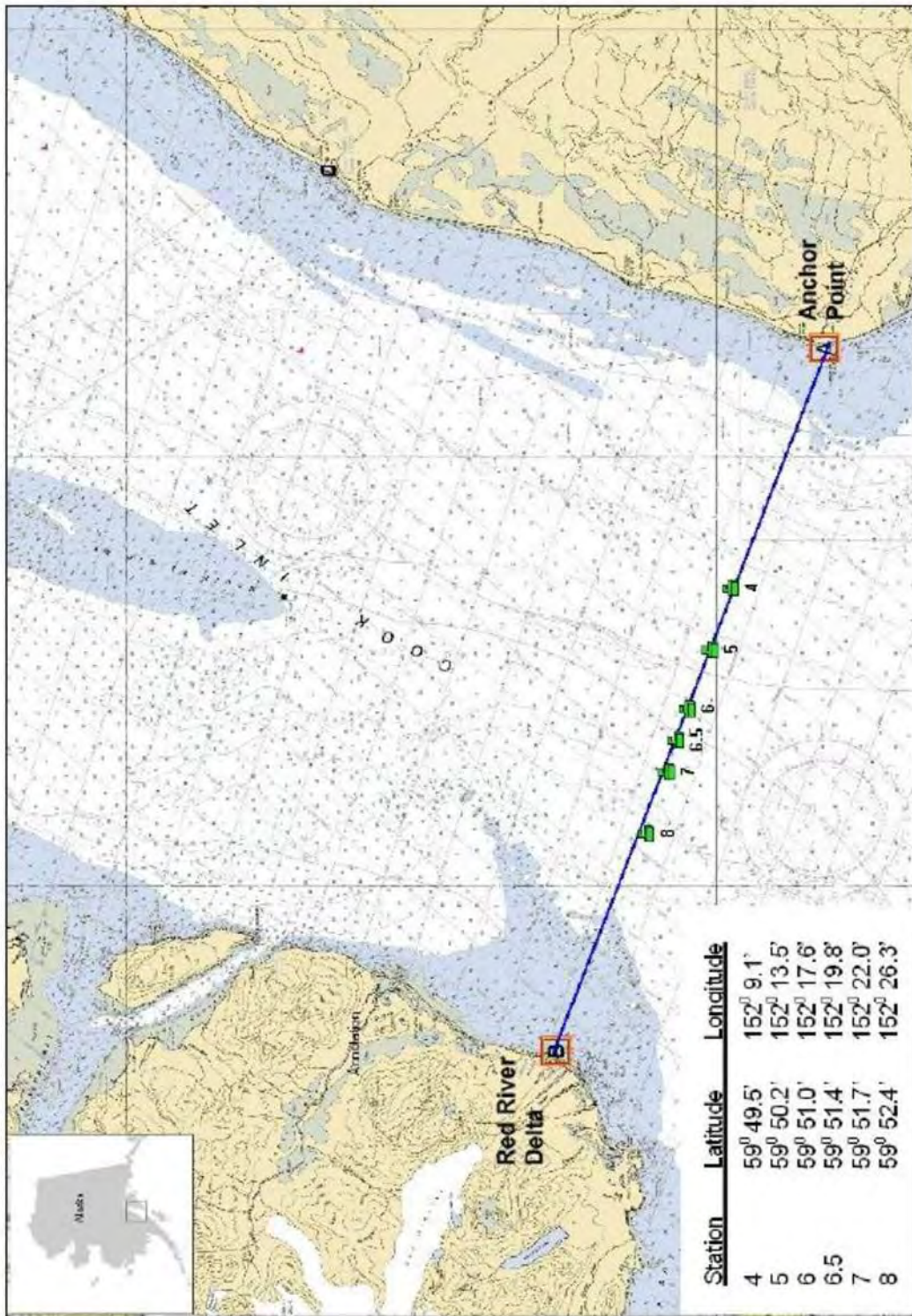


Figure 10. Location of the Upper Cook Inlet offshore Test Fishing Stations



Data Source: ADFG

## VIII. Sockeye Salmon MEFL, Drift Gillnet Fishery, 1992-2018

### Figures 11A – 11C

Figure 11A is the MEFL for the 1.3 (5 year) age class. Figure 11A displays 5-year old sockeyes taken from the drift fleet harvests that include all 23 UCI stocks. The 1.3 age class that returned in 2006 were from the 2001 brood year.

Figure 11B is the MEFL for the 2.3 (6 year) age class. Figure 11B displays 6 year-old sockeyes taken from drift fleet harvests and includes all 23 UCI sockeye stocks. The 2.3 age class in 2006 show some minor changes in MEFL. However, in the 2006 run, these reduced lengths of 564 mm in the 2.3 age class is not as pronounced when compared to the length of 549 mm in the 1.3 age class. The 1.3 and 2.3 age classes are from different brood years. However, both of these brood years smolted and reared in ocean environments at the same time.

Figure 11C displays the MEFL taken from the drift gillnet harvest for the age class 1.3 and the 2.3 sockeye salmon 1992 – 2018. This 1.3 age class of sockeye salmon averaged 571 MEFL during this time period. All 23 major sockeye salmon stocks natal to UCI are included. The average MEFL of 571 applies to both age classes. Even though there is some yearly variations between the two age classes, the average MEFL is nearly identical.

These two age classes smolted with different weights and lengths only to return as adults with virtually identical MEFL of 571.

The 2006 and 2015 through 2019 runs all had large August sonar passage patterns. Since 2012, there has been a significant decline in the MEFLs.

It has been reported by many fishermen and processors that the 2019 sockeye salmon had numerous (10-200) red-colored, maybe infected, spotted areas randomly occurring on the sides of these fish. Additionally, less than 10% of these spotted sockeyes had gray-colored, mushy flesh. These spotted sockeye appeared to show up in the August 2019 catches.



Figure 11A. UCI Sockeye Salmon, Age 1.3, MEFL in Drift Gillnet Harvest, 1992-2018

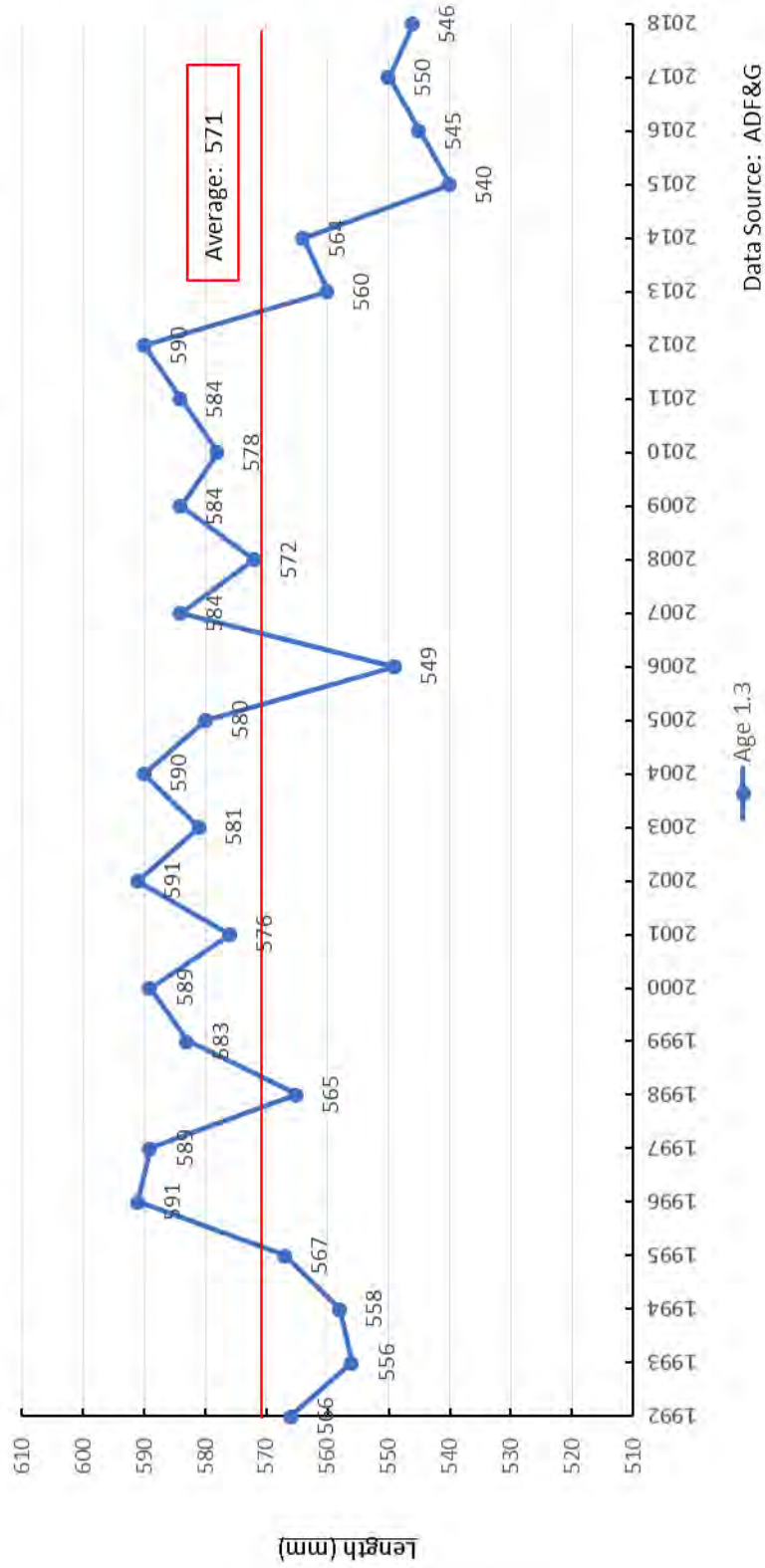


Figure 11B. UCI Sockeye Salmon, Age 2.3, MEFL in Drift Gillnet Harvest, 1992-2018

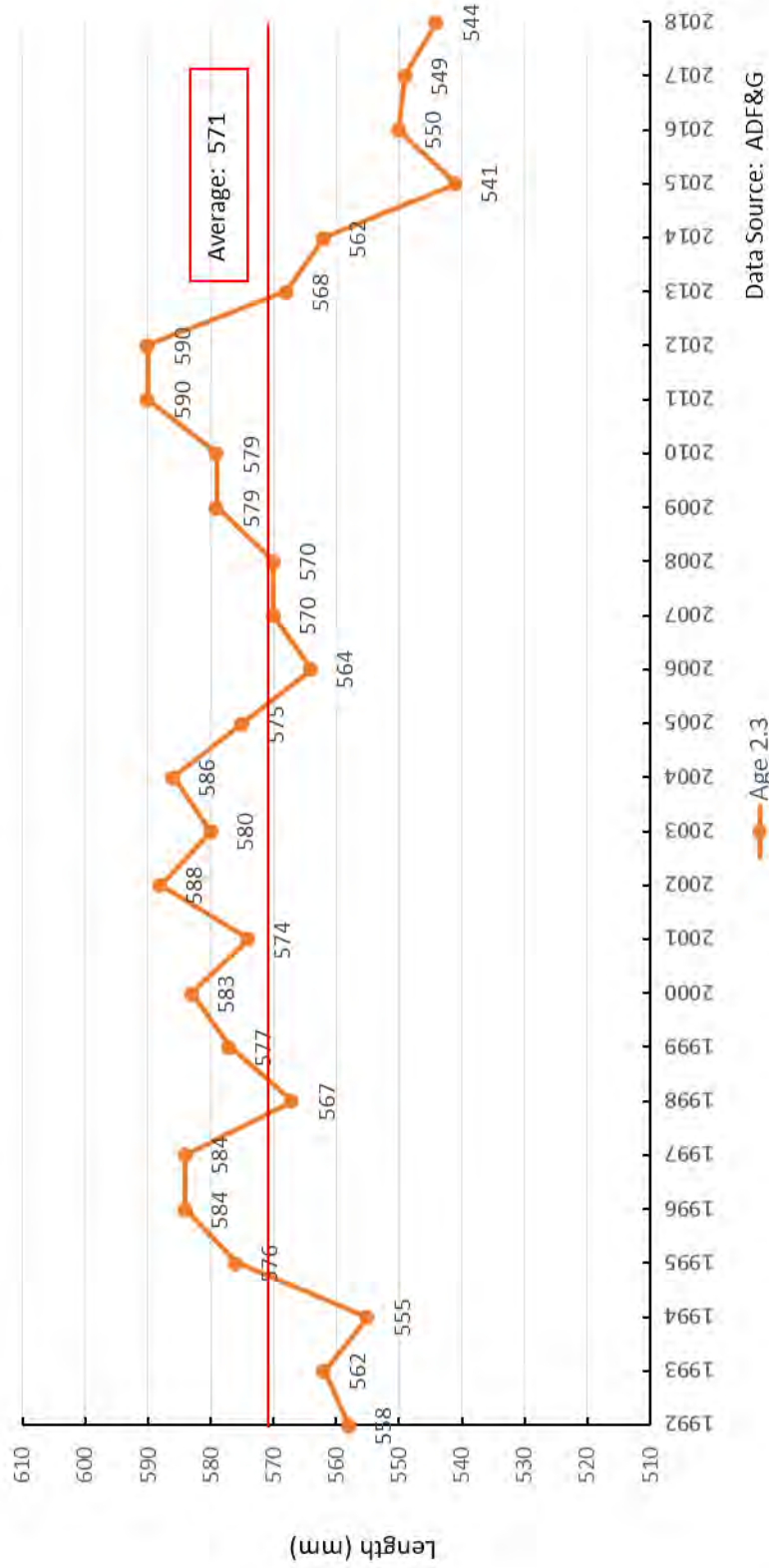
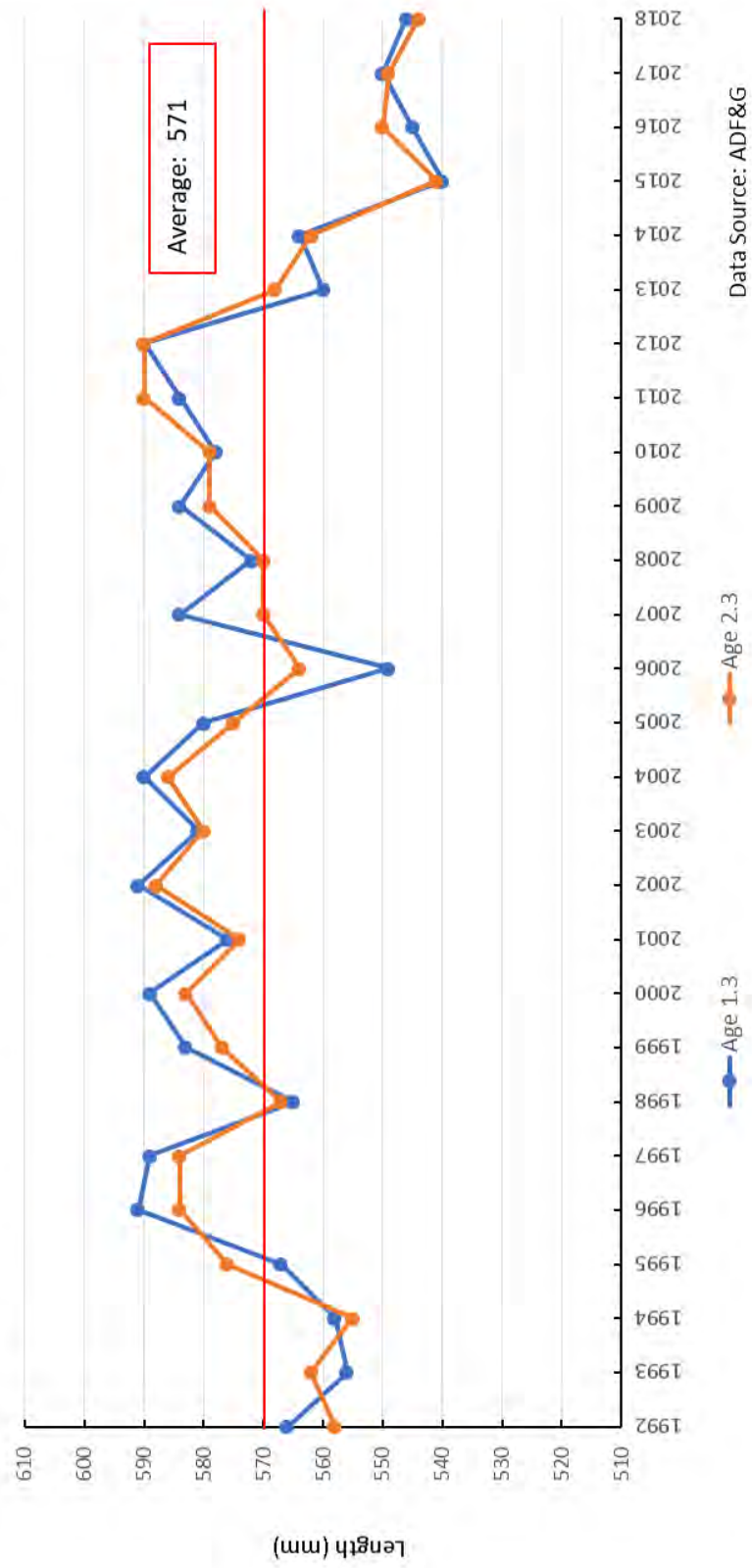


Figure 11C. UCI Sockeye Salmon, Age 1.3 & 2.3, MEFLin Drift Gillnet Harvest, 1992-2018



## **IX. MEFL, KR and KasR Sockeye Salmon, RM 19.5 Sonar**

### **Figures 12A – 12F**

It is noted that the MEFLs at RM 19.5 are a reflection of the sockeye after the commercial, personal use and recreational harvest below the RM 19.5 sonar site.

Figure 12A displays the weighted average MEFL of all sockeyes migrating past the KR sonar site at RM 19.5. As one can see, there can be large MEFL variations from year to year between 1980 and 2018. The weighted mean length is 556 mm. Since 2009/2010, all salmon MEFLs have decreased, on average, by 15%. That is to say that during the past 9 years, all sockeye salmon going past the sonar counter at RM 19.5 have decreased by 15% in MEFL.

Figure 12B displays the KR age 1.3 sockeye salmon MEFL is displayed over the same 1980-2018 timeframe.

Figure 12C displays the Kenai River age 2.3 sockeye salmon lengths at RM 19.5. Both the 1.3 and 2.3 age classes reveal a decrease in length of 15% over the last 9 years.

These age classes are one year apart in brood years and did smolt and presumably rear together in the ocean environments.

Figure 12D displays the KasR sockeye, all ages, passage MEFL. These lengths are for all sockeye stocks and all age classes. Again, there are annual variations of up to 20-30 mm. Please note that there has been an approximate 20% decline in the MEFL during the past 8 years. This 20% decline in the KasR sockeye stocks is larger than the 15% decline in the KR sockeye stocks. The rate of MEFL decline in these KasR stocks is economically problematic.

Figure 12E displays the KasR, age 1.3 sockeye salmon average MEFL, no weights are displayed.

Figure 12F displays the lengths of the age 2.3 sockeye salmon in the KasR, 1979-2018. The average, non-weighted length is 534 mm. These age 2.3 sockeyes are, on average, 6 mm less in length than the age 1.3. These two age classes came from different brood years, however, the age 1.3 and 2.3 smolted together and have reared together for 3 years in the ocean environments.

Figure 12A. MEFL Kenai River Sockeye Salmon, All Ages, 1980-2018

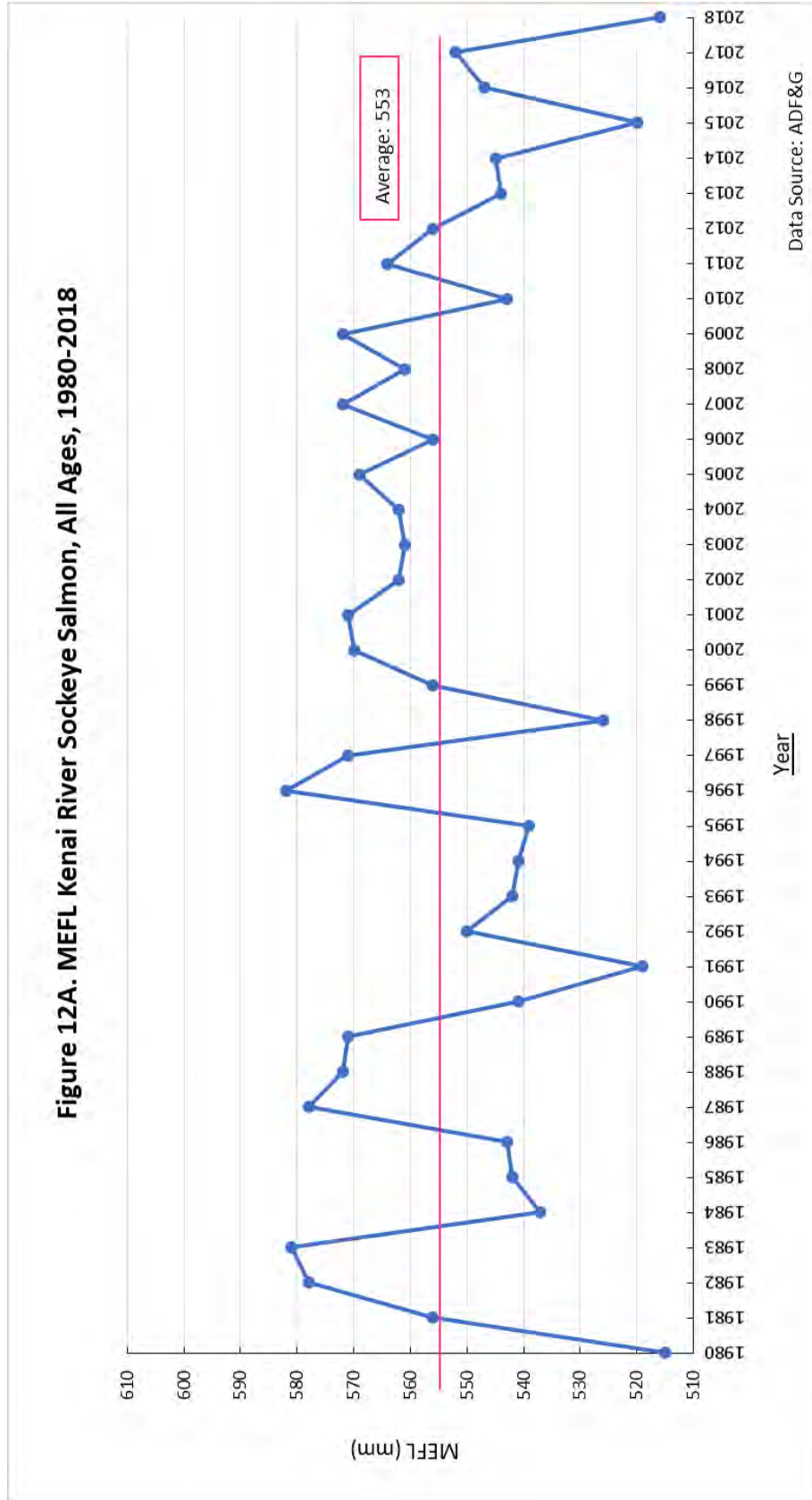


Figure 12B. MEFL Kenai River Age 1.3 Sockeye Salmon, 1980-2018

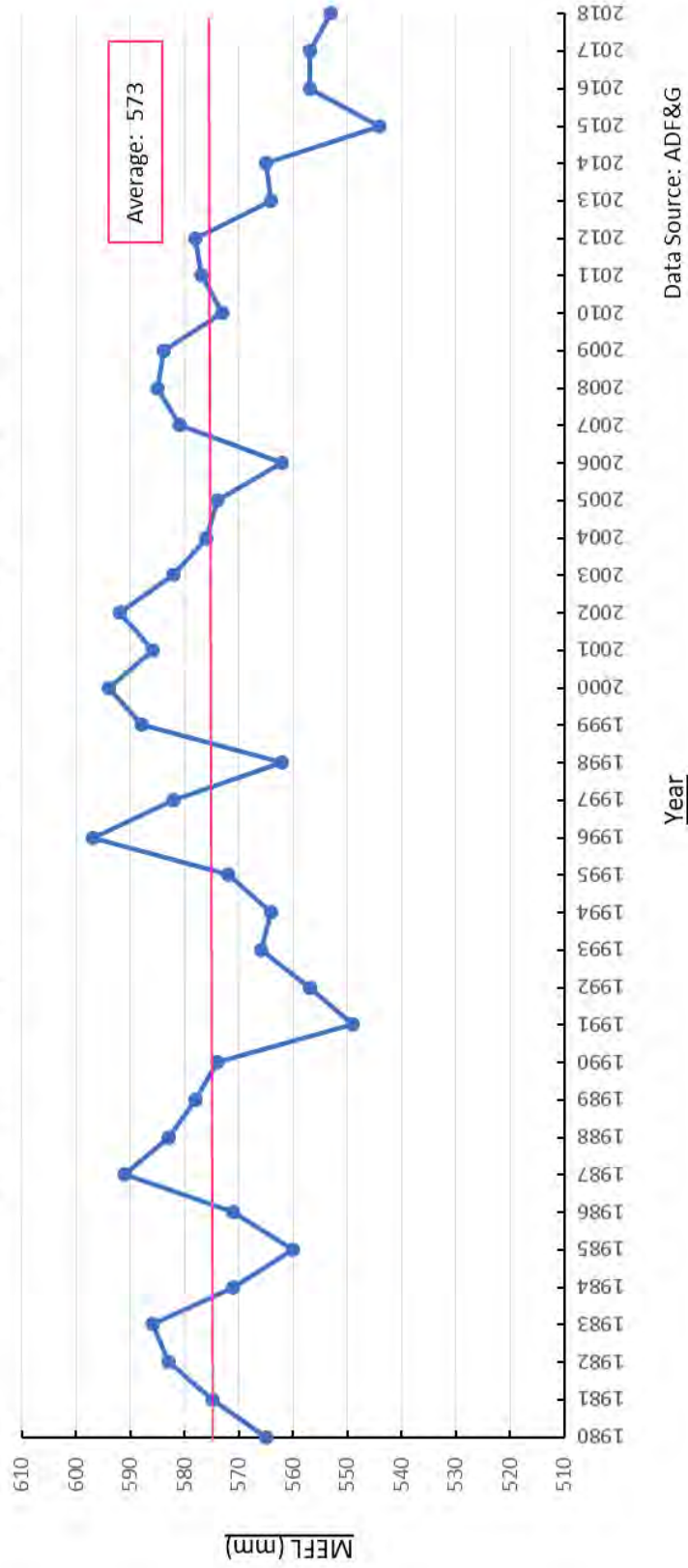


Figure 12C. MEFL Kenai River Age 2.3 Sockeye Salmon, 1980-2018

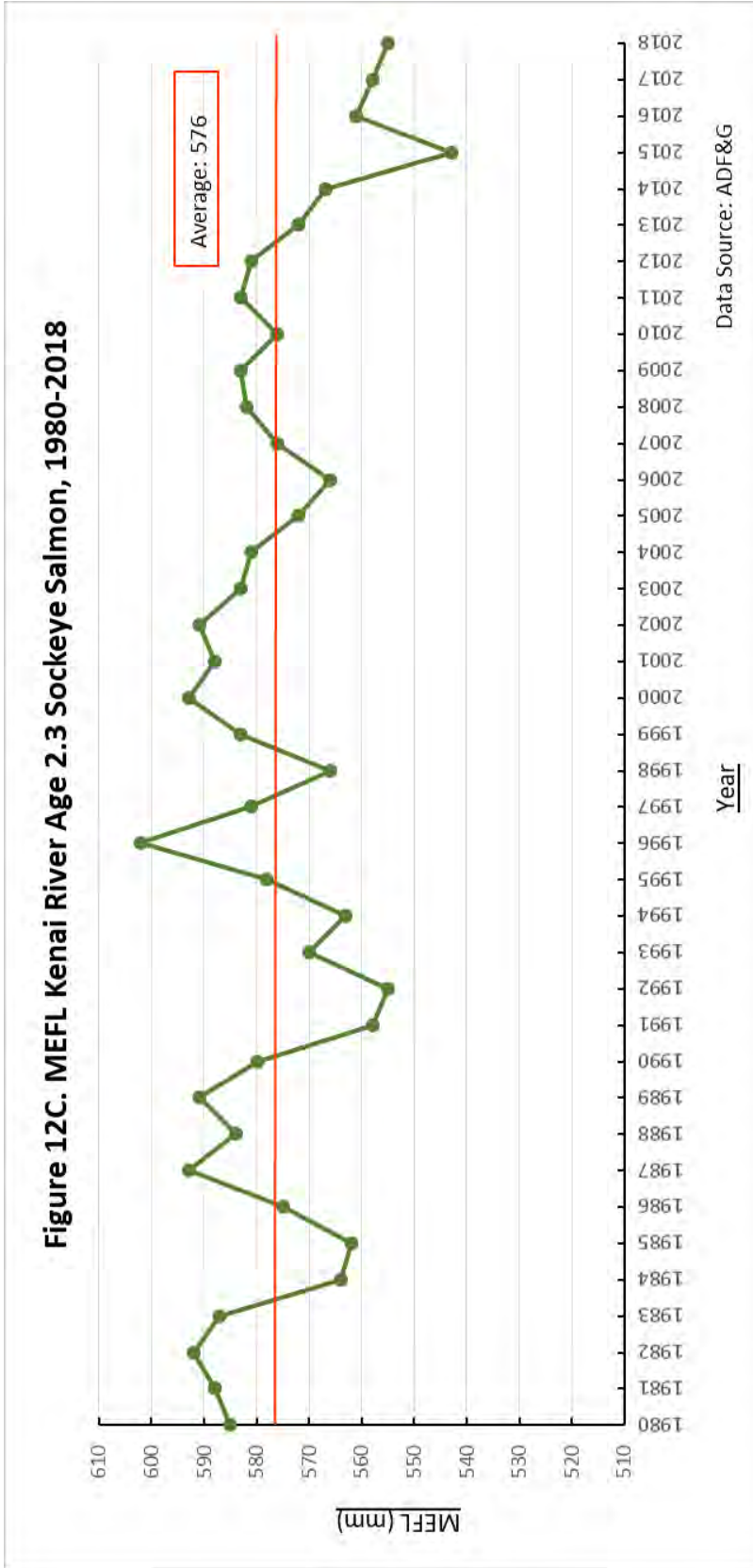


Figure 12D. MEFL Kasilof River Sockeye Salmon, All Ages, 1979-2018

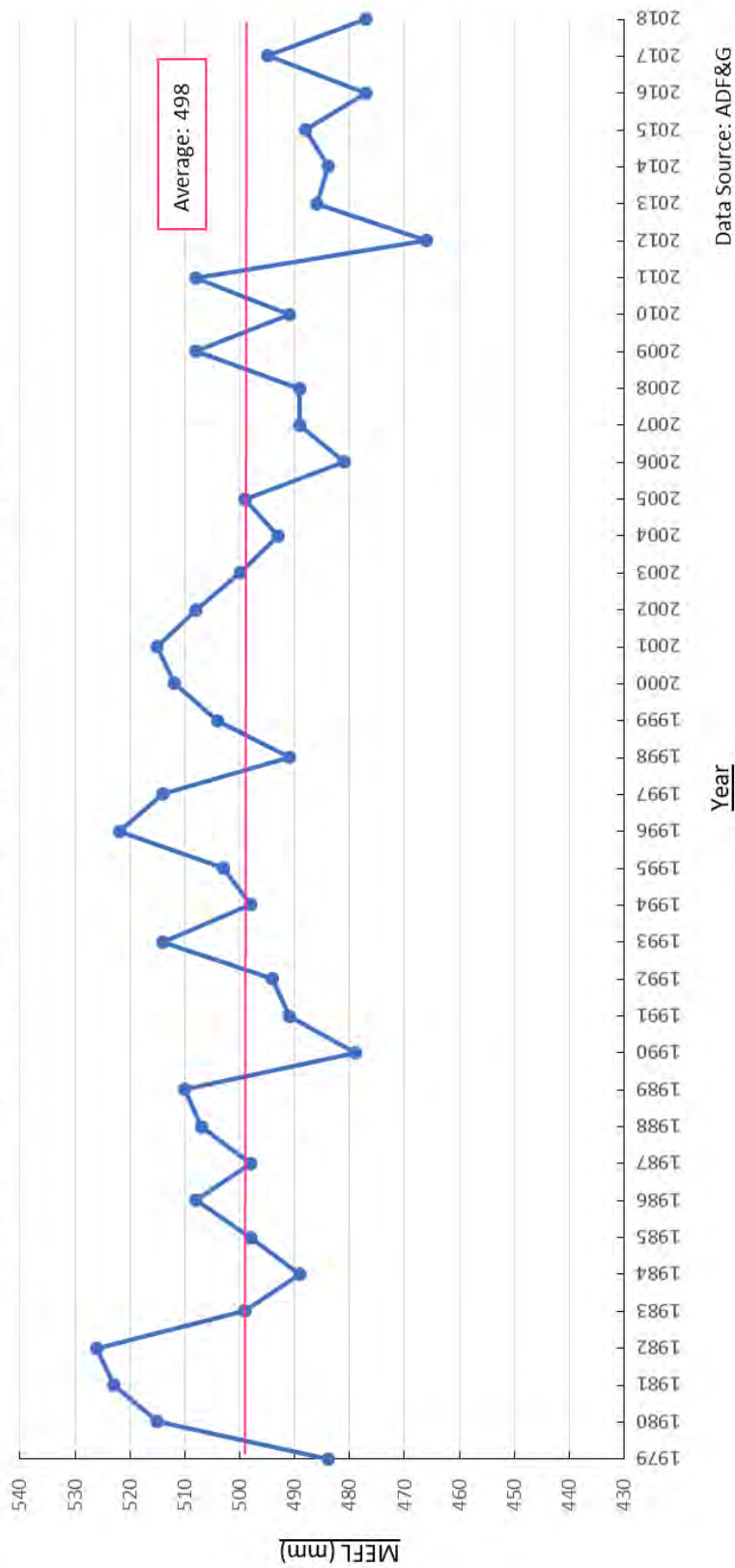




Figure 12E. MEFL Kasilof River Age 1.3 Sockeye Salmon, 1979-2018

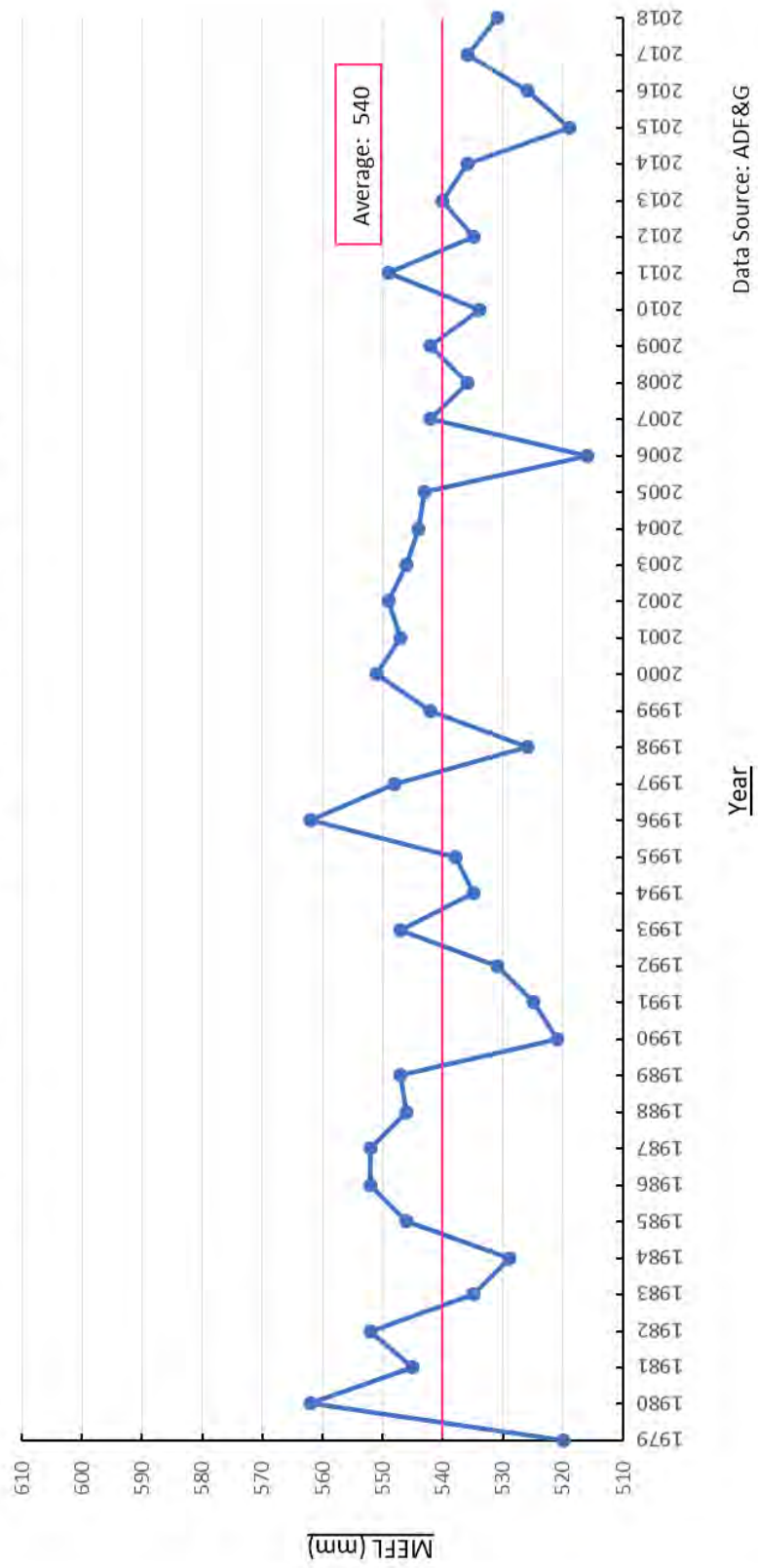
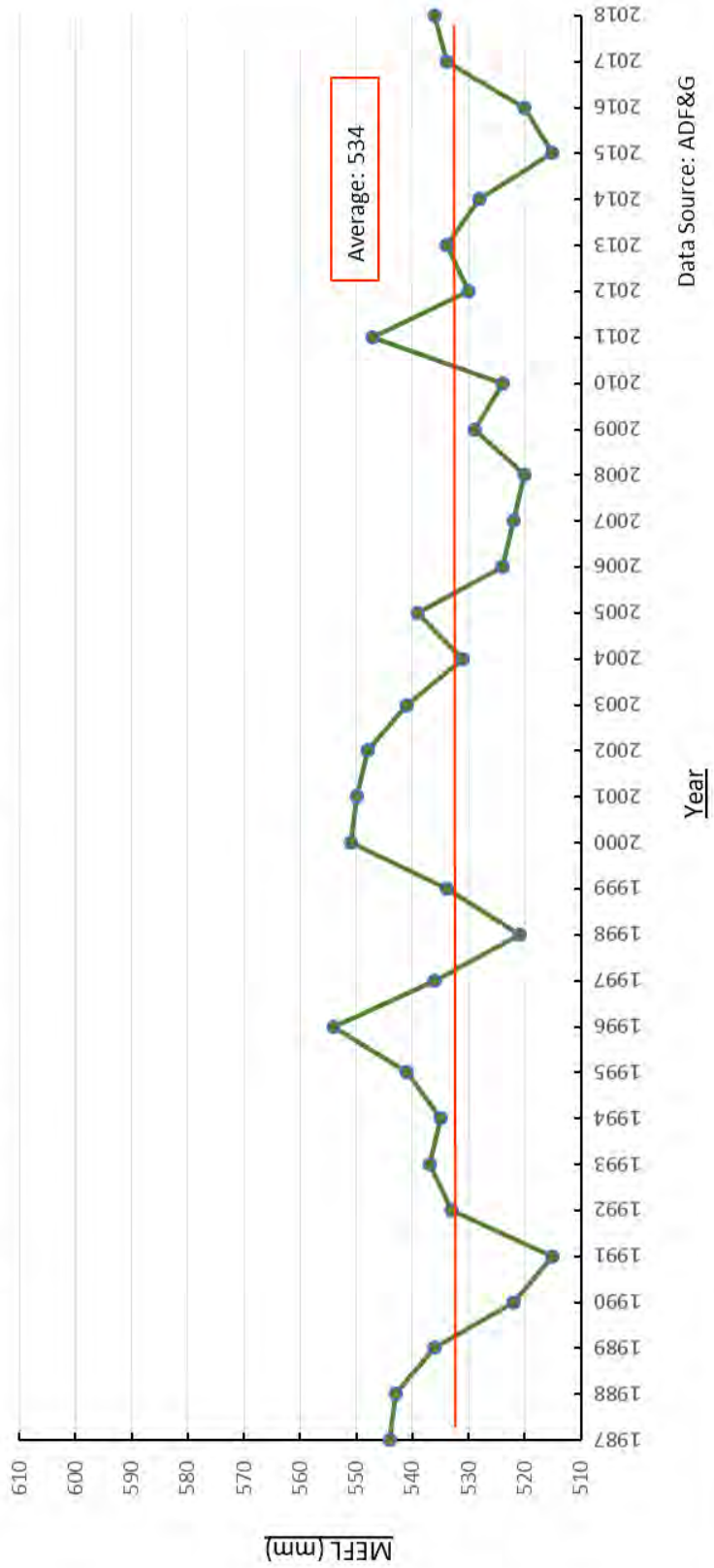


Figure 12F. MEFL Kasilof River Age 2.3 Sockeye Salmon, 1987-2018



## **X. UCI Gillnet Harvest Average Sockeye Salmon Weight in lbs. 1999-2018**

### **Figure 13**

Figure 13 provides the historical weights in lbs. of all age classes in the sockeye harvest by the UCI Drift Gillnet Fleet from 1999-2018. The average harvested weight for this time period was 6.2 lbs., including the 2006 and 2015-2018 harvests. In 2006, the average weight was 5.2 lbs.; the lowest in 40 years.

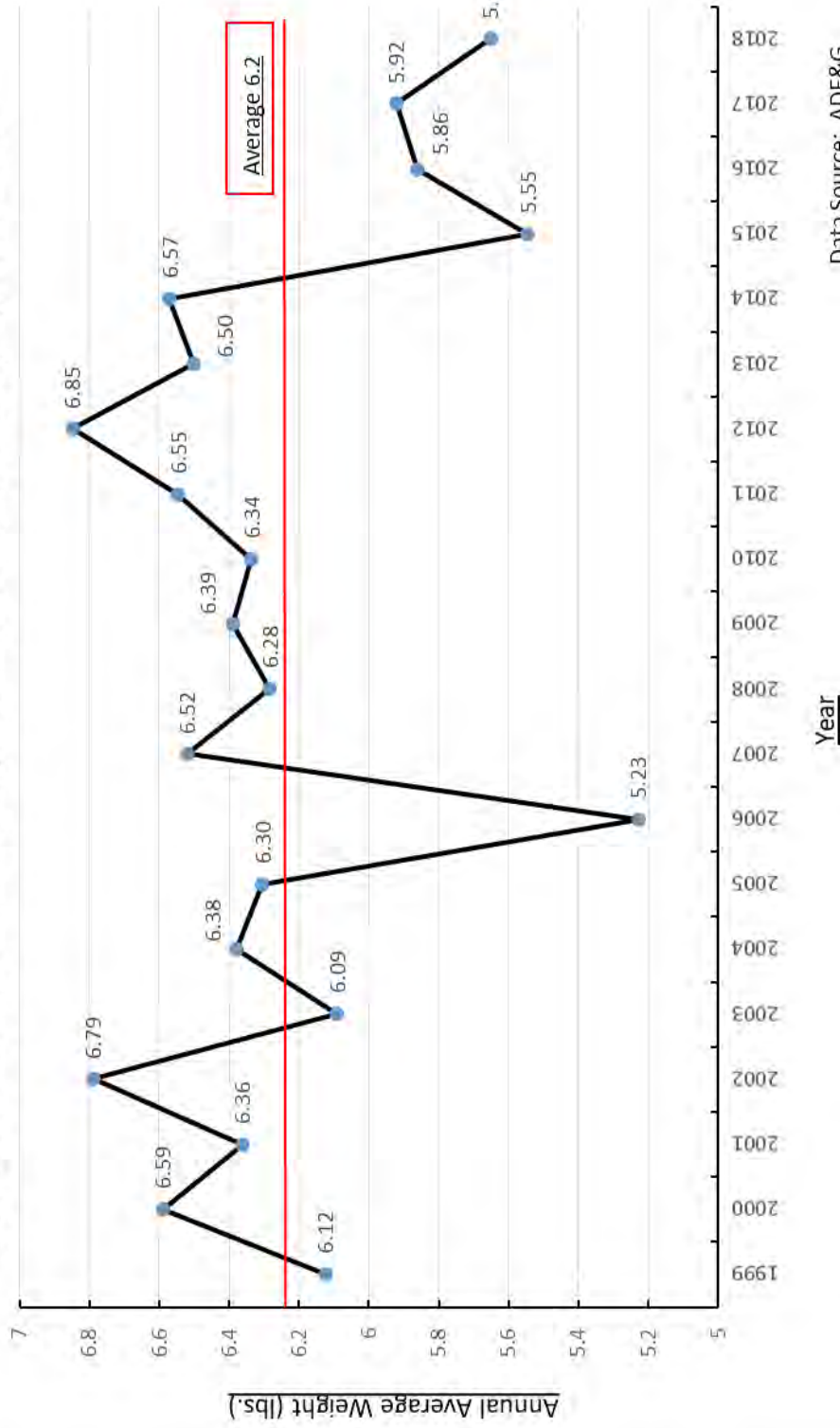
Note: In 2015-2018, all averages are below the 20 year average weight of 6.2 lbs. Also, it is anticipated that the 2019 harvest average weights will be in the 5.4 lb range.

In a September, 2019 Bristol Bay salmon season summary, an average weight of 5.2 lbs is reported for the 56.5 million harvest.

When examining the average sockeye harvested in UCI, not only are the salmon getting shorter in length, but they also weigh less. It is a straight forward loss of one lb per salmon, which equates to a loss of 2 million pounds on a 2 million harvest.

Two million lbs @ \$2 per lb equals a 4 million ex-vessel value, with 4 million dollars less at the first wholesale value. These 2 and 4 million dollar ex-vessel value reductions directly relate to permits, fees and local taxes. Additionally, the ad valorem taxes are reduced.

**Figure 13. UCI Drift Gillnet Average Sockeye Salmon Weight (lbs), 1999-2018**



Data Source: ADF&G

## **XI. Markov Table, KRLRS**

### **Tables 14A & Figures 14B – 14C**

Table 14A is a condensed KRLRS brood table for years 1969-2019. It is noted that it takes 6 to 7 years from a particular brood spawning event for all the adults to return. For this reason, many of the brood table values remain open.

Table 14B is a Markov Table for years 1969-2019. This Markov Table uses data from Table 14A with 200,000 increments, with 100,000 overlaps. As readily apparent, the 600-800,000 spawning interval had the highest mean return. At an average, an escapement of 734,000 spawners brought back a 4,636,000 return and a 3,902,000 mean yield. This is highlighted in yellow for the reader's reference. In the 500-700,000 spawning interval, mean yields drop to 2,483,000. In the 700-900,000 spawning interval, mean yields are 3,729,000, a decrease of about 200,000. In the 800-1,000,000 spawning interval, mean yields are 1,200,000 less than the 600-800,000 spawning interval.

The Markov Table 14B indicates the MSY spawner range should be 600-900,000.

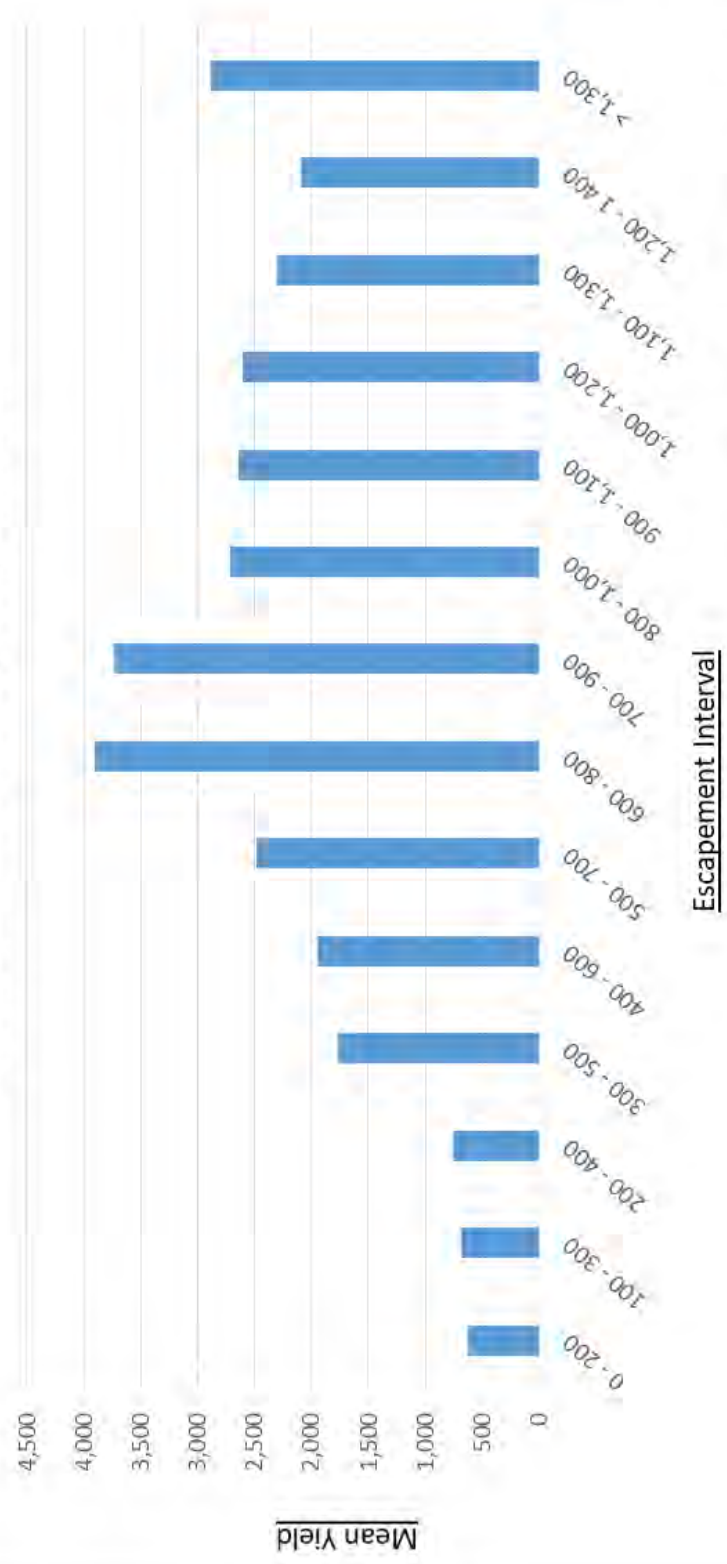
<b>Table 14A . Kenai late-run sockeye salmon brood table, brood years 1969-2019.</b>					
Hidden enhanced escapement was not subtracted to estimate spawners.					
Brood Year	Spawners	Returns	Yield	Return per Spawner	Harvest Rate
1968	115.545	960.169			
1969	72.901	430.947	358.046	5.91	0.83
1970	101.794	550.923	449.129	5.41	0.82
1971	406.714	986.397	579.683	2.43	0.59
1972	431.058	2,547.851	2,116.793	5.91	0.83
1973	507.072	2,125.986	1,618.914	4.19	0.76
1974	209.836	788.067	578.231	3.76	0.73
1975	184.262	1,055.373	871.111	5.73	0.83
1976	507.440	1,506.012	998.572	2.97	0.66
1977	951.038	3,112.620	2,161.582	3.27	0.69
1978	511.781	3,785.040	3,273.259	7.40	0.86
1979	373.810	1,321.039	947.229	3.53	0.72
1980	615.382	2,673.295	2,057.913	4.34	0.77
1981	535.523	2,464.323	1,928.800	4.60	0.78
1982	755.672	9,587.700	8,832.028	12.69	0.92
1983	792.765	9,486.794	8,694.029	11.97	0.92
1984	446.397	3,859.109	3,412.712	8.65	0.88
1985	573.836	2,587.921	2,014.085	4.51	0.78
1986	555.207	2,165.138	1,609.931	3.90	0.74
1987	2,011.772	10,356.627	8,344.855	5.15	0.81
1988	1,213.047	2,546.639	1,333.592	2.10	0.52
1989	2,026.637	4,458.679	2,432.042	2.20	0.55
1990	794.754	1,507.693	712.939	1.90	0.47
1991	727.159	4,436.074	3,708.915	6.10	0.84
1992	1,207.382	4,271.576	3,064.194	3.54	0.72
1993	997.730	1,689.779	692.049	1.69	0.41
1994	1,309.695	3,052.634	1,742.939	2.33	0.57
1995	776.880	1,899.870	1,122.990	2.45	0.59
1996	963.125	2,261.757	1,298.632	2.35	0.57
1997	1,365.746	3,626.402	2,260.656	2.66	0.62
1998	929.091	4,465.328	3,536.237	4.81	0.79
1999	949.276	5,755.063	4,805.787	6.06	0.84
2000	696.899	7,058.348	6,361.449	10.13	0.90
2001	738.229	1,698.142	959.913	2.30	0.57
2002	1,126.642	3,630.740	2,504.098	3.22	0.69
2003	1,402.340	1,922.165	519.825	1.37	0.27
2004	1,690.547	3,240.428	1,549.881	1.92	0.48
2005	1,654.003	4,802.362	3,148.359	2.90	0.66
2006	1,892.090	5,003.585	3,111.495	2.64	0.62
2007	964.261	4,376.406	3,412.145	4.54	0.78
2008	708.833	3,377.884	2,669.051	4.77	0.79
2009	848.117	3,983.872	3,135.755	4.70	0.79
2010	1,037.666	3,625.388	2,587.722	3.49	0.71
2011	1,284.486	4,513.815	3,229.329	3.51	0.72
2012	1,212.837	1,490.134	277.297	1.23	0.19
2013	980.403				
2014	1,219.124				
2015	1,325.673		2,541.668	4.45	0.70
2016	<i>1,383.692</i>				
2017	<i>1,308.492</i>				
2018	<i>1,035.761</i>				
2019	<i>1,548.157</i>				

Data Source: ADF&G  
*Italicized Values: UCIDA*

Table 14B. Markov yield table for Kenai late-run sockeye salmon constructed using data from brood years 1969-2009

Escapement Interval	Number of Years	Mean Spawners	Mean Returns	Return per Spawner	Mean	Yield Range
0 - 200	4	119	749	6.3	631	358 - 871
100 - 300	4	153	839	5.8	686	449 - 871
200 - 400	2	292	1,055	4.4	763	478 - 947
300 - 500	4	414	2,179	5.1	1,764	580 - 3,413
400 - 600	9	497	2,448	4.9	1,950	580 - 3,413
500 - 700	8	563	3,046	5.3	2,483	999 - 6,361
600 - 800	9	734	4,636	6.3	3,902	713 - 8,694
700 - 900	8	768	4,497	5.9	3,729	713 - 8,694
800 - 1,000	7	943	3,664	3.9	2,720	692 - 4,806
900 - 1,100	6	959	3,610	3.8	2,641	692 - 4,806
1,000 - 1,200	1	1,127	3,631	3.2	2,604	2,504 - 2,504
1,100 - 1,300	3	1,182	3,483	3.0	2,301	1,334 - 3,064
1,200 - 1 400	4	1,274	3,374	2.7	2,100	1,334 - 3,064
> 1,300	8	1,669	4,558	2.6	2,889	520 - 8,345
<i>Note:</i> Numbers in thousands of fish.						
<i>Data Source:</i> Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska						

Figure 14B. KRLRS Markov Table, 1969-2009



Data Source: Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska

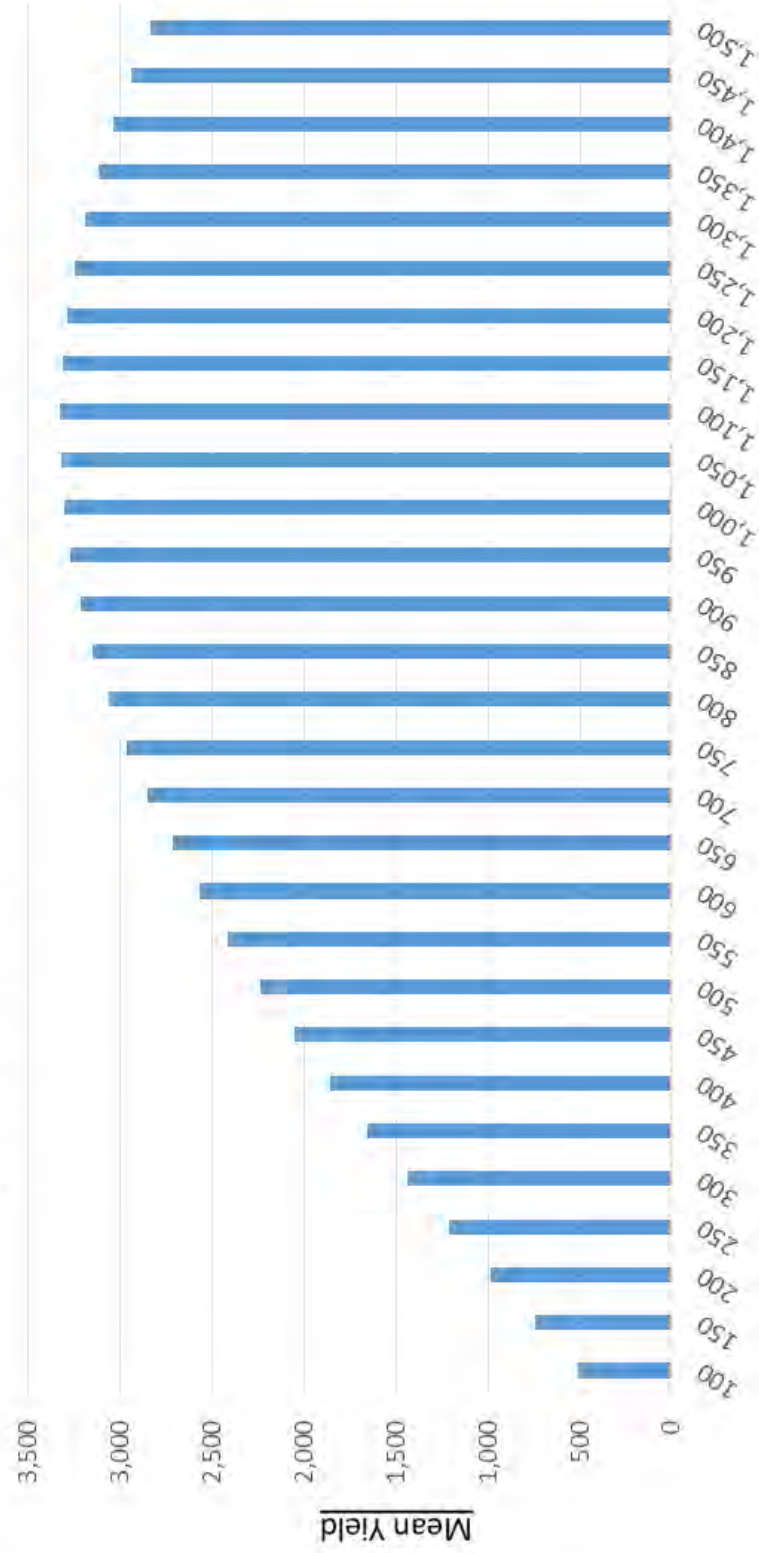


Table 14C results from the Kenai River Brood Interaction Simulation Model. Bold cells indicate a spawner range with less than a 6% probability of a commercial harvest of less than 1,000,000. Shaded cells indicate a spawner range of capable of producing a harvest that is 90% of MSY. The brood interaction model indicates a spawner escapement range of 700,000-1,100,000 (DIDSON counts). Data Source: Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska.

Table 14C. - Simulation results from a brood-interaction model for Kenai River late-run sockeye salmon.				
Brood Years 1969-2009				
Number	Mean	Mean	Yield	
Spawners	Run	Yield	CV	<i>P</i> < 1,000
100	606	506	0.65	0.953
150	896	746	0.56	0.820
200	1,182	982	0.53	0.596
250	1,463	1,213	0.52	0.431
300	1,736	1,436	0.51	0.304
350	2,002	1,652	0.51	0.219
400	2,258	1,858	0.51	0.157
450	2,504	2,054	0.51	0.121
500	2,739	2,239	0.51	0.086
550	2,961	2,411	0.51	0.070
600	3,171	2,571	0.52	0.065
<b>650</b>	<b>3,366</b>	<b>2,716</b>	<b>0.52</b>	<b>0.057</b>
<b>700</b>	<b>3,547</b>	<b>2,847</b>	<b>0.52</b>	<b>0.052</b>
<b>750</b>	<b>3,712</b>	<b>2,962</b>	<b>0.52</b>	<b>0.051</b>
<b>800</b>	<b>3,862</b>	<b>3,062</b>	<b>0.53</b>	<b>0.048</b>
<b>850</b>	<b>3,996</b>	<b>3,146</b>	<b>0.53</b>	<b>0.046</b>
<b>900</b>	<b>4,114</b>	<b>3,214</b>	<b>0.54</b>	<b>0.043</b>
<b>950</b>	<b>4,216</b>	<b>3,266</b>	<b>0.54</b>	<b>0.044</b>
<b>1,000</b>	<b>4,302</b>	<b>3,302</b>	<b>0.55</b>	<b>0.047</b>
<b>1,050</b>	<b>4,371</b>	<b>3,321</b>	<b>0.55</b>	<b>0.050</b>
<b>1,100</b>	<b>4,425</b>	<b>3,325</b>	<b>0.56</b>	<b>0.052</b>
<b>1,150</b>	<b>4,463</b>	<b>3,313</b>	<b>0.56</b>	<b>0.052</b>
<b>1,200</b>	<b>4,485</b>	<b>3,285</b>	<b>0.57</b>	<b>0.057</b>
1,250	4,493	3,243	0.58	0.062
1,300	4,487	3,187	0.59	0.067
1,350	4,467	3,118	0.60	0.071
1,400	4,434	3,035	0.61	0.081
1,450	4,390	2,941	0.62	0.099
1,500	4,334	2,836	0.64	0.118

*Note:* Numbers are in thousands of fish. Model parameters were obtained from regression analyses conducted using brood year 1669-2009. Tanges corresponding to the original criteria (6% risk of a yield, 1 million salmon; Carlson et.al 1999) used to establish the sustainable escapement goal range are indicated in bold. Ranges corresponding to escapement needed to produce 90-100% of maximum yield (asuming a constant escapement goal policy) are shaded.

Figure 14C. KRLRS Bood Inleraction Simulation Model



Data Source: Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska

Spawners

## XII. KRLRS Salmon: Mortality – Eggs to Age 0 Fry and Adults

### 1. Assumptions:

- A. 50:50 male to female ratio
- B. Each female fecundity is 3,500 eggs, on average
- C. Ocean Survival is 20%

The mortality from adult, eggs, fry, smolt to returning adult ranges from 99.77% (4 million return, 20 million fry) up to 99.83% (3 million return, 20 million fry). The ability to accurately model and predict the adult to adult cycle over a 4, 5 or 6 year life cycle is mathematically very difficult. The probability of accurately forecasting or predicting a future event of adult spawners forces one into a negative probability art form. This is especially true due to not knowing the mortality, variables and or their effects.

The difference between a 4 million and a 3 million adult return is a 99.77% and a 99.83% mortality (See Scenario A and Scenario B, 20 million age 0 fall fry is 00.06%, or six one-hundredths of one percent).

### 2. Scenarios

#### Scenario A:

100% spawn – 1.0 million spawners, 500,000 females, 4.0 million return  
 500,000 x 3,500 = 1.75 Billion eggs spawned

<u>Eggs</u>	<u>Age 0 Fall Fry</u>	<u>Egg to Fry Mortality</u>	<u>4 Million Return</u>
1.75B = 20 million	=	98.86%	= 99.77% mortality
1.75B = 15 million	=	99.14%	= 99.77% mortality

#### Scenario B:

100% spawn – 1.0 million spawners, 500,000 females, 3.0 million return  
 500,000 x 3,500 = 1.75 billion eggs spawned

<u>Eggs</u>	<u>Age 0 Fall Fry</u>	<u>Egg to Fry Mortality</u>	<u>3 Million Return</u>
1.75B = 20 million	=	98.86% mortality	= 99.83% mortality
1.75B = 15 million	=	98.93% mortality	= 99.83% mortality

### **XIII. In-River Goals, KRLRS, 2000-2019**

The State of Alaska BOF and regulatorily adopted management plans for the KRLRS and included in-river passage goals. A passage goal is the desired number of KRLRS that are to pass upriver of the Bendix, or now DIDSON sonar site at RM 19.5 of the Kenai River. The BOF has, in regulation, established three goals depending on the number of KRLRS. The three tiers are as follows:

- (1) at run strengths of less than 2,300,000 sockeye salmon,*
  - (A) the department shall manage for an inriver goal range of 900,000 – 1,100,000 sockeye salmon past the sonar counter at river mile 19; and*
  - (B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, unless the department determines that the minimum inriver goal will not be met, at which time the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 24 hours per week, except as provided in 5 AAC 21.365;*
- (2) at run strengths of 2,300,000 – 4,600,000 sockeye salmon,*
  - (A) the department shall manage for an inriver goal range of 1,000,000 – 1,300,000 sockeye salmon past the sonar counter at river mile 19;*
  - (B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, or until the department makes a determination of run strength, whichever occurs first; if the department determines that the minimum inriver goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 51 hours per week, except as provided in 5 AAC 21.365; and*
  - (C) the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday and for one continuous 24-hour period per week beginning between 7:00 p.m. Monday and 7:00 a.m. Wednesday;*
- (3) at run strengths greater than 4,600,000 sockeye salmon,*
  - (A) the department shall manage for an inriver goal range of 1,100,000 – 1,500,000 sockeye salmon past the sonar counter at river mile 19;*
  - (B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, or until the department makes a determination of run strength, whichever occurs first; if the department determines that the minimum inriver goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency*

*order, allow extra fishing periods of no more than 84 hours per week, except as provided in 5 AAC 21.365; and*

*(C) the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week, beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday.*

Each year ADFG begin the UCI fishery using the preseason forecast and outlook public notices. If the forecast papers indicate the KRLRS to be in Tier 2, as described above, all fishing harvests are as directed above by the BOF regulations. If, however, the in-river harvests and the OTF program indicate either a smaller or larger run, than forecasted, then an in-season run adjustment will be made. These in-season run-adjustments are often made in late July. If the in-season run is smaller than forecasted, then there is very little opportunity to reduce harvest. This results in overharvest occurring up to that assessment date and underharvest on the remaining portion of the run. Conversely, if the run is above forecast, this results in underharvest occurring up to that assessment date and overharvest on the remaining portion of the run.

Table 15 reflects how in-river goals change by year depending on the use of the Bendix or the DIDSON sonar counter. The Bendix was used from 2000 to 2010. The DIDSON has been used from 2011 to present. The 'Made' or 'Exceeded' result is the comparison of the passage estimates to the in-river goal. In 9 of the last 10 years, 90%, and 14 of the last 20 years, 70%, of these times the in-river goals were exceeded.

If more/larger escapements were considered to be a solution to decreasing MEFL, weight at age and optimum yields, then the events described earlier in this paper would not have happened. Exceeding the in-river goals are most of the problem, not the solution.

It is not understood how an in-river goal complies with a BEG, GHF or ACL and MSY or OY management.

**Table 15. Kenai River Sockeye Salmon - Past 20 Years**

Year	Inriver Goal	Passage Estimate	Result
2000	600,000-850,000	624,578	Made
2001	600,000-850,000	650,036	Made
2002	750,000-950,000	957,924	Exceeded
2003	750,000-950,000	1,181,309	Exceeded
2004	850,000-1,100,000	1,385,981	Exceeded
2005	850,000-1,100,000	1,376,452	Exceeded
2006	750,000-950,000	1,499,692	Exceeded
2007	750,000-950,000	867,572	Made
2008	650,000-850,000	614,946	Made
2009	650,000-850,000	745,170	Made
2010	750,000-950,000	970,662	Exceeded
2011	1,100,000-1,350,000	1,599,217	Exceeded
2012	1,100,000-1,350,000	1,581,555	Exceeded
2013	1,000,000-1,200,000	1,359,893	Exceeded
2014	1,000,000-1,200,000	1,520,340	Exceeded
2015	1,000,000-1,200,000	1,709,051	Exceeded
2016	1,100,000-1,350,000	1,383,692	Exceeded
2017	1,000,000-1,300,000	1,308,498	Exceeded
2018	900,000-1,100,000	1,035,761	Made
2019	1,000,000-1,300,000	1,848,157	Exceeded
		Made 6	30%
		Exceeded 14	70%
<p><i>Note:</i> prior to 2011, goals were Bendix based and assessed; in 2011 goals are DIDSON-based and assessed</p> <p><i>Note:</i> spawning escapement for 2018 is an estimate; 2019 spawning esc unknown, but will exceed SEG</p> <p><i>Data Source:</i> ADF&amp;G (Unpublished)</p>			

#### XIV. Yields from the KRLRS Brood Table for 2012 and 2013

For the 2012 brood year, the following is noted:

<u>Spawners</u>	<u>Return</u>	<u>R/S</u>
1,212,921	1,484,043	1.22 : 1

The R/S of 1.22 : 1 is the lowest since 1968, 45 years. In this 2012 brood year, there was a yield of 136,000 KRLRS. This is pathetic in that these 136,000 KRLRS are to support a commercial, sport and subsistence fisheries through all of UCI.

Again, if larger escapements are to produce larger harvests, then larger escapements are the problem, not the solution.

For the 2013 brood year Return to Date, the following is noted:

<u>Spawners</u>	<u>Return</u>	<u>R/S</u>
980,208	1,078,658	1.10 : 1

The R/S of 1.10 : 1, again, is the lowest now in 46 years. Even lower than the 2012 brood year. The yield to date for the 2013 brood is 98,450 KRLRS. This is pathetic in that this yield of 98,450 supported the commercial, sport and subsistence through all of UCI. A portion of this brood year returned in 2019. However, ADFG does not have that data at this time.

Again, if larger escapements are to produce larger harvests, then larger escapements are the problem, not the solution.

The 2012 and 2013 brood years also demonstrate the negative interaction between brood years. In 2010, 2011 and 2012, in-river goals were exceeded. The effect on yields from back-to-back exceeding of the in-river goals has potentially devastated the 2012 and 2013 yields.

In 2019, the KRLRS sonar passage was nearly 1.9 million sockeyes. This is equal to the entire UCI harvest of 1.95 million sockeyes, all 23 major stocks. This year, as many KRLRS passed the RM 19.5 sonar counter as the entire commercial fishery harvests in UCI.

## XV. BENDIX to DIDSON/ARIES Hydroacoustics Counters

In the Kenai, Kasilof and Yentna Rivers there have been a few different echo-location or sonar systems used to enumerate adult salmon runs. The Bendix system relied on echo-location, electronic signal processing to record the presence of objects passing through a transducer produced electronic beam. The state of propagation, echo reception and processing of these electrical signals were reflections of the electrical engineering sophistication of 1960's and early 1970's. These Bendix units were often made of military-grade components. These Bendix units, early on, relied on oscilloscopes, audible alarms and hand-held counters (finger-clickers). These units were required constant calibration, sometimes several times per hour. This historical description is not intended to be derogatory, rather a depiction of the state of echo-location systems in the 1960-1970's. In the late 1980's, other echo-location developments occurred both in the research and commercial markets. The commercial and recreational sectors saw numerous manufacturers and markets develop. Gone were the old flashers – paper-carbon recorders were replaced with new higher power, multi-frequency video display units.

Research markets also had new technologies in echo-location developments. One of these was the DIDSON. The DIDSON systems were selected by the ADF&G for testing and possible replacement for the Bendix systems. In the early 2000's, units were tested and deployed. A full-scale side-by-side comparative field test was undertaken by ADF&G from 2004-2008. Abstract of this side-by-side study is provided below:

“Fishery managers have long relied on the use of active hydroacoustic systems to assess salmon (*Oncorhynchus* spp.) populations. Long-term datasets extending more than 20 years obtained from Bendix echo-counting sonars have provided the primary data used to assess migrating adult salmon escapement in several Alaska rivers. When it became necessary to replace the echo counters with a newer technology, a DIDSON was selected as the replacement. Changing and using data from the new system required an understanding of the relationship between salmon escapement estimates obtained from the 2 sonars. Although salmon estimates from the 2 sonars were shown to be equivalent in a clear river ground-truth study, in the larger, more turbid rivers where the echo counters were used, the relationship between estimates from the 2 sonar systems was site-specific. At most sites, DIDSON estimates were either higher than the echo counter or very similar. Because of the DIDSON's larger beam, better target resolution, and ability to subtract bottom echoes, salmon estimates from this system should be closer to the true migrating salmon populations. **Environmental differences between sites helped explain the variation and bias observed between the 2 technologies and show why the groundtruth study was not transferrable to the new sites.**”



Results of this side-by-side study in the Kenai River were:

“Ratios of DIDSON and echo-counter estimates were not similar to a ratio of 1.0, nor were they the same between the north and south banks, with overall ratios of 1.59 from north bank and 1.25 from south bank and annual ratios varying from 1.41–1.78 for north bank and 1.20–1.30 for south bank (Table 3). More fish were estimated by the DIDSON than the echo counter during each year along both sides of the river. The north-bank echo counter estimated a total of 1,632,227 fish during the comparison study, the DIDSON 2,600,687 fish for an overall difference of 968,460 fish; with a south-bank estimate of 2,562,056 fish (echo counter) and 3,209,661 fish (DIDSON) for an overall difference of 647,605 fish.”

Discussion includes:

“The 1:1 ratio between echo-counter and DIDSON counts of migrating salmon observed at the Wood River (Maxwell and Gove 2007) was not observed at the Kenai River, nor was the relationship between the 2 sonars the same for both banks. The divergence between counts was greater along the north bank. Because of the advantages of the DIDSON over the echo counter, our conclusion is that the echo counter has been underestimating salmon on both sides of the Kenai River, but the relative consistency between regression slopes (Figures 35 and 37) and annual ratios (Table 3) suggests that the echo counter provided a reasonable index of abundance at this site.

We observed more variation in the north-bank estimates. Confidence intervals for the slope and intercept were wider (Table 5), regression lines were more variable between years (Figures 35 and 37), as were the annual ratios (Table 3).

There are many environmental differences between the north and south banks of the Kenai River including river bottom topography, current speed, and water depth. The assumptions used when designing the echo counter have been addressed by other studies.

The 2 sonar systems differ markedly in their design and capabilities. There are several differences between the 2 systems that could account for the variation between salmon estimates. The most plausible explanation for the variation in the south-bank estimates is the larger water column, with fish swimming over the beam. Knowing the vertical distribution at this site would confirm whether or not this is true. The most plausible explanation for the differences in the north-bank estimates is the image resolution of the 2 sonars, which is compromised for the echocounter because of the longer range ensonified. The longer range coupled with high density schools passing at close range add to the complexity of assessing fish at this site. The higher bias at this site is likely due to the difficulty operators have in distinguishing and counting

voltage spikes during the calibrations, and higher variation may in part be due to differences between operators.

The historical echo-counter estimates were converted to DIDSON equivalents using the regression coefficients (Table 5) applied to the square root of the historical data, and then squaring the predicted estimates. The predicted estimates were then apportioned using the fish wheel data (Westerman and Willette (2006, 2007a, 2007b, 2010a), and error bounds were determined for the estimates. Over the 28 years of annual estimates, the 2 estimates differed by an overall average of 347,534 fish per year, an average ratio of 1.42, with DIDSON estimates higher than echo-counter estimates (Table 10). The largest deviation between the 2 estimates occurred in 1989 when predicted DIDSON estimates were 695,573 fish higher than echo-counter estimates; the smallest deviation was in 1979 with a difference of 129,122 fish (Table 10). The average CV across all historical years was 0.016. The annual historical estimates were substantially smaller than the predicted DIDSON estimates, and the error bounds were barely visible on the scale of the data (Figure 40). During the historical years, the bank preference of migrating salmon shifted between banks, but the average favored the north bank (north/south ratio of 1.24).” (Maxwell, Faulkner, Fair and Zhang, 2011).

There are eight issues that need pointing out:

- (1) The historical Bendix counts had up to a  $\pm 20\%$  error estimate. This error estimate was determined by internal calibration comparisons and independent control studies above RM 19.5. The Bendix-derived fish counts were always considered an index of salmon passage. The  $\pm 20\%$  Bendix error estimate, in part, explains the wide range in the escapement goals. The  $\pm 20\%$  error was acceptable for management purposes.
- (2) Lack of calibration of Bendix systems across the historic Bendix derived salmon enumerations. The calibration accuracy and frequencies during the side-by-side comparisons was not the same as during the prior 30 years.
- (3) In the Kvichak, Kasilof and Copper Rivers, the Bendix-DIDSON comparisons were close to 1:1. Why in the Kenai River is the side-by-side comparison so different?
- (4) During the side-by-side comparative experiment, there was NO independent assessments made as to the real-actual numbers of fish. It was **assumed** that the DIDSON equipment was 100% accurate at counting targets, or fish.

- (5) The historic Bendix counts were published, right down to the individual spawner. These historic Bendix-derived spawner counts were meant to be an index, not the actual count of fish.
- (6) The Bendix to DIDSON correction factors were applied to the daily passage rates for the prior 30 years. Based on a three-year bendix-DIDSON comparison, brood tables were retrospectively adjusted for the prior 30 years. These retrospective adjustments amount to hundreds of thousands of salmon. The biological-economic-social aspects of this retrospective adjustment is a big deal. Hundreds of thousands fo salmon were added into the management scenarios.
- (7) The x1.4 retrospective expansion factor was directly applied to the escapement goals.
- (8) In the last decade, there have been NO follow-up studies done to assess the accuracy or consistency of the DIDSON-derived enumerations.

## XVI. General Discussion

UCIDA chooses to combine several topics into one presentaion. These discussion topics are organized around the issues presented earlier.

### 1. Review of Assumptions

The Introduction on page one lists 7 assumptions:

- A. Independent spawning events, year-to-year. Spawning events and subsequent progeny do interact with each other and prior years' fry. In the KR and the KAsR, clearly the annual spawning events are not independent. Both prior and successive progenies are interacting. The exact energetics, biological, predatory or competitive nature of these interacting broods are evident but remain largely unknown. The mechanisms for these brood interactions have been examined by some ADFG staff, past and present. There remains much to be done in order to have a better understanding of these issues for all salmon stocks natal to UCI. In the present Alaskan budgetary environment, future research is unlikely.

All the spawning and predictive models that fail to incorporate brood interactions are doomed to providing misleading estimates. Both spawning and return estimates will have unreliable and high return predictions.

- B. Mathematical relationship between spawners, eggs, fry, smolt and returning adults. There is a huge mortality of 98.77% up to 99.83%, from eggs to either 4 million or 3 million returning adults. The mortalities across the KR and KasR salmon life-cycle are poorly understood.
- C. Food – quantity, quality, temporal and spacial distribution and size is understandable and somewhat constant.  
There are no life-cycle longitudinal food studies for any of these salmon stocks that occur in UCI. There are some isolated, unconnected salmon dietary studies for salmon natal to UCI.
- D. Parasites, disease, virus and bacterial effects are known and constant (no thresholds).  
The mortality, growth limiting vectors, are poorly understood in the salmon stocks natal to UCI. By in large because these vectors have had little assessments and monitoring. This is especially true of the wild, natal stocks. A substantial portion of the research, assessments and monitoring is conducted by CIAA.

- E. Thresholds – In the last decade, CIAA has discovered and verified new diseases never before identified in UCI stocks. Additionally, there are significant elodea and northern pike population expansions in UCI. Many of these newly discovered plants and diseases are now occurring and expanding distributions with the fore mentioned forcing, perturbation and stochastic events.
- F. Predator-Prey complexes are understood and or constant.  
There are at least 5 historical salmon producing lakes that have no salmon populations. Salmon populations occur in over a thousand lakes, rivers and aquatic areas in UCI. The state has expended limited management response and limited resources to address this issue in Northern UCI water bodies. The State of Alaska has severe budgetary restrictions. These budgetary issues will continue for an unspecified number of years.
- G. Forcing Functions and Perturbations: ecosystem stability has had no forcing functions or random perturbations.

UCIDA is of the opinion that global warming is a forcing function on such a grand scale that the human experience is powerless to change them, even if we wished.

UCIDA is of the opinion that perturbation events such as the ‘Blob’ and now the ‘Blob 2’ are a part of our human and environmental conditions. We might, in the short term, define management responses. This does not include human management of avoidances, but how to accommodate this perturbation. As resource managers, how do we move into the future? It is an open question as to whether the Blobs will be the new normal and change into a forcing function.

- H. Stochastic: ecosystem stability may have stochastic changes that have no, or a minor, effect.  
The UCI watershed has had hundreds of square miles experiencing spruce bark beetle infestation and forest fires. This is especially true in the last 2 decades. Entire watersheds have been changed from climatic to an earlier ecological state. The changes to earlier ecological serial stages have and will change aquatic populations, production, food chains and food webs. The stochastic events have and will affect UCI salmon productions. How do we move forward? What are the correct management responses?

## 2. Escapement Goals and Data

In this paper, UCIDA put into the public record the following:

- A. The Bendix derived enumeration numbers have a  $\pm 20\%$  error estimates.

- B. There is no reliable mathematical or statistical transformation to correct this  $\pm$  variance in the Bendix estimates or 'fish counts'.
- C. The Bendix derived fish counts are reported to the single fish, giving a representation of accuracy that simply does not exist.
- D. There is no reliable understanding of the distribution of the  $\pm$  20% variance across hours, days, years or passage rates.
- E. The DIDSON derived passage estimates have not had an independent assessment as to the accuracy of passage over time or accuracy of passage density.
- F. The DIDSON produced hourly estimates of fish passage rates, however, the hourly rates were combined to arrive at the daily passage rate. No internal verification occurred concerning these hourly to daily passage rates.
- G. The Markov Table, by using 100,000 fish increments, does provide up to a 100,000 fish variance estimate.
- H. None of the escapement goal methodologies consider the actual imperical date:
  - Declining sockeye MEFL of 15-20%
  - Declining sockeye weight of 15-20%
  - August entry pattern of 60% for KRLRS
  - Degraded fish quality, including the presence of surface infected areas associated with scale loss and mushy, gray colored flesh.

### 3. Biological Issues

Some of these issues are directly linked to anthropogenic management decisions, practices and policies. The specific issues put forward included:

- A. Over the past decade, the sockeye in UCI are shorter in length by 15-20%.
- B. UCI sockeye salmon weights have decreased by 1 lb per sockeye. See economic discussion for significance.
- C. An August portion of the KRLRS have gray-colored, mushy flesh. The eggs in these fish remain undeveloped and are noticeably smaller than usual. See economic discussion for significance.

- D. The UCI sockeye runs start in late June and continue through late August, 60 days, which reduces the overall densities of fish which has caused the annual and daily CPUE to be reduced to a marginal economic performance.
- E. In 9 of the last 10 years, escapement goals were grossly exceeded. This has caused marginally fit and marginally developed smolt. They, in turn, cause marginally fit adults, both in quality and quantity. There are 3 effects of exceeding escapement goals:
- Reduced harvestable and saleable biomass
  - Some age classes are returning in very low numbers, such as the 2012-2013 brood years
  - Spawner recruit ratios of 1.1-1.2 returning adults per spawner
- F. Mortality rate of 99% in 'Adult to Fry to Smolt to Adult'
- G. The following models may be utilized:
- Ricker-spawner recruit analysis – This model was first introduced in Ricker (1954) where it was used to model stock dynamics and recruitment in fisheries. The model is similar to (in terms of formulization and dynamical behavior) and inspired by the logistic growth equation. Consequently, it is somewhat more realistic and “safer” to use.
  - Markov table(s)
  - Beverton-Holt model – The Beverton-Holt model is a classic discrete-time population model which gives the expected number or density of individuals in a generation as a function of the number of individuals in the previous generation.
  - KRLRS Brood interaction models developed by the Soldotna ADFG Office
  - Percentile techniques and analysis developed by ADFG
  - In order to use the Percentile Technique, a fishery or stock complex must have a minimum of a 40% exploitation rate.
  - A fishery stock or complex must have the following minimum of spawning salmon:
    - Chinook: 1,000
    - Sockeye: 20,000
    - Coho: 10,000
    - Chum: 20,000
    - Pink: 50,000

#### 4. Optimum Yield (OY)

- A. Optimum Yield – NOAA Fisheries Glossary, page 34. The harvest level for a species that achieves the greatest overall benefits, including economic, social, and biological considerations. Optimum yield is different from MSY in that MSY considers primarily the

biology of the species. The term includes both commercial and sport yields; 2. The amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems. MSY constitutes a “ceiling” for OY. OY may be lower than MSY, depending on relevant economic, social, or ecological factors. In the case of an overfished fishery, OY should provide for the rebuilding of the stock to  $B_{MSY}$ ;

- B. Optimum Yield. Magnuson-Stevens Act section (3)(33) defines “optimum,” with respect to the yield from a fishery, as the amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems; that is prescribed on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery.
- C. The number of spawning salmon that will result, on average, the maximum returns in a fishery or stock complex;
- D. spawning ranges will be at 85% to 100% of MSY spawning goal (UCIDA Proposal);
- E. spawning goals will be assessed in season on a weekly, monthly and seasonal basis (UCIDA Proposal);
- F. spawning goals will be utilized when there are competing MSY spawning goals;
- G. spawning goals may be developed when the quantity or quality of the data in a fishery or stock complex is based on the recommendation of the EGC or SAC;
- H. spawning goals, when recommended, may be utilized for a period of time not to exceed 5 years (UCIDA Proposal);
- I. spawning goals will be developed using as guides:
  - Applying Eco-Based Fishery Management Policy 0-120
  - Incorporate Advisory Committee and Escapement Goal Committee local knowledge
  - Ricker-spawner recruit analysis
  - Markov table(s)
  - Beverton-Holt model
  - KRLRS Brood interaction models
- J. Percentile techniques and analysis
  - In order to use the Percentile Technique, a fishery or stock complex must have a minimum of a 40% exploitation rate.



- A fishery stock or complex must have the following minimum of spawning salmon:
  - Chinook: 2,000
  - Sockeye: 20,000
  - Coho: 20,000
  - Chum: 20,000
  - Pink: 50,000

## 5. Annual Catch Limit (ACL)

### A. Definitions - The following definitions were taken from the NOAA Fisheries Glossary, 2006 Revised Edition

- Catch- page 5  
To undertake any activity that results in taking fish out of its environment dead or alive. To bring fish on board a vessel [or on shore] dead or alive; 2. The total number (or weight) of fish caught by fishing operations. Catch should include all fish killed by the act of fishing, not just those landed; 3. The component of fish encountering fishing gear, which is retained by the gear [drop-outs, break-offs].
- Acceptable Biological Catch – page 1  
A scientific calculation of the sustainable harvest level for a species or species group, and is used to set the upper limit on the range of potential annual total allowable catch (TAC).
- Annual Total Mortality (Rate) – page 2  
The rate of death, usually in terms of a percentage of fish dying from a population in one year, due to both fishing and natural causes; 2. The ratio of the number of fish which die during a year divided by the number alive at the beginning of that year.
- Carrying Capacity – page 5  
The maximum population of a species that an area or specific ecosystem can support indefinitely without deterioration of the character and quality of the resource; 2. The level of use, at a given level of management, at which a natural or man-made resource can sustain itself over a long period of time. For example, the maximum level of recreational use, in terms of numbers of people and types of activity that can be accommodated before the ecological value of the area declines.
- Limit Reference Points – page 25  
Benchmarks used to indicate when harvests should be constrained substantially so that the stock remains within safe biological limits. The probability of exceeding limits should be low. In the National Standard Guidelines, limits are referred to as thresholds. In much of the international literature (e.g. United Nations Food and Agricultural Organization, FAO) thresholds are used as buffer points that signal when a limit is being approached. (See National Standard Guidelines)
- Spawning numbers needed to maintain and not negatively affect the carrying capacity of a particular fishery or stock complex;
- spawning goals will may be utilized when there are competing MSY spawning goals;

- yields (harvests) will be in the 50% to 70% range of estimated MSY/OY;
- yields will occur so that underutilization or overfishing do not occur;
- the necessary scientific data need to establish MSY or OY spawning goals is weak, sporadic non-existent;
- may utilize catch per unit effort(s) or proxy modeling between fisheries, stock complex(es) or species.

## 6. Guideline Harvest Level (GHL)

### A. Definitions taken from NOAA Fisheries Glossary

- Harvest Guideline – page 21  
A numerical harvest level that is a general objective, but not a quota. Attainment of a harvest guideline does not require a management response, but does prompt review of a fishery.
- Quota – page 39  
A specified numerical harvest objective, the attainment (or expected attainment) of which causes closure of the fishery for that species or species group.
- Catch Per Unit (of) Effort (CPUE) – page 6  
The quantity of fish caught (in number or in weight) with one standard unit of fishing effort; e.g. [number or salmon caught per 12 hour fishing period per one standard length of gillnet,] number of fish taken per 1,000 hooks per day or weight of fish, in tons, taken per hour of trawling. CPUE is often considered an index of fish biomass (or abundance). Sometimes referred to as catch rate. CPUE may be used as a measure of economic efficiency of fishing as well as an index of fish abundance. Also called: catch per effort, fishing success, availability.
- Results in the number of spawning salmon that will result in yields and protect against underutilization and over fishing in a fishery or stock complex.
- Are developed due to lack of enumeration(s), data on run timing, run strength, spatial or temporal information.
- Spawning numbers and yields will be achieved through the use of CPUE's [and indexes].
- Spawning numbers and yields will be achieved by maintaining a 30% to 70% exploitation rate(s).

## 7. Economic and Social Consideration

- A. The economic impact of salmon that have a smaller MEFL and less weight at age is, in our opinion, economically devastating. Three million sockeye averaging 1 lb less per fish equates to a loss of \$12,000,000 annually for the commercial fishing industry. The

absence of the sockeye salmon over 6 lbs has taken Cook Inlet out of the premium market. Now, UCI sockeye are competing with the marketplace where 3-5 and 4-6 lb sockeye are plentiful. Cook Inlet has lost the premium market position.

- B. The August component of the sockeye harvest no longer are graded #1; now it's mostly #2 and dog food grades. Annually, the August sockeye component costs the industry in excess of \$2 million.
- C. The smaller sockeye and lower grade sockeye cost the industry \$14 million annually. Historically, UCI salmon were of premium size and quality worth 50-75¢ more per pound than Bristol Bay. This diminished sockeye size and quality has had negative effects on Chinook, Chums, Pinks, and Silvers, even though the size and quality issue was less pronounced. This \$14 million in diminished economic activity spill over into the retail, transportation, local, state and national taxes paid. Crew members, process workers and labor markets become less attractive making the hiring of entry-level labor much more difficult. Capital investments are restructured and redirected. These costs are real and difficult to quantify.
- D. Tables 16A and 16B provide the total ex-vessel value, adjusted for inflation value and the first wholesale value of all salmon harvested by the UCI commercial salmon industry, 1960-2018. The ex-vessel total values were normalized by using the US Inflation Calculator found at [www.usinflationcalculator.com](http://www.usinflationcalculator.com), published by the US Dept. of Commerce. The ex-vessel total values are the result of lbs of salmon sold at a given price per pound. In the 2000-2009 decade, salmon prices were severely depressed.

**Table 16A. Approximate exvessel value of UCI commercial salmon harvest, 1960-2018**

<b>58 Years - Totals &amp; Averages - Exvessel Values 1960-2017 - Drift &amp; Set</b>				
Year	Total	2018 Value	First Wholesale	Historic Events
1960	2,787,000	23,727,727	47,455,454	<i>ADFG Management Begins</i>
1961	2,125,000	17,910,125	35,820,250	
1962	3,981,000	32,219,731	64,439,462	
1963	1,919,000	15,803,906	31,607,812	
1964	3,678,000	29,899,293	59,798,586	
1965	2,558,000	20,464,489	40,928,978	
1966	4,233,000	32,924,117	65,848,234	
1967	2,586,000	19,511,602	39,023,204	
1968	4,355,000	31,536,958	63,073,916	
1969	1,755,394	12,053,674	24,107,348	
1970	2,984,840	19,386,536	38,773,072	
1971	2,050,974	12,761,920	25,523,840	
1972	3,543,192	21,361,379	42,722,758	
1973	6,163,635	34,983,636	69,967,272	
1974	6,562,535	33,545,602	67,091,204	
1975	6,702,612	31,395,881	62,791,762	
1976	13,677,413	60,576,413	121,152,826	<i>MSA Passed &amp; Implemented</i>
1977	21,537,920	89,565,760	179,131,520	
1978	32,581,114	125,930,003	251,860,006	
1979	14,632,021	50,790,042	101,580,084	<i>Initial Alaska State FMP</i>
1980	12,871,810	39,366,181	78,732,362	
1981	18,448,596	51,145,840	102,291,680	
1982	31,437,716	82,098,374	164,196,748	
1983	29,360,152	74,286,490	148,572,980	
1984	17,335,160	42,045,855	84,091,710	
1985	34,359,478	177,260,685	354,521,370	
1986	46,430,522	106,758,851	213,517,702	
1987	101,099,156	224,274,594	448,549,188	
1988	122,177,017	260,264,931	520,529,862	
1989	59,174,188	120,260,084	240,520,168	
1990	40,671,938	78,420,600	156,841,200	<i>West Area FMP</i>
1991	15,242,649	28,202,929	56,405,858	
1992	100,068,258	179,741,991	359,483,982	
1993	30,026,815	52,366,349	104,732,698	
1994	34,453,264	58,585,892	117,171,784	
1995	22,014,944	36,403,530	72,807,060	
1996	29,712,117	47,722,318	95,444,636	
1997	32,394,427	50,863,448	101,726,896	
1998	8,685,145	13,427,660	26,855,320	
1999	20,975,713	31,728,724	63,457,448	
2000	8,147,307	11,932,172	23,864,344	
2001	7,732,881	11,009,787	22,019,574	
2002	11,643,925	16,635,071	33,270,142	
2003	12,875,310	17,633,996	35,267,992	
2004	20,701,093	27,616,726	55,233,452	
2005	31,677,341	40,874,961	81,749,922	
2006	13,904,377	17,380,855	34,761,710	
2007	23,423,367	28,423,064	56,846,128	
2008	16,696,717	19,543,029	39,086,058	
2009	14,573,854	17,119,185	34,238,370	
2010	33,168,113	38,332,188	76,664,376	
2011	53,121,708	59,513,864	119,027,728	
2012	34,955,955	38,368,208	76,736,416	
2013	40,241,970	43,532,574	87,065,148	
2014	35,079,504	37,342,210	74,684,420	
2015	24,164,211	25,692,360	51,384,720	
2016	22,384,437	23,503,437	47,006,874	
2017	23,838,446	24,508,124	49,016,248	
2018	9,124,911	9,124,911	18,249,822	<i>Lowest value since 1960 (59 yrs)</i>
<b>Total \$\$</b>	<b>1,384,808,142</b>	<b>2,979,660,842</b>	<b>5,959,321,684</b>	
<b>Average \$\$</b>	<b>23,471,324</b>	<b>50,502,726</b>	<b>101,005,452</b>	

Data Source: ADF&amp;G Annual Management Reports

<b>Table 16B. Economic Performance of UCI Salmon Fishery</b>			
<b>10-year Averages</b>			
<b>Years</b>	<b>Ex-Vessel</b>	<b>2018 Value</b>	<b>2018 First Wholesale</b>
1960-1969	2,997,739	23,605,162	47,210,324
1970-1979	11,043,626	48,029,717	96,059,434
1980-1989	47,269,379	117,776,189	235,552,377
1990-1999	33,424,527	57,746,344	115,492,688
2000-2009	16,137,617	20,816,885	41,633,769
2010-2018	29,065,311	33,324,208	66,648,417
			Source: ADFG

## 8. Maximum Sustainable Yield (MSY)

A. Definitions - The following definitions were taken from the NOAA Fisheries Glossary, 2006 Revised Edition, NFMS's Guidelines and National Standards Guidelines 50 CFR 600.305 et. seq.

- **Maximum Sustained Yield (MSY) – page 28**  
The largest average catch or yield that can continuously be taken from a stock under existing environmental conditions. For species with fluctuating recruitment, the maximum might be obtained by taking fewer fish in some years than in others. Also called: maximum equilibrium catch; maximum sustained yield; sustainable catch.
- **Sustainability – page 52**  
Ability to persist in the long-term. Often used as “short hand” for sustainable development; 2. Characteristic of resources that are managed so that the natural capital stock is non-declining through time, while production opportunities are maintained for the future.
- **Sustainable Catch (Yield) – page 52**  
The number (weight) of fish in a stock that can be taken by fishing without reducing the stock biomass from year to year, assuming that environmental conditions remain the same.
- **Sustainable Fishing – page 52**  
Fishing activities that do not cause or lead to undesirable changes in the biological and economic productivity, biological diversity, or ecosystem structure and functioning from one human generation to the next.
- **Sustainable Yield – page 53**  
Equilibrium yield; 2. The amount of biomass or the number of units that can be harvested currently in a fishery without compromising the ability of the population/ecosystem to regenerate itself.

## **XVII. Spawning Goals**

### 1. UCIDA Recommendations

- A. The number of spawning salmon that will result in the maximum yield, catch or harvest in a salmon fishery or stock complex.
- B. Spawning goal(s) ranges will be 90% to 100% of the MSY number of spawners needed, unless otherwise justified.
- C. Spawning goal ranges may be developed for index stock(s) or stock complex(es).
- D. Spawning goals will be assessed in season on a daily, weekly or seasonal schedule?
- E. Spawning goals may be developed by utilizing one or more of the following:
  - Applying Eco-Based Fishery Management Policy 0-120
  - Incorporate Advisory Committee and Escapement Goal Committee local knowledge
  - Ricker-spawner recruit analysis
  - Markov table(s)
  - Beverton-Holt model
  - KRLRS Brood interaction models
- F. Apply the Ecosystem-Based Fisheries Management Policy, 0-120, to the Salmon FMP.
- G. Strongly consider applying the Precautionary Principal to the setting of UCI Escapement Goals.
- H. Develop accountability and security measures in the event the managers violate or ignore the Salmon Fishery Management Plan instructions or provisions. Example: If the State is the on-site manager, posting of a \$100 million performance bond.
- I. Strongly encourage the creation of a standing salmon advisory committee to include multi-federal and state agencies, federal subsistence groups, commercial, recreational and local government officials.
- J. Strongly encourage an escapement goal committee including Federal and State agencies and UCI stakeholders. Preferable an 8 person committee.
- K. Establish interim escapement goals for UCI.

L. Adopt fishing sector ACL, GHL and Allocations. See Table 17.

M. Adopt fishing sector priorities, ACLs, GHs and Allocations.

<b>Table 17. Fishing Sector Priorities, Spawners, ACL's and GHL's</b>							
<b>Stock Complex</b>	<b>Commercial %</b>		<b>Recreational %</b>		<b>Subsistence %</b>		<b>ABC, ACL Yield %*</b>
<b>Stock Complex #1 May 1 thru June 20</b>	Chinook	50	Chinook	48	Chinook	2	Chinook 100
	Sockeye	50	Sockeye	48	Sockeye	2	Sockeye 100
	Coho	0	Coho	0	Coho	0	Coho 0
	Pink	0	Pink	0	Pink	0	Pink 0
	Chum	0	Chum	0	Chum	0	Chum 0
<b>Stock Complex #2 June 20 thru 15-Aug</b>	Chinook	48	Chinook	48	Chinook	4	Chinook 100
	Sockeye	85	Sockeye	14	Sockeye	1	Sockeye 100
	Coho	50	Coho	48	Coho	2	Coho 100
	Pink	95	Pink	3	Pink	2	Pink 100
	Chum	80	Chum	18	Chum	2	Chum 100
<b>Stock Complex #3 August 16 thru October 30</b>	Chinook	0	Chinook	0	Chinook	0	Chinook 0
	Sockeye	95	Sockeye	3	Sockeye	2	Sockeye 100
	Coho	50	Coho	49	Coho	1	Coho 100
	Pink	95	Pink	3	Pink	2	Pink 100
	Chum	95	Chum	5	Chum	0	Chum 100
<b>ABC - Annual Biological Catch</b> <b>ACL - Annual Catch Limit</b> <b>GHL - Guideline Harvest Level</b> <ul style="list-style-type: none"> <li>• The primary objective is to achieve MSY/OY spawning goals where established.</li> <li>• All percentages determined at Anchor Point line.</li> <li>• All percentages to be applied as Spawning Goals, ACL's or GHL's are met.</li> <li>• All percentages unique to inriver situations.</li> <li>• No intra-river transfers for recreational sector</li> </ul> * After MSY/OY spawning goals, ACL and GHL achieves spawning needs.							










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3. Maxwell, et al, A Comparison of Estimates from 2 Hydroacoustic Systems Used to Assess Sockeye Salmon Escapement in 5 Alaska Rivers, 2011, Fishery Manuscript Series No. 11-02.
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*Special Note: The Annual Management Reports from the last 20 years were also reviewed.*

# EXHIBIT Z

# Recent declines in salmon body size impact ecosystems and fisheries

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Declines in animal body sizes are widely reported and likely impact ecological interactions and ecosystem services. For harvested species subject to multiple stressors, limited understanding of the causes and consequences of size declines impedes prediction, prevention, and mitigation. We highlight widespread declines in Pacific salmon size based on 60 years of measurements from 12.5 million fish across Alaska, the last largely pristine North American salmon-producing region. Declines in salmon size, primarily resulting from shifting age structure, are associated with climate and competition at sea. Compared to salmon maturing before 1990, the reduced size of adult salmon after 2010 has potentially resulted in substantial losses to ecosystems and people; for Chinook salmon we estimated average per-fish reductions in egg production (−16%), nutrient transport (−28%), fisheries value (−21%), and meals for rural people (−26%). Downsizing of organisms is a global concern, and current trends may pose substantial risks for nature and people.

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Few organismal traits are as profoundly important as body size, given its role in reproductive fitness, physiology, demography, predator–prey dynamics, and value for human use<sup>1</sup>. Yet major selective forces such as climate change and harvest may be causing widespread declines in organismal body size<sup>2–5</sup>. Climate change has been linked to body size declines in many species<sup>2,3</sup>, including Soay sheep in Scotland<sup>6</sup>, aquatic ectotherms across Europe<sup>7</sup>, and migratory North American birds<sup>8</sup>. Harvest is also known to result in smaller body size<sup>5,9</sup>, for example, declines in body size and age-at-maturity preceded the collapse of Atlantic cod stocks off the eastern coast of Canada<sup>10</sup>. Understanding the causes of body size declines is daunting given the influence of numerous, potentially interacting factors. Individually or in unison, these underlying factors can influence body size through shifting population age structure, changing growth rates, or a combination thereof. Age truncation can compound the effects of body size on population productivity by increasing demographic variability in response to changing environments<sup>11</sup>. Body size declines influence species' demography<sup>4</sup> and trophic interactions<sup>12</sup> and may reduce the sustainable delivery of ecosystem services such as fisheries yield<sup>9</sup>.

Here, we examine changes in body size for four species of Pacific salmon (*Oncorhynchus* spp.), by assembling a 60-year (1957–2018) database of size and age measurements from 12.5 million individually-measured fish. The uniquely large spatial and temporal scale of our dataset enabled us to conduct one of the most comprehensive studies to quantify system-wide body size declines across multiple species and identify potential causal mechanisms, and one of the first studies to quantify ecological and socioeconomic consequences of those observed size declines. Our overarching goals were to understand the magnitude and consistency of size declines across regions and species, evaluate potential causes, and quantify the consequences of these changes for ecosystems and people.

Pacific salmon are integral ecosystem components and contribute to human well-being, primarily as sources of food security and cultural connection<sup>13,14</sup>. The annual return of salmon to their natal streams provides vital nutrient subsidies that support freshwater, riparian, and terrestrial ecosystems<sup>15</sup>. Alaska is widely considered a stronghold of intact, functioning salmon–people ecosystems, largely free of the factors that have severely depressed salmon abundances elsewhere, such as over-harvest, habitat-loss, net pen aquaculture (prohibited by law in Alaska), dams, and water diversion<sup>16</sup>. However, accumulating evidence from local and indigenous knowledge suggests that adult salmon body sizes are decreasing, including in Alaska where salmon provide critical support for ecosystems and people<sup>17–19</sup>, cf. ref. 20.

Serious consequences for ecosystems and people could result from salmon size declines. Smaller salmon transport less marine-derived nutrients and produce fewer offspring<sup>21,22</sup>. Smaller salmon could threaten food security in rural salmon-dependent communities, where diminished access to calorie-rich salmon directly influences well-being and human health<sup>13</sup>. From an economic perspective, smaller salmon translate to lost commercial fisheries profit due to reduced flesh recovery rates (proportionally more skin, viscera, and bones but less muscle), increased processing cost, and lower prices. In some cases, losses due to changing salmon size could be mitigated by increasing conspecific abundances for certain ecosystem services and species. However, the opportunity for mitigation will be limited for species like Chinook salmon that have generally experienced declines in abundance concurrent with size declines<sup>23</sup> or for ecosystem services for which abundance cannot replace size. For example, recreational anglers highly value catching large fish, which influences decisions on fishing trip destinations<sup>24</sup>. In addition, abundant species like sockeye and pink salmon cannot

replace many ecosystem services provided by Chinook salmon because Chinook salmon generally have much greater migration distances, fat content, and cultural importance. For salmon in Alaska, the extent to which body size is changing across species and regions, the causes of size changes, and the consequences for nature and people are poorly known.

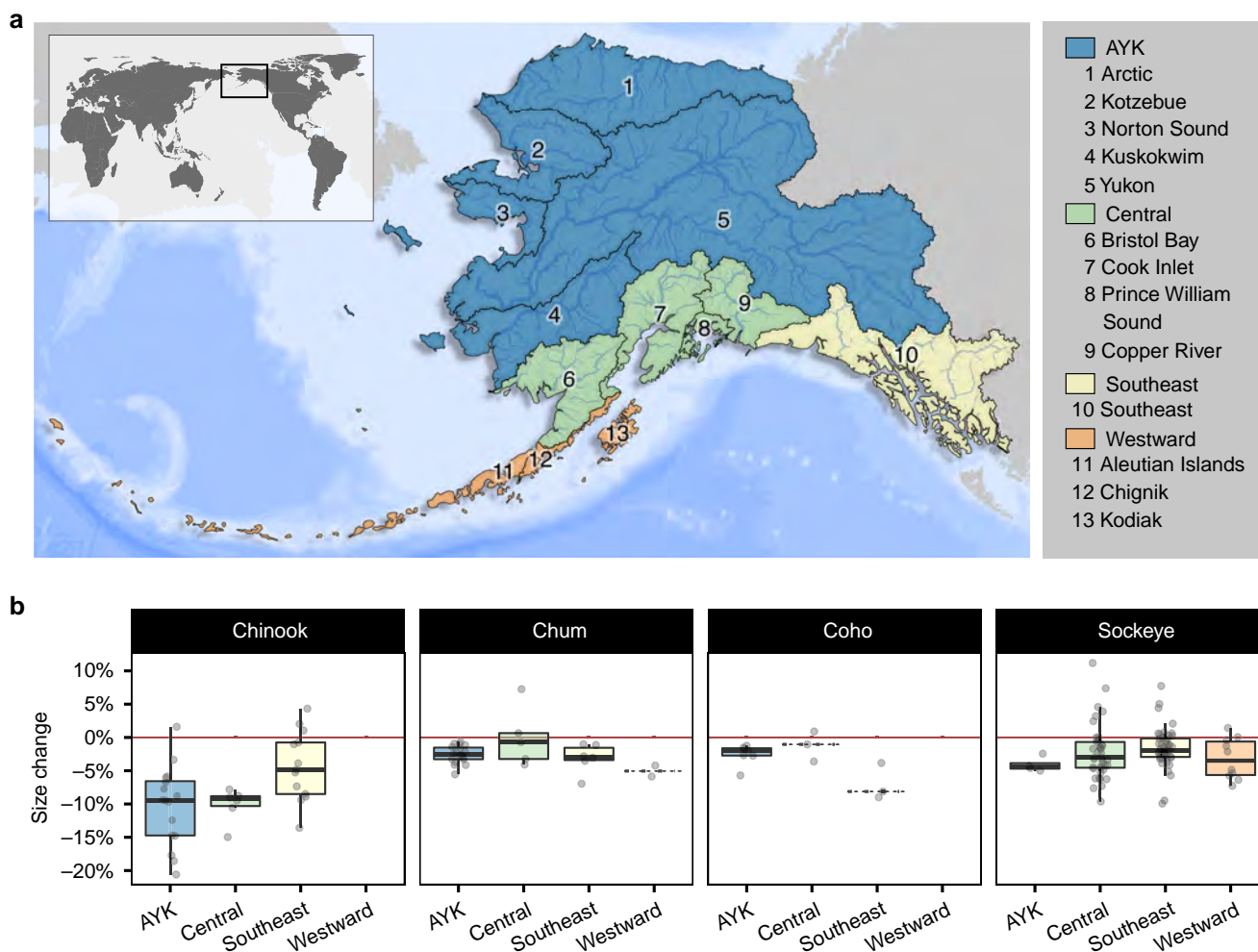
We synthesize patterns of salmon body size change across the state of Alaska for Chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), coho (*O. kisutch*), and sockeye salmon (*O. nerka*). While previous studies have documented changes in size and age in Pacific salmon<sup>17,18,20</sup>, our investigation across species, decades, and locations allows a uniquely comprehensive analysis of consistency in trends, causes, and consequences of those changes at an unprecedented spatial and temporal scale. Our analysis is based on six decades of salmon size and age measurements collected by the Alaska Department of Fish and Game from 1014 sampling locations across Alaska's diverse landscapes—from temperate rainforests to Arctic ecosystems.

We show that body size has declined significantly across Pacific salmon species in Alaska, but that the rate of change has not been constant over time. Changing age structure (younger age-at-maturity) consistently explains a greater proportion of overall size changes than do changing growth rates (smaller size-at-age); salmon are getting smaller primarily because they are returning to reproduce at a younger age than they did in the past. Climate change and competition with highly abundant wild and hatchery-produced salmon appear to be widespread drivers of size declines. We found limited evidence for a widespread role of size-selective harvest. The consequences of these changes for ecosystems and people are widespread: size declines are likely causing decreases in key ecological processes and human uses, including per-capita egg production, marine-derived nutrient subsidies, rural food security, and commercial value for harvesters.

## Results

**Consistency in salmon size declines.** In all four salmon species, average body sizes were smaller after 2010 compared to before 1990 (the earliest baseline with sufficient data, Fig. 1). Comparing mean body length pre-1990 to mean body length post-2010, Chinook salmon exhibited the greatest magnitude decline, averaging an 8.0% decline in body length, compared to 3.3% in coho salmon, 2.4% in chum salmon, and 2.1% in sockeye salmon. Within species, the magnitude of declines varied among regions and populations (Fig. 1). For example, Chinook salmon populations in Westward Alaska and Arctic–Yukon–Kuskokwim declined by 10% on average, whereas conspecifics in Southeast Alaska declined by 4%.

General additive models (GAMs) confirmed that average sizes declined through time in each species (nonlinear year effect for each species  $p < 0.0001$ ,  $R^2 = 0.453, 0.621, 0.687, 0.784$  for Chinook, sockeye, coho, and chum salmon respectively, Fig. 2a), although the common (among location) pattern in average size across time differed between species. To evaluate whether there was greater support for species-specific nonlinear year effects through time, or a single shared temporal pattern, we fit competing GAMs to mean-variance standardized length observations from each location. Inclusion of species-specific nonlinear year effects explained much more variance ( $R^2 = 0.80$ ) compared to a single shared (i.e., shared among species) nonlinear year effect ( $R^2 = 0.04$ ). This result was confirmed by fitting an additional model that included both the common and species-specific nonlinear year effects, in which species-specific trends were significant ( $p < 0.0001$ ) while the common trend was not ( $p = 0.3$ ). All species are declining in body size but patterns of decline differ among species, thus species-specific trends were analyzed and are discussed separately.



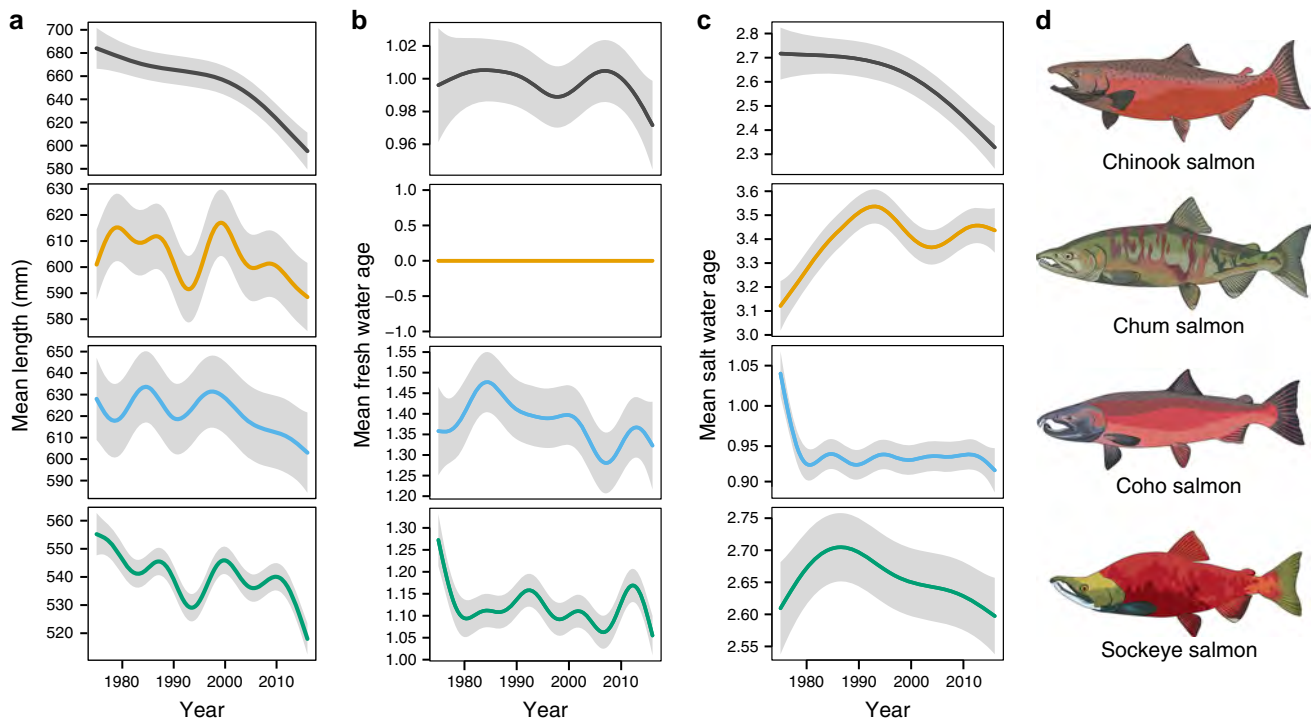
**Fig. 1** Across Alaska, average salmon body size has gotten smaller. On average, salmon body size was smaller post-2010 compared with pre-1990 across all areas and species examined. **a** Map of sampling area with regions numbered and colored by Alaska Department of Fish and Game management area. Our analyses included data from all regions shown except Arctic. **b** Boxplots show percent change in mean length between data collected before 1990 and after 2010. Points show change in mean length for individual populations. Red line indicates no change. Center line represents the median, box limits represent the upper and lower quartiles, whiskers represent the 1.5 $\times$  interquartile range. Only populations for which we had data in both periods were included (100 sockeye, 34 Chinook, 32 chum, and 13 coho salmon populations). If sufficient data were available for three or fewer populations, the box was replaced by a gray dashed line at the median. AYK represents the Arctic-Yukon-Kuskokwim management area. Sample sizes are presented in Supplementary Data 4.

Within each species, size trends were nonlinear (effective degrees of freedom = 3.75 for Chinook, 8.86 for chum, 7.78 for coho, and 8.81 for sockeye salmon; Fig. 2a) and included several periods of increasing and decreasing size. Separate species-specific models (Fig. 2a) revealed similarities among sockeye, chum, and coho salmon, including shared size declines starting in the mid-1980s followed by recovery in the early-1990s. These three species all showed an abrupt decline in body size starting in 2000 and intensifying after 2010. Size declines were more linear in Chinook salmon than in other species, but the rate of decline also accelerated after 2000.

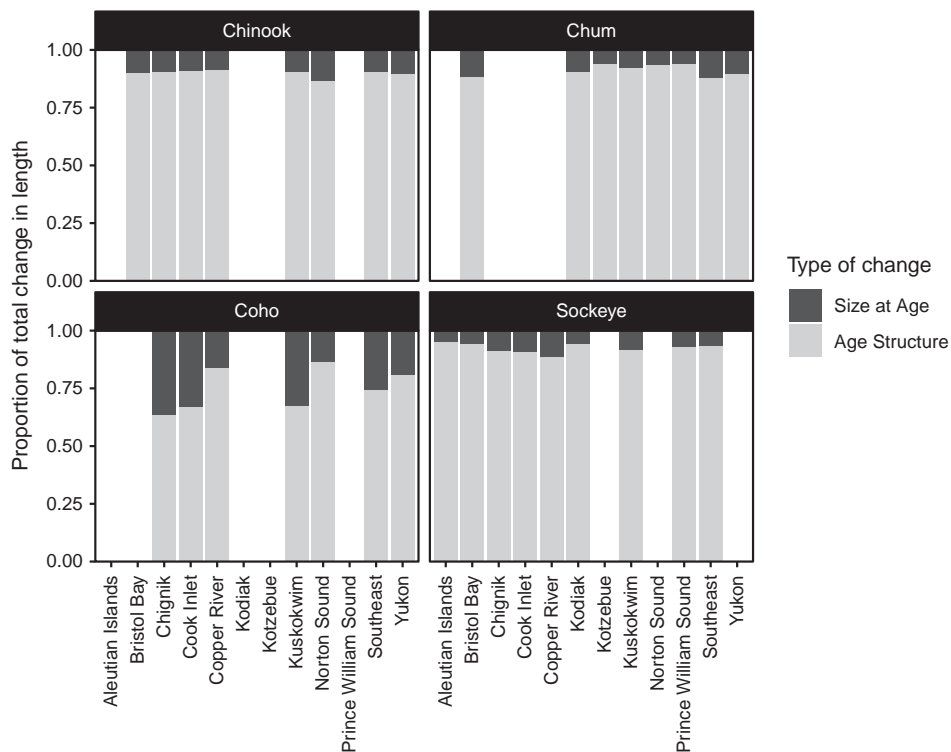
Comparing model fits for GAMs that incorporate regional- and population-level trends revealed that Chinook and coho salmon exhibit high spatial variation in patterns of body size change, best explained by population-specific nonlinear year effects. In contrast, sockeye and chum salmon populations exhibited less spatial variability, which was best explained by regional-level patterns (Supplementary Table S1).

**Contributions of declining age versus growth.** Across species, shifts in age structure explained 88% of interannual variation in mean size on average (Fig. 3). In general, salmon are currently smaller than in the past because adults are returning to spawn at younger ages (Fig. 2). Changing size-at-age (Supplementary Fig. S1), which might result from decreased growth, explained a greater proportion of size change in coho salmon (20% on average) than in other species (7.4% in Chinook salmon, 7.1% in chum salmon, 5.9% in sockeye salmon), yet across all species and regions the contribution of changing size-at-age to declines in body sizes was less important than that of changing age structure.

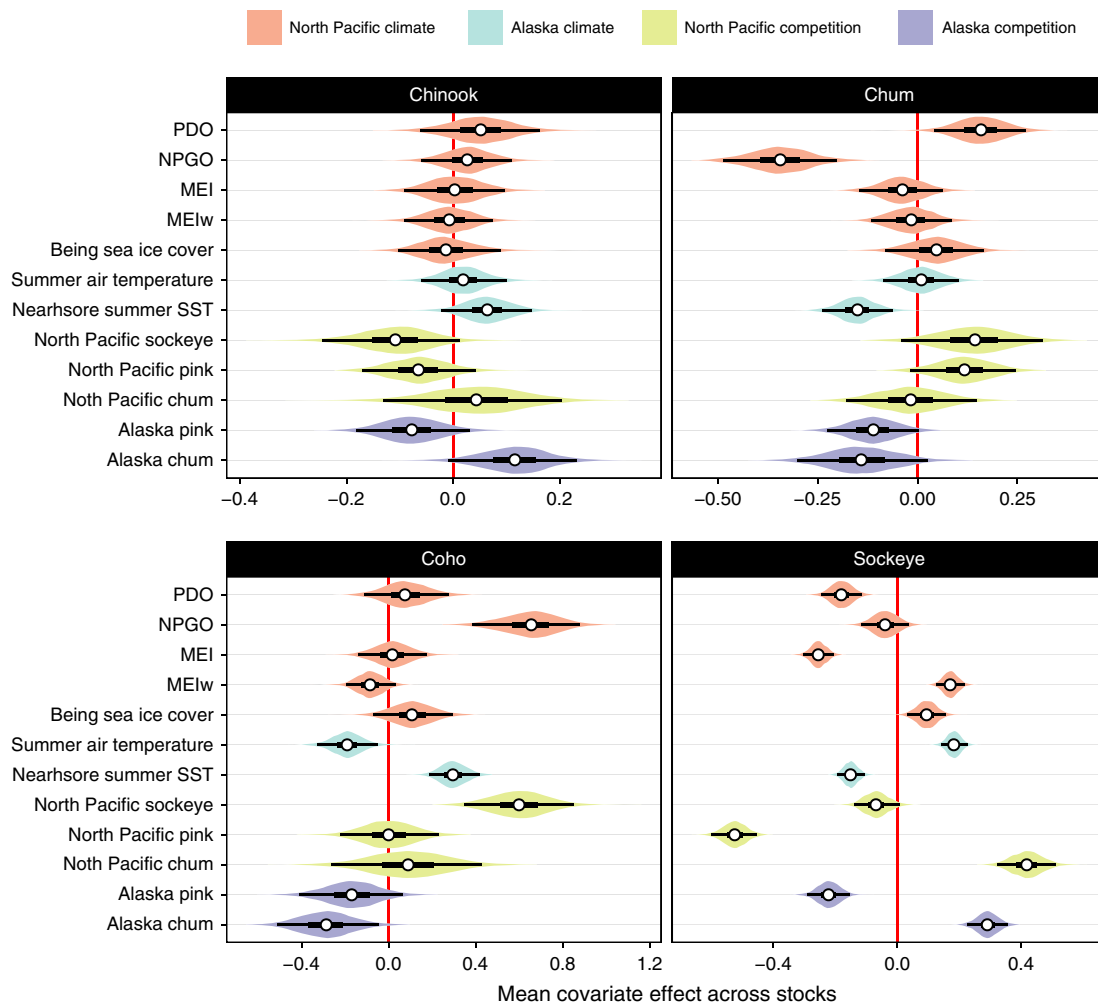
**Causes of salmon size declines.** Both environmental change and increased competition at sea with highly abundant wild and hatchery salmon could result in body size declines through reductions in the availability or quality of food resources<sup>18,20</sup>. Climate warming might also reduce ectotherm body size by increasing metabolic and developmental rates<sup>2</sup>. Finally, all of



**Fig. 2 Body size declines are significant and nonlinear.** **a** Mean fish length has changed in a nonlinear pattern, as demonstrated by the nonlinear year effect from GAMs on mean population length with fixed effects of region and population. **b** Mean freshwater age (in years) has generally declined, except for chum salmon, which leave freshwater shortly after emergence. **c** Mean saltwater age (in years) has also generally declined, except in chum salmon, which increased in saltwater age until around 1990, then decreased. Plots are conditioned on reference populations with the longest time series for each species, but the pattern plotted is the common pattern through time calculated for all populations. Gray areas represent 95% confidence intervals for the nonlinear year effect. **d** Male salmon in spawning coloration. Sample sizes are presented in Supplementary Data 5.



**Fig. 3 Body size declines result primarily from shifting age structure.** Changes in population mean length are primarily due to changing age composition (gray) and to a much lesser extent changing size-at-age (black). For each population the mean among-year contribution was calculated, then region means calculated from population-level means. Sample sizes are presented in Supplementary Data 6.



**Fig. 4 Climate and competition influence salmon body size.** Effects of climate and competition proxies (detailed in Methods, MEIw is winter MEI) on body size varied among species, as estimated by hierarchical Bayesian models describing length–environment relationships. Posterior probability distributions (in color) for estimated species-specific (group) mean effects of climate and competition covariates across locations. Posterior medians, 50% and 95% credible intervals are described by the white point, thick and thin black lines. Negative effects indicate high values of a covariate are correlated with smaller salmon body size on average across locations in Alaska. See Supplementary Fig. S4 for population-specific covariate effect estimates. Sample sizes are presented in Supplementary Data 7.

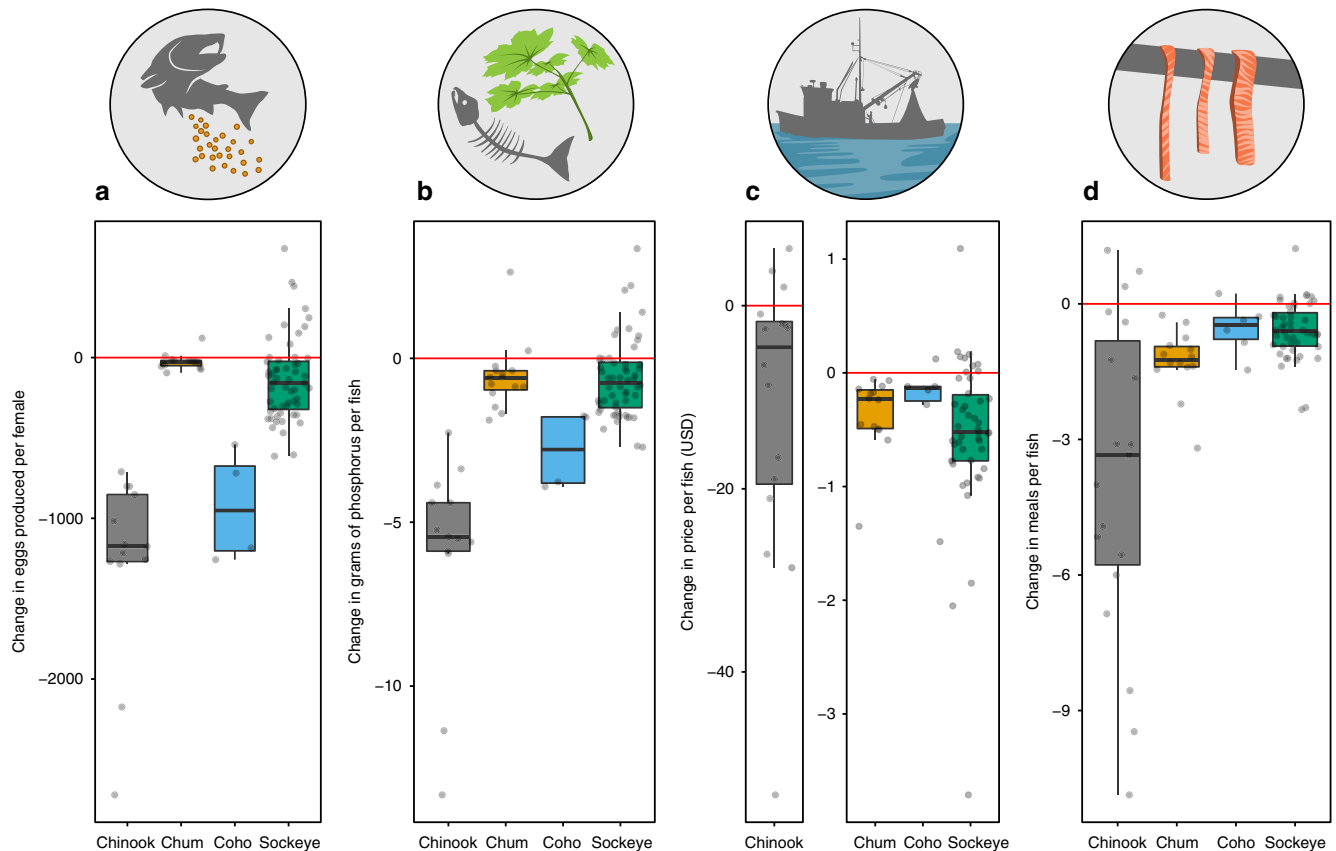
these environmental factors could result in increased natural mortality in the ocean, leading to reduced average age-at-return to freshwater.

To evaluate the hypothesized effects of climate and competition at sea (Supplementary Figs. S2, S3), we fit hierarchical Bayesian models estimating the association between temporal trends in location-specific salmon size and a range of environmental covariates, while also estimating a nonlinear year effect describing temporal trends in length that were common across populations but not explained by covariates. After accounting for absolute body size differences among populations, our ability to explain changes in body size ranged from a Bayesian<sup>25</sup>  $R^2$  of 0.28 in sockeye salmon, 0.29 in chinook salmon, 0.35 in chum salmon, to 0.48 in coho salmon.

Multiple factors with small individual effects were associated with body size declines (Fig. 4). Although the relative importance of each metric differed among species (Fig. 4) and populations (Supplementary Fig. S4), at least one climate metric and one competition metric were important for each species. Only Alaskan pink salmon abundance had a negative association with body size across all species, but the negative association was weak in all cases except sockeye salmon. Some factors emerged as

particularly important for individual species. For sockeye salmon, North Pacific pink salmon abundance had a particularly strong negative association with body size. For chum salmon, a strong negative association with the North Pacific Gyre Oscillation (NPGO) contrasted with a similarly strong positive association for coho salmon. No single factor was a particularly important predictor of body size in chinook salmon; instead many factors had moderate contributions to body size change. After controlling for covariate effects, each species-specific model included a common residual trend that showed overall decline in salmon size across time (Supplementary Fig. S6). This result suggests that salmon might be responding to one or more physical or biological drivers that were not included among the environmental covariates explored.

Metabolic effects of temperature on size<sup>26</sup> do not appear to be driving body size changes in Alaska salmon (see Supplementary Methods section “Metabolic effects of temperature on size”). Relationships between salmon body size and temperature did not fit the predictions of the metabolic theory of ecology<sup>26</sup>. Rather, the variable influence of climate drivers suggests that the impact of climate on salmon body size is species-specific and to a lesser extent location-specific



**Fig. 5 Size declines could result in negative consequences for ecosystems and people.** Salmon body size declines over the past 30 years have negative consequences for **a** fecundity, **b** nutrient transport, **c** commercial fishery value, and **d** rural food security. We estimated the difference in ecosystem services provided by an average salmon before 1990 versus after 2010, by converting change in mass to change in services provided. A meal is the species-specific average reported meal size in grams reported by subsistence users from two villages in nearby Yukon Territory, Canada, see Methods for details. Each gray point represents an estimate for an individual population. The red line represents no change in ecosystems services provided by each fish. Center line represents the median, box limits represent the upper and lower quantiles, whiskers represent the 1.5 $\times$  interquartile range. Sample sizes are presented in Supplementary Data 4.

(see Supplementary Fig. S4), perhaps occurring through climate-mediated changes in food availability or quality. A similarly variable relationship between temperature and body size across species was recently uncovered in a large-scale analysis of size trends in Australian reef fishes<sup>27</sup>.

Due to limited data availability, we investigated the effects of average harvest rate on long-term body length change in a separate analysis on the subset of populations for which we had sufficient harvest information. We expected that if fisheries-induced size structure truncation, or evolution, contributed to size declines, populations subjected to higher rates of size-selective harvest would show greater magnitude declines<sup>28</sup>. We tested this hypothesis using 33 populations (25 sockeye and eight Chinook) with sufficient data to rigorously calculate harvest rate. Counter to expectations, we detected no significant relationship between harvest rate and change in body size among populations (Supplementary Fig. S5,  $R^2 = 0.02$ ,  $F_{1,30} = 0.56$ ,  $p = 0.46$ ).

**Consequences of declining body size.** To quantify the per-capita change in several ecosystem services resulting from observed declines in body size, we used species-specific length-weight relationships to convert change in length to change in mass (see Methods for details). Next, we converted change in mass to per-capita changes in fecundity, nutrient transport, human nutrition, and commercial value (Fig. 5). The per-capita effects of size declines will be most impactful when accompanied by decreases

in abundance, as observed for Chinook salmon, whose abundances<sup>23</sup> and body sizes have both declined in recent years. Our estimates suggest that the dramatic body size declines observed in Chinook salmon translate to equally dramatically reduced per-capita contributions to people and nature, including median reductions in egg production (−15%), commercial value (−25%), meals provided (−26%), and nutrient transport (−26%). Reductions for other species were less dramatic, but still substantial (Fig. 5, Supplementary Data 1–3).

## Discussion

We provide comprehensive evidence that four species of Pacific salmon in Alaska are now smaller than they were historically, with the rate of decline having accelerated since the year 2000. Declining body size overwhelmingly results from younger maturation (i.e., age-at-return) rather than reductions in growth (i.e., size-at-age). Although no single factor explained size declines, we revealed that both climate and competition at sea are associated with changes in salmon size across Alaska. This result extends the findings of other recent studies that also show impacts of climate and competition on salmon body size<sup>20</sup> and age-at-maturity<sup>29</sup>. Finally, we show that declines in body size over the past 30 years have likely translated into important ecological and socioeconomic consequences for salmon-dependent ecosystems and peoples in Alaska, especially for the largest of the species, Chinook salmon.



Widespread declines in body size occurred over the past four decades across four salmon species (Fig. 1, Fig. 2a). This finding generalizes previous species- and region-specific analyses<sup>19,30,31</sup>. Size trends were more similar for a given species across regions than for a given region across species (Fig. 1), with Chinook salmon showing the greatest decline in size (−8.0%), followed by coho salmon (−3.3%), chum (−2.4%) and sockeye (−2.1%). In contrast to many previous studies that assume monotonic linear changes in size<sup>18,19</sup>, our use of general additive models revealed markedly nonlinear changes, including an apparent recent acceleration of size decline beginning around 2000 that was shared among all four species, and several common periods of high and low average size among sockeye, chum, and coho salmon (Fig. 2a). Identifying the putative drivers of specific periods of time exhibiting shared body size change was beyond our scope, but is likely a fruitful avenue for future research.

Underlying the general body size decline observed across species, a considerable amount of among-region and among-population variation in body size change was observed within species. Body size trends were best explained by models that allowed region-specific (chum and sockeye salmon) or population-specific (Chinook and coho salmon) responses through time, rather than a single response shared among regions and populations (Supplementary Table S1). We interpret this result to reflect the large number of populations sampled from diverse habitats across Alaska, from temperate rainforest ecosystems in Southeast Alaska to subarctic ecosystems in Kotzebue. The idiosyncratic responses of body size to climate indices we observed could be partially explained by differential responses across species, regions, and populations according to site-specific habitat climate filtering, evolutionary histories, and relative location in their species range or climate envelope.

To an unknown extent, other external factors likely also contributed to variation in patterns of size declines among regions and species. For example, the relatively low magnitude body size declines in Southeast Alaska Chinook salmon (Fig. 1) could be explained by an unusual characteristic of the Southeast Alaska troll fishery for Chinook salmon, which catches a high proportion of immature salmon from British Columbia, Washington, Oregon, and California<sup>32</sup>. Reductions in the size and age of Chinook salmon originating from these areas outside of Alaska have not been as extreme as those observed for Alaskan Chinook salmon populations<sup>20,31</sup>.

Earlier maturation (age-at-return), rather than slower growth (size-at-age), was primarily responsible for observed size declines across species and regions (Fig. 3). Chinook salmon, which exhibit the greatest life history diversity and thus greatest capacity for change in age-at-maturity, showed the greatest magnitude of decline in both body size and age-at-maturity. This result formalizes and extends findings from previous studies that age truncation appears to play an important role in declining Chinook salmon body size<sup>19,30,31,33</sup>. Compared to Chinook salmon, changes in age-at-maturity were more variable through time in chum and sockeye salmon (Fig. 2), which also showed size declines but of lower magnitude. Both chum and sockeye salmon showed an initial increase in average saltwater age, but this increase has been followed by generally decreasing age-at-maturity, coinciding with the pronounced recent declines in body size.

Although our results provide strong evidence that salmon are becoming smaller because they are returning from the ocean at a younger age, we were unable to distinguish the contributions of changing maturation schedules from increasing marine mortality. Younger age structure could result from numerous scenarios, including plastic responses to positive growth conditions that allow salmon to reach a threshold size earlier<sup>34</sup>, evolutionary

shifts in maturation schedules<sup>35</sup>, increased late-stage mortality<sup>36</sup>, compounding risk from overall increased mortality<sup>36</sup>, or any combination of the above. Finer-scale information about marine mortality is needed to explore these non-mutually exclusive scenarios. It is also important to recognize that the potential for growth rate to influence age-at-maturity<sup>34</sup> means that, despite the lesser contributions of changing size-at-age, some proportion of the changes in age-at-maturity that contribute to body size declines might ultimately result from changes in growth rate.

Climate and competition at sea clearly influence salmon size. Results for each species indicated a strong effect of at least one climate metric. However, specific metrics varied in their direction and magnitude across species, underscoring the complex effects of climate on body size (Fig. 4). Recent work on salmon productivity has shown that relationships between salmon and climate variables vary through time<sup>37</sup>, and the influence of climate on body size could be similarly non-stationary.

Competition metrics also had important but variable effects on salmon body size (Fig. 4; Supplementary Fig. S4). The strongest negative association we detected was between sockeye salmon body size and the North Pacific-wide abundance of pink salmon. This result corroborates previous studies documenting negative influences of Asian pink salmon abundance on Alaskan sockeye salmon, which share similar prey communities and distributions during their final years at sea<sup>38</sup>. Indeed, the only consistently negative effect across all species was that of Alaskan pink salmon abundance (Fig. 4), although this effect was weak in most species. Intriguingly, the shared acceleration of size declines post-2000 occurred during a period of unusually high (though variable) pink salmon abundance in Alaska<sup>39</sup>, suggesting high pink salmon abundances could be accelerating or exacerbating size declines. Our results provide further evidence that wild and hatchery-enhanced pink salmon abundance in the North Pacific has reached such high levels that they appear to be exerting an influence on ecosystem structure and function<sup>40</sup>.

For each species, we detected an underlying trend shared among populations (i.e., a nonlinear year effect) that was not fully explained by any climate or competition covariates (Supplementary Fig. S6). These shared trends suggest that, within species, populations are responding similarly to other broad-scale factors we did not identify as a priori hypotheses and as a result were not included in our models.

Our results are consistent with previous studies that suggest fisheries are likely not a major driver in broad patterns of salmon size decline<sup>20,29,41</sup>, yet might play an important role for some populations<sup>42,43</sup>. Harvest has been implicated in size and age declines for many marine fishes<sup>5,28</sup> and has long been expected to contribute to declining salmon size<sup>17</sup>. We did not detect any overall relationship between harvest rate and size change, but our analysis was necessarily limited to a subset of intensively monitored Chinook and sockeye salmon populations with adequate data. Furthermore, the potential for differences in size selectivity across fisheries and gear types<sup>44</sup> could limit the extent to which these results can be extrapolated to other fisheries.

We lacked sufficient data to investigate several factors that could contribute to size declines, especially in certain species or regions. In Alaska, there is relatively little contribution of hatchery production to the overall abundances of sockeye, coho, and Chinook salmon<sup>29,39</sup>, but hatchery selection<sup>45</sup> could contribute to size declines in regions with high hatchery production, such as chum salmon in Prince William Sound and Southeast Alaska. We were unable to rigorously test for an effect of hatchery selection, but populations from hatchery-intensive regions did not appear to show greater magnitude declines in body size compared to populations from other regions (Fig. 1). We also lacked sufficient data on predator abundances to test for effects of

size-selective predation, but bioenergetic modeling has shown that size-selective predation from killer whales (*Orcinus orca*)<sup>41</sup> and salmon sharks (*Lamna ditropis*)<sup>46</sup> could be contributing to body size declines in Chinook salmon. The limited diet data available for Alaska resident killer whales<sup>47,48</sup> suggests that they show lower selectivity on Chinook salmon than do killer whales from Washington and British Columbia<sup>49</sup> upon which these models are based<sup>41</sup>. Additional data on hatchery selection, predator abundances, selectivity for salmon, and size-selectivity are needed in Alaska in order to rigorously test these hypotheses.

We estimate that the observed salmon size declines could already be causing substantial reductions in fecundity, nutrient transport, economic value, and food security (Fig. 5). Declines in fecundity can impede population productivity and recovery<sup>50</sup>. Due to these effects on productivity, declines in body size have been used in other systems to predict population declines and collapses<sup>51</sup>. Reduced salmon size also decreases the per-capita transport of marine-derived nutrients into terrestrial ecosystems, with important implications for a wide array of ecological processes including riparian productivity and biodiversity<sup>15</sup>. Salmon are economically important; in 2017, the ex-vessel value (price paid to fishermen) of Bristol Bay salmon fisheries alone was over \$214,000,000<sup>52</sup>. Meanwhile, the value of subsistence salmon fisheries for rural and Indigenous communities is profound, with broad implications for food security, well-being, and cultural connectivity<sup>13,14</sup>. Socioeconomic impacts of declining salmon size have long been of concern for Alaskans, especially those whose well-being, food security, and economic livelihoods depend on salmon<sup>14</sup>.

We considered per-capita delivery of ecosystem services, but the realized consequences of declining body sizes will also depend on salmon abundances. The consequences of declining size could, to some extent, be balanced by increasing abundances in some species such as sockeye and chum salmon whose abundances have generally increased in recent years throughout the state<sup>39</sup>. In contrast, Chinook salmon abundances have generally declined across Alaska<sup>23</sup>, so the socioeconomic impacts of declining Chinook salmon size are already compounded by reduced abundance and resulting regulatory limitations on harvest opportunity. Because Alaska salmon are managed according to a fixed escapement policy under which the number of adult salmon that reach the spawning grounds is held generally constant across years, increases in total abundance tend to result in large harvests but generally do not translate into increased escapement. The relatively stable numbers of salmon on the spawning grounds, even in years of high abundance, will result in limited ability for high abundances to mitigate the per-capita ecological consequences of declining size. How increasing salmon abundance might offset the costs of declining body size for the commercial fishery is a complex topic worthy of further exploration, especially for sockeye and chum salmon.

We also acknowledge that other external factors will impact the consequences of declining body size. For example, the economic costs of declining body size are also influenced by idiosyncrasies of production costs and market fluctuations due to trade policies or the availability of market substitutes like farmed Atlantic salmon<sup>53</sup>. These complexities are extremely difficult to fully address at a state-wide multispecies level, but in-depth species-specific considerations of the potential consequences of size declines that account for abundance are important topics for future investigation.

Our findings contribute to the mounting body of evidence that maintenance of body size, in addition to abundance, is critical for maintaining healthy salmon-people and salmon-ecosystem relationships. Yet, what are the options to slow or even reverse these size declines? While the impacts of size declines are experienced

locally, the primary causes appear to be regional and even global. Of the two primary drivers associated with size declines, climate forcing and ocean abundance of salmon and particularly Alaska pink salmon, the latter is within local management control. Across the Pacific Rim, ca. 5 billion hatchery salmon<sup>39</sup> are released into the North Pacific each year where they add to already high abundances of wild pink, chum, and sockeye. While signals of conspecific and interspecific competition are increasingly evident<sup>38,40,54,55</sup>, managers currently lack tools to help inform difficult decisions regarding hatchery releases. Tools that quantify the apparent trade-offs between the releases of one species and the impacts of size and productivity on conspecifics and other species are urgently needed.

Our large-scale consideration of salmon body size extends and generalizes previous findings, showing that body size declines are ongoing and more widespread than previously reported. The direct relationship between smaller salmon and economic and social losses has not been estimated previously. Our conservative calculations of the potential per-capita consequences of recent body size declines show the ecological, economic, and social losses could be substantial. We compared current size to a pre-1990 baseline, but this captures only a small window of commercial salmon fisheries in Alaska, which started in the late 1800s. Size declines were observed long before 1990<sup>17</sup>, and thus we expect that analyses over longer time series would likely reveal even more dramatic impacts. Despite widespread reporting of body size declines across diverse taxa<sup>2,3</sup>, the ecological and socioeconomic consequences of body size declines are underappreciated. Using Pacific salmon in one of the few remaining intact, largely pristine salmon ecosystems on Earth as a test case, we show the consequences for people and ecosystems could be substantial.

## Methods

**Age-length (AL) datasets.** Alaska Department of Fish & Game (ADF&G) monitors the number, body size, sex, and age of Alaska salmon harvested in a variety of fisheries and on their return breeding migration from the ocean to freshwater. Age and body length (AL) data have been collected on mature adults from commercial, subsistence, and sport harvests, escapement (spawning population) projects, and test fisheries since the early 1900's. ADF&G data has historically been archived in regional offices; however, for this project we were able to compile all available data from across the state (Supplementary Figs. S7–S10) into a single dataset, representing over 14 million raw AL samples.

The majority of Alaska salmon fisheries target mature adults during their breeding migration into freshwater. Data from commercial harvests represent the largest proportion (57%) of measurements and are generally collected from marine waters and near river mouths. Although many Alaska salmon fishing districts are designed to operate as terminal fisheries, targeting fish destined for their river of origin, even terminal fisheries can intercept salmon returning to other Alaskan populations, and many other districts are non-terminal. Because most commercial salmon fisheries in Alaska catch a combination of fish from the target stock and intercepted fish returning to other populations, commercial samples often include a mix of fish from different populations within a river drainage and outside the drainage (e.g., Southeast Alaska troll fishery may be >80% non-local fish at times). Commercial samples from some fisheries targeting wild salmon could include a relatively low but unknown proportion of hatchery-origin salmon, which could not be excluded from our analyses without individual-level information on origin (hatchery or wild). Samples from escapement enumeration projects (sampling projects that count the number of mature adults that 'escape' the fishery and return to freshwater) make up the next highest proportion of AL measurements (33%). Escapement projects collect AL data from fish sampled in the freshwater environment, close to or on the spawning grounds, generally at counting towers, weirs, or fences. A variety of other sampling project types (test fishing, subsistence catch, sport catch) make up the remaining portion of these data, with no single project type representing more than 5% of the samples. ADF&G recorded the name of the sampling project, generally as the name of a given river (e.g., Fish Creek) or district (e.g., Togiak District), which we refer to as sampling locations. To ensure as much as possible that methods of data collection were consistent across locations and species, we excluded data collected from projects other than commercial harvest and escapement monitoring from statistical analyses.

Age and length (AL) measurements were collected by ADF&G personnel using standard methods<sup>56</sup>. Briefly, fish length is collected to the nearest millimeter using a measuring tape or a manual or electronic measuring board, depending on project

and year. Fish age was most commonly estimated by ADF&G scientists reading growth annuli on scales<sup>57</sup>. For many AL measurements, specimen sex was also recorded, predominantly using external characteristics for sex determination. Sex determination with external characteristics in ocean-phase fish is frequently unreliable<sup>58</sup>. Because most of our data come from commercial harvests that occur in ocean-phase fish prior to the development of obvious external secondary sexual characteristics, we did not analyze the sexes separately. However, other studies examining length at age with reliable sex determination have shown similar trends in size and age for males and females<sup>33,59</sup>. As in Lewis et al.<sup>19</sup>, we assume our results reflect similar trends in male and female salmon.

To ensure data were of high quality, a number of quality assurance checks were established, and data failing those checks were excluded from analysis. These checks include ensuring that ages and lengths were within reasonable bounds for each species, that sample dates were reasonable, that data were not duplicated, and that data were all of the same length measurement type (mid-eye to fork of tail). Because mid-eye to fork length was by far the most commonly used length measurement type (85% of samples) within the data, and the vast majority of sample protocols use mid-eye to fork measurements, we assumed that observations where no length measurement type was reported (0.08% of samples) were mid-eye to fork. No other unique length measurement type accounts for more than 2% of samples. We also excluded any samples that measured fewer than ten fish for a given year/location combination. After these extensive checks, we were left with measurements on over 12.5 million individual salmon.

A wide variety of gear types were used to collect samples. The three most common gear types included gillnet, seine, and weir. Sampling methods within projects did not change systematically over time; however, for at least some projects, changes did occur, such as changes in gillnet mesh materials and sizes (for commercial harvest<sup>60</sup>) or sampling location within a watershed (for escapement projects). Some of these methodology changes are sporadically reflected in the data (e.g., mesh size), whereas others are not included and difficult to capture (e.g., weir location changes). Given the inconsistency in data and metadata associated with these fine-scale methodology changes, and the spatial and temporal scale of this dataset, changes in mesh size, gear type, or fine scale location changes (movement of a project within the same river system) were not included in our analyses.

**Consistency in salmon size declines.** To quantify the spatial and temporal extent of body size change, we estimated the average length of fish for each species in each sampling location and return year (the year when the fish was caught or sampled on its return migration to freshwater), which we interpret as putative biological populations (henceforth referred to as populations). For each population, we averaged these annual means to find the mean body length during a baseline period before 1990 and recent period after 2010. The pre-1990 period included all data collected before 1990, though relatively little data was available before 1980. Comparing data from two discrete time periods avoids potential edge effects that would be introduced in dividing a consecutive time series. Only populations for which we had data in both periods were included (100 sockeye, 34 Chinook, 32 chum, and 13 coho salmon populations). We established a criterion of at least 3 years of data for each population during each time period for inclusion in this analysis. Although somewhat arbitrary, we chose 1990 as the end of the early period to ensure a large number of populations had sufficient data to be included, while still being early enough to provide a meaningful baseline for comparison with current data. Because our goal was to investigate trends experienced by resource users in Alaska, we included data from some stocks that are known to capture salmon that originated from areas other than Alaska. For example, estimates for Chinook salmon from Southeast Alaska are likely influenced by the inclusion of troll-caught Chinook salmon, which are largely composed of salmon originating from British Columbia (B.C.) and the U.S. West Coast. For visualization, the results of this analysis were then scaled up to the level of the fisheries management areas established by ADF&G (Fig. 1).

To quantify and visualize continuous changes in body size across time, we fit general additive models (GAMs) to annual mean population body length for each species. To avoid convergence problems due to small sample sizes, data collected before 1975 were excluded from this analysis. In contrast to previous studies that assumed monotonic linear changes in size<sup>18,19</sup>, year was included as a nonlinear smoothed term because preliminary analyses suggested that the rate of length change varied through time. We included data from all populations for which observations from five or more years were available (276 sockeye salmon populations, 202 Chinook salmon populations, 183 chum salmon populations, 142 coho salmon populations). We knew a priori that salmon populations differ in average body size, so to preserve original units (mm) while controlling for variation in absolute body length among populations, we included two fixed factors: population and region. We assigned regions based on terrestrial biomes and the drainage areas of major watershed (shown numbered on Fig. 1, colored by ADF&G management region). Repeating these GAMs on escapement data alone provided equivalent results (Supplementary Fig. S11), which confirms that our results are not due to an artifact of sampling procedures through time.

To visualize changes in age structure and size-at-age, we fit very similar GAMs to age and length-at-age data. As above we included fixed effects for population and region, as well as a nonlinear year effect. Using the same dataset as the previously described GAMs, we used either mean freshwater age, mean saltwater

age, or mean length-at-age as the response variable. For length-at-age, we separately fit GAMs for the four most common age classes in each species, except coho salmon, for which sufficient data was available for only three age classes.

To determine the extent to which patterns of body size change are consistent across space within a species, we re-fit these GAMs by replacing the main year effect by either a region-by-year or population-by-year interaction and compared model fit using AIC. These nonlinear interactions allow regions or populations to differ in their patterns of length change through time. These models are more data intensive than the previous GAMs, so we included data from all populations for which our time series consisted of any 20 or more years of data (123 sockeye salmon populations, 37 Chinook salmon populations, 38 chum salmon populations, 14 coho salmon populations).

**Contributions of declining age versus growth.** To partition the contribution of changes in population age structure versus size-at-age to changes in mean population length, we used the chain rule<sup>61</sup>. We used the discrete time analog of the chain rule

$$\Delta(xy) = y\Delta x + x\Delta y, \quad (1)$$

and assume that change in mean length is a function of changes in population age structure,  $p(a)$ , and mean length-at-age,  $x(a)$ . For each species and population, age structure in year  $t$  was calculated as the proportion of individuals in each age  $a$ . Mean length in year  $t$  is given by

$$x_t = \sum_a p_t(a)x_t(a), \quad (2)$$

and the year-to-year change in length is given by

$$\Delta x_t = x_{t+1} - x_t = \sum_a p_{t+1}(a)x_t(a) + \Delta p_t(a)x_t(a), \quad (3)$$

where

$$p_t(a) = 1/2[p_{t+1}(a) + p_t(a)], \quad (4)$$

and

$$\Delta p_t(a) = [p_{t+1}(a) - p_t(a)]. \quad (5)$$

Solving these formulas year-to-year for each species in each population, we estimated the proportion of change in mean length due to changes in age structure and size-at-age. We included all populations for which we had five or more years of data (though change can only be estimated for consecutive years of data) and averaged the results across populations in each region.

**Causes of age and size changes.** To identify potential causes of change in salmon body size, we quantified associations with a variety of indices describing physical and biological conditions in Alaska's freshwater and marine salmon habitats. Each candidate explanatory variable was selected based on existing biological hypotheses or inclusion in previous analyses of salmon size or population dynamics.

We considered several ocean climate indicators as potential causes of change in salmon size over time. Pacific Ocean conditions are often quantified using large-scale climate indices such as the Pacific Decadal Oscillation (PDO), El Niño Southern Oscillation (ENSO), and NPGO. These large-scale indices of ocean conditions, as proxies for climate and marine environment, have been shown to affect the survival and productivity of Pacific salmon in the North Pacific Ocean<sup>62,63</sup>. PDO, NPGO<sup>64</sup>, and MEI<sup>65,66</sup> indices were all accessed and downloaded online (PDO, <http://research.jisao.washington.edu/pdo/>; NPGO, <http://www.o3d.org/npgo/npgo.php>, accessed 2018-02-07; MEI, <http://www.esrl.noaa.gov/psd/enso/mei/>, accessed 2018-02-08; MEIw, <https://www.beringclimate.noaa.gov/>, accessed 2018-02-08). In this analysis, winter means of NPGO and MEI were used in addition to an annual mean of MEI. Two ice cover metrics were also used to capture ocean climate conditions. Bering Sea ice cover and retreat were downloaded from <https://www.beringclimate.noaa.gov/>, originally derived from the National Snow and Ice Data Center data. Bering Sea ice cover index represents the winter anomaly, relative to 1981–2000 mean. Bering Sea ice retreat is an index representing number of days with ice cover after March 15.

Sea surface temperature (SST) was also explored as a potential cause of the changes in salmon size and age. SST has proven to be closely linked to salmon productivity. Mueter et al.<sup>67</sup> found that regional-scale SST predicted survival rates better than large-scale climate indices such as the PDO. They concluded that survival rates were largely driven by environmental conditions at regional spatial scales. SST was extracted from the Extended Reconstructed Sea Surface Temperature (ERSST) version 4<sup>68</sup>. To approximate SST values close to the river mouths which juvenile salmonids are most likely to experience after ocean entry, a double layer of the grid cells tracing the coastline of Alaska were extracted and the mean summer SST was calculated for each region.

Because in situ fluvial temperature measurements are sparse, both spatially and temporally, compared to the coverage of the AL dataset, air temperature was used as a proxy for temperature during the freshwater life stages. Air temperature data were extracted and sorted from remote-sensed satellite observations into multi-monthly regional means by season<sup>69</sup>.

Finally, we considered the potential for competition with other salmon to influence salmon size by including the abundances of several highly abundant

salmon species as explanatory covariates. Using data compiled by Ruggerone and Irvine<sup>39</sup>, we evaluated the abundance of adult pink, chum, and sockeye salmon returning to Asia and North America as a proxy for the abundance of adult salmon of each species in the North Pacific. In addition, we also considered the more localized abundance of pink, chum, and sockeye salmon returning to Alaska, because salmon body size has been shown to vary with salmon abundance in the year of return migration in some species<sup>70</sup> at finer spatial scales. The abundances of coho and Chinook salmon were not included, because they occur at much lower abundance than sockeye, chum, and pink salmon.

We also explored marine mammal abundances as potential predictor variables, but found that the data available precluded rigorous statistical comparison with our time series of salmon size and age structure. For example, the only estimates of orca abundance available for our study area (that from Southeast Alaska and Prince William Sound) show steady, near monotonic increases through our study period<sup>71,72</sup>. Statistically, this leads to insufficient replication and high collinearity with year effects. Although caution is warranted in interpretations of any models for which the assumptions are so obviously violated, we note that preliminary analyses including marine mammal abundance were not dramatically superior in terms of variance explained or model fit. Because of these limitations, we determined that a reliable test of the effect of marine mammal predation was not possible for Alaska.

Ultimately, we only selected covariates with an absolute correlation among covariate time series of less than 0.61. By establishing this threshold for absolute pairwise covariate correlation we sought to include only covariates for which separate associations with salmon size could be identified. The final set of covariates included in our analyses were: (1) ocean climate indicators (PDO, NPGO, MEI, winter MEI (MEIw), and Bering Sea ice cover index); (2) sea surface temperature (SST); (3) air temperature as proxy for freshwater temperature; and (4) ocean salmon abundance (abundance of Alaska sockeye, pink, and chum salmon, and North Pacific wide abundance of sockeye, pink, and chum salmon).

To test hypothesized associations between temporal trends in the average body size (length) of salmon and environmental conditions, we fit a series of Bayesian hierarchical models to data describing size trends across sampling locations for each species. Because the chain rule analysis showed that changes in age structure explained greater interannual body size variation than did changes in size-at-age, we analyzed age-aggregated mean body length. Time series, starting in 1975, of annual mean length by species for each sampling location ( $l$ ) and environmental covariates were mean-variance ( $Z$ ) standardized prior to model fitting. Models of the form

$$L_{l,t} = \sum_c (\beta_{lc} * X_{t-\delta_c}) + s(t) + \varepsilon_{l,t}, \quad (6)$$

were fit to each salmon species separately using Bayesian methods, where  $L_{l,t}$  is the standardized length at each location ( $l$ ) in each return or observation year ( $t$ ),  $\beta_{lc}$  are coefficients describing the effect of each covariate ( $c$ ) on average length at each location, and  $X_{t-\delta_c}$  is the standardized value of each covariate in each year. The reference year for each covariate is specified relative to the return year, or year in which salmon length compositions are observed ( $t$ ), by a species and covariate-specific offset  $\delta_c$  that associates covariate effects with the hypothesized period of interaction in each species' life history (Supplementary Table S2). Location-specific covariate effects are structured hierarchically such that parameters describing the effect of each covariate on observed changes in average length were subject to a normally-distributed prior whose hyperparameters (group-level means and standard deviations for each covariate) were estimated directly from the data:

$$\beta_{l,c} \sim \text{Normal}(\mu_c, \tau_c^2), \quad (7)$$

This hierarchical structure permitted us to quantify both the average (group-level) association between length observations at each sampling location ( $l$ ) and hypothesized covariates (i.e., the hyperparameter  $\mu_c$ ), and the level of among-location variation in these effects (i.e.,  $\tau_c^2$ ). Prior distributions for model parameters were generally uninformative, with the exception of the prior on the group-level mean covariate effects ( $\mu_c$ ) which included a mild penalty toward zero,

$$\mu_c \sim \text{Normal}(0, 1). \quad (8)$$

The prior distribution of the group-level (hyper) standard deviation of covariate effects was broad and truncated at zero,

$$\tau_c \sim \text{Normal}(0, 10)[0,], \quad (9)$$

allowing the model to freely estimate the appropriate level of among-location variability in covariate effects.

Observation error was assumed to be normally distributed  $\varepsilon_{l,t} \sim \text{Normal}(0, \sigma_\varepsilon^2)$ , with a common observation error variance ( $\sigma_\varepsilon^2$ ) estimated as a free parameter and subject to a broad prior distribution

$$\sigma_\varepsilon \sim \text{Normal}(0, 10)[0,]. \quad (10)$$

Each species-specific model also included a smoothed nonlinear year effect  $s(t)$  describing residual trends in length across time that were shared among sampling (observation) locations but were not explained by the covariates. The degree of nonlinearity for the univariate smooth  $s(t)$  quantifying the common residual trend in length is controlled by the variance term ( $\sigma_s$ ) for the coefficients forming the

spline<sup>73</sup>, for which a broad zero-truncated prior distribution was defined:

$$\sigma_s \sim \text{Normal}(0, 10)[0,]. \quad (11)$$

Hierarchical Bayesian models describing the temporal trend in location-specific salmon length were fit using the brms package<sup>73,74</sup> in R (R Core Team 2018), which generates posterior samples using the No U-Turn Sampler implemented in the Stan software platform<sup>75</sup>. Three independent chains were run for 20,000 iterations with a 50% burn-in and saving every tenth posterior sample, resulting in 3000 posterior samples. Convergence of all chains was diagnosed by ensuring potential scale reduction factors ( $\hat{R}$ ) for each parameter were  $<1.05$ <sup>76</sup>. The sensitivity of model results to prior choice was evaluated by testing more and less restrictive normally-distributed priors for the hyperparameters describing the group-level average effect of each covariate (standard deviation 1.0 and 0.1); estimated covariate effects were insensitive to prior choice.

The influence of harvest on body size was considered separately from that of climate and competition. Reviews of fisheries-induced evolution have shown that populations subject to higher harvest rates show greater magnitude trait change<sup>28</sup>, thus we expected that if fisheries-induced evolution contributes to size change, populations subjected on average to higher harvest rates should show greater magnitude negative size change. To test this hypothesis, we estimated harvest rate as a continuous variable for all populations with sufficient data.

Harvest rate was back-calculated from brood tables, which are datasets curated by ADF&G for management purposes that include the number of offspring from each brood year (year of birth) that return in each of the subsequent years (return year). Brood tables are only available for the most intensively managed salmon stocks. We were able to link brood table data to populations included in our AL datasets for 25 sockeye salmon populations and three Chinook salmon populations. Harvest rates were found from the literature for an additional five Chinook salmon populations<sup>77-79</sup>. To calculate the total harvest in each population and year, we subtracted escapement estimates from the overall estimate of returns (i.e., total run size, or both fish that escaped and were harvested). Harvest rate was calculated as the harvest divided by the estimated run size in each year, then averaged across the time series for each population to obtain the average harvest rate experienced by each salmon population. Averaging across the time series was deemed appropriate, because previous studies from the few Alaska salmon fisheries with sufficient data to consider harvest rate through time have shown that harvest rate is interannually variable but relatively stable through time<sup>33,60</sup>. Estimates from before 1990 or after 2010 (for sockeye) or 2008 (for Chinook) were excluded due to incomplete data availability. Each population for which both a brood table and AL data were available had a long time series of AL data (at least 30 years), so body size change was calculated by fitting a linear model of body length by year and extracting the slope. We regressed change in body size (slope coefficient of length-year regression) against population-specific harvest rate averaged through time (1990–2012), with a fixed effect for species. A harvest rate by species interaction was included but removed because it was not significant.  $P$  values were obtained from an ANOVA with type II sum of squares.

**Consequences of declining body size.** To estimate the potential consequences of salmon body size declines, we calculated the change in ecosystem services that would be expected given the observed change in body length for several important social, economic, and ecological roles filled by salmon in Alaska. For each species and population, we calculated percent change in body size (body length,  $\Delta L$ ) from pre-1990 to post-2010 using the same methods as described for Fig. 1. Specifically, we calculated absolute change in body size as:

$$\Delta L = \text{Mean length}_{\text{post-2010}} - \text{Mean length}_{\text{pre-1990}}, \quad (12)$$

and percent change in body size as:

$$\text{Percent size change} = \frac{\text{Mean length}_{\text{post-2010}} - \text{Mean length}_{\text{pre-1990}}}{\text{Mean length}_{\text{pre-1990}}}. \quad (13)$$

However, the magnitude of many of the ecosystem services we investigated vary with salmon body mass, rather than directly with body length. To predict salmon weight ( $W$ ) based on body length ( $L$ ), we fit a standard length-weight relationship of the form  $W = a(L)^b$ . Weight data were not available for most regions, so we estimated the  $a$  and  $b$  parameters for each species by fitting the logarithmic linearized version of this equation to high-quality datasets collected in Alaska for each species (Supplementary Table S3). Using these species-specific length-weight relationships, for each species and location, we calculated the change in weight between 1990 and 2010 ( $\Delta W$ ) by finding the weight of an average post-2010 salmon and subtracting the weight of an average pre-1990 salmon. Detailed results are presented in Supplementary Data 1–3.

To consider the ecological consequences of salmon body size change, we focused on data collected by “escapement projects”. These projects usually sample salmon in-river at a weir or counting tower as they migrate upstream onto spawning grounds. For each location with sufficient data (three or more years in each time window, before 1990 and after 2010), we estimated the ecological consequences of salmon size decline as the change in marine-derived phosphorus transported and the change in the number of eggs produced per fish. To calculate change in phosphorus inputs, we modified previously-developed models for anadromous fish nutrient loading to include only the import of nutrients into

fresh waters by spawning adults<sup>80,81</sup>. We used a previously-estimated phosphorus content for spawning adult salmon of 0.38% of wet weight<sup>80,81</sup>. We calculated the difference in phosphorus content using the mean weight before 1990 versus after 2010. We ignored the effect of juvenile export on nutrient loading due to insufficient data and because previous studies have found its effect to be negligible unless adult biomass and escapement are extremely low<sup>81</sup>.

To calculate the change in female fecundity, we used fecundity–length relationships to estimate the fecundity of the average female before 1990 and after 2010 and found the difference. We used published, species-specific fecundity–length relationships estimated for populations within Alaska. Because fecundity data were not available for all regions, we based these relationships on high-quality datasets from representative populations within Alaska (Supplementary Table S4).

To consider the economic consequences of body size change, we focused on data sampled from commercial fisheries. For each location with sufficient data (three or more years in each time window), we asked how much higher per-fish ex-vessel prices would be if fish had not changed in size in the period between 1990 and 2010. That is, using current price-per-pound estimates, we compared the price of two fish: one that weighed the same as an average fish post-2010 and one that weighed the same as the average fish pre-1990. First, we identified the most recently reported ex-vessel prices for each species and region<sup>82</sup>. For each species and region, we then multiplied the weight of the average pre-1990 salmon by its corresponding price-per-pound to calculate the average ex-vessel price for a pre-1990s salmon in today's market. This value was then subtracted from the average ex-vessel value of a post-2010 salmon, calculated in the same way, to estimate the change in ex-vessel per-capita salmon value due to salmon size change.

To consider the social consequences of size change, we focused on data from salmon caught in subsistence fisheries. However, length measurements taken from subsistence projects were rarely available before 1990. For this reason, we also included data from salmon caught in commercial harvest, which are expected to use the most similar gear types (i.e., gillnets) to subsistence harvest. For each location with sufficient subsistence or commercial data (three or more years in each time window), we modeled the social consequences of salmon size decline as the change in nutrient content and total servings or meals per fish. First, we determined the change in edible mass ( $M$ ) of each fish by scaling according to species-specific values for seafood processing recovery rates<sup>83</sup>. We assumed that subsistence recovery rates are similar to the reported recovery rates for hand-filleted skin-on fillets, which were 55% for Chinook salmon, 60% for chum salmon, 57% for coho salmon, and 53% for sockeye salmon. We expect fillets to be the most commonly used salmon part but acknowledge that subsistence users could use different body parts (including the head and eyes) and that true recovery rates will likely vary among locations and users. We then calculated the nutrient value of the average pre-1990 and post-2010 fish and calculated the change in nutrient value, using species-specific nutritional ratios for protein (g), fat (g), and calories (kcal) per 100 g serving<sup>84</sup>. We used nutritional ratios for raw fish (National Nutrient Database for Standard Reference IDs: 15,078 for Chinook, 15,081 for coho, 15,085 for sockeye, and 15,079 for chum salmon). We also asked how many fewer 100 g servings and how many fewer meals of salmon were available per fish. We assume a standard serving size of 100 g, but note that many individuals will eat more than one serving in a sitting. Because of this uncertainty in serving size, we also included the change in meals by dividing  $M$  by the average self-reported estimates of portion sizes of salmon (227 g for Chinook salmon, 165.5 g for chum salmon, 178 g for coho salmon, and 163.5 g for sockeye salmon) from subsistence users in the nearby villages of Old Crow and Teslin, Yukon Territory, Canada<sup>85</sup>.

**Reporting summary.** Further information on research design is available in the Nature Research Reporting Summary linked to this article.

## Data availability

Our data have been publicly archived on the Knowledge Network for Biocomplexity (KNB): Jeanette Clark, Rich Brenner, and Bert Lewis. 2018. Compiled age, sex, and length data for Alaskan salmon, 1922–2017. Knowledge Network for Biocomplexity. <https://doi.org/10.5063/F1707ZTM>. Krista B Oke, Curry Cunningham, and Peter Westley. 2020. Collated dataset of covariates that could influence body size of Alaska salmon. Knowledge Network for Biocomplexity. <https://doi.org/10.5063/F1N29V9T>. In addition, we used publically available data from the following sources: US Department of Agriculture (USDA), Agricultural Research Service Laboratory. USDA National Nutrient Database for Standard Reference, Legacy Version. Available at: <http://www.ars.usda.gov/nutrientdata>. Alaska Department of Fish and Game. Commercial Salmon Fishery Exvessel Prices by Area and Species (2018). Available at: [https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmoncatch\\_exvessel](https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmoncatch_exvessel) (Accessed: 2018-04-23). Kibebe, J. & Jones, L. Historic air temperatures in Alaska for 1901–2015, with spatial subsetting by region. (2017). <https://doi.org/10.5063/F1RX997V>. Huang, B. et al. Extended Reconstructed Sea Surface Temperature (ERSST), Version 4. Accessed on April 16, 2018 (2015). <https://doi.org/10.7289/V5KD1VVF>. Di Lorenzo et al., 2008: North Pacific Gyre Oscillation links ocean climate and ecosystem change, GRL. Available at: <http://www.o3d.org/npgo/npgo.php> (Accessed: 2018-02-08). NOAA, Multivariate ENSO Index. Available at: <https://www.esrl.noaa.gov/psd/ensoi/mei/> (Accessed: 2018-02-08). JISAO, Pacific Decadal Oscillation (PDO). Available at: <http://www.research.jisao>.

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## Code availability

Code has been archived publicly and is available at: <https://github.com/KristaOke/salmon-size-declines>.

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## Author contributions

E.P.P., N.W.K., and P.A.H.W. conceived of the study; E.P.P. and K.B.O. refined study goals; K.B.O., C.J.C., P.A.H.W., M.L.B., S.M.C., J.S., A.P.H., V.A.K., N.W.K., J.K., H.K.K., K.M.K., B.L., S.M., J.D.R., G.K.V., and E.P.P. guided study design; J.C. lead data collection and QA/QC; K.B.O., C.J.C., S.M., V.A.K., J.K., N.W.K., and K.M.K. analyzed data; K.B.O., C.J.C., E.P.P., J.D.R., B.L., P.A.H.W., K.M.K., and J.C. contributed to writing; K.B.O., C.J.C., J.K., and K.M.K. created figures; K.B.O., C.J.C., P.A.H.W., M.L.B., S.M.C., J.S., A.P.H., V.A.K., N.W.K., J.K., H.K.K., K.M.K., B.L., S.M., J.D.R., G.K.V., and E.P.P. edited the paper.

## Competing interests

The authors declare no competing interests.

## Additional information

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