

<u>Year</u>	<u>Topic 1</u>	<u>Topic 2</u>	<u>Topic 3</u>	<u>Topic 4</u>	<u>Topic 5</u>	<u>Topic 6</u>	<u>Topic 7</u>
2012	Regulatory Structure	Susitna Chinook Stock Assessment	NCI SOC; Weirs	Little Su Coho; SOMC	Yentna River; Sonar	Judd, Chelanta, Larson Lakes; Sockeye SEG	Fish Creek; Mgmt Plans; In-season Mgmt
2013	GENERAL MTG. MINUTES Coho goals for Deshka &	SOC's; Little Su coho as SOC?	Lakes & lost productivity.	Establishing escapement goals for Deshka coho.	Insufficient escapement goals in the MSB.		
2014	Susitna	Kenai sonar counts	King salmon mgmt.	Susitna-Yentna sockeye SOC	Future SOC's	2015 sportfish changes	2015 commercial changes
2015	Preseason King salmon regs.	King salmon retrictions.	King salmon harvest in hwy-accessible Susitna River streams.	Offshore test fishery.	Stock of yield concern.	Coho harvests	ADFG research priorities
2016	Susitna sockeye SEG	3-tier method	Kenai sockeye forecast	Susitna River studies	Sockeye productivity data	Willow Ck chinook hatchery fish	Eastside Susitna Chinook Catch and Release
2017	Conservation cooridor concept	Susitna River sonar	Northern bound coho commerical harvest.	Ramping up 3-tier commercial fishery.	Area-wide drift fishing impact on coho.	Area wide drift fishing openers as it realtes to escapement levels.	Comm fish proposals to for addressing N. District SEGs.

2018 UCI Hatchery egg take and smolt releases.	2019 king salmon season forecast and timeline.	N. CI/Deska R. King Salmon Mgmt Plan for BOF	Salmon goals met in 2018 and how ADFG intends to replicate this.	ADFG research priorities for N./Upper CI	Criteria used for delisting a SOC	Susitna sockeye and Deshka king production.
2019 Turnagain arm, Knik arm, Susitna sockeye stocks.	Triggers allowing more commercial harvest eastside of N. District.	Emergency Orders and N. District setnets in August.	Susitna River guided fishing log results.	Comm. fishery impacts on N. District and MSB fisheries.	Rationale King fishing only 4 days on Parks Hwy streams?	Unit 2 king salmon fishing impacts.
2020 How are legislators informed about fisheries/mgmt.	Expected returns Chignik, Kodiak and CI streams; estimates for the Shelikof Strait salmon fisheries?	BEG and SEG still being used?	King salmon returns - fit between projections and actual returns.	Extending Anchor Pt. test fishery into August	Improving access to MSB rivers/streams	Maintenance of existing access facilities/re: susitna landing

<u>Year</u>	<u>Topic 8</u>	<u>Topic 9</u>	<u>Topic 10</u>	<u>Topic 11</u>	<u>Topic 12</u>	<u>Topic 13</u>
		Kenai River sockeye; UCI				
	Kalgin Island; Off shore test fishery;	sockeye run; harvests; UCI				
2012	Genetic analysis	stocks				
2013						
2014						
2015	Salmon genetics	Drift net and set net harvests	Little Su coho wier counts	Deshka coho goal		
2016	Fish, Cottonwood, & Wasilla Ck coho	Yentna R. sonar studies	UCI fisheries mgmt plan	Little Su king salmon fishery	Drift fishery mgmt.	
2017	How can MSB struggling fisheries be restored?	Drift fishery mgmt. plan.	ADFG confidence in preseason and inseason forecasts.	Favor a commercial surplus harvest in the Kenai over conservation for northern rivers?	Will drift fishery mgmt compliment closures or restrictions to northern sport fisheries?	Are economic values considered in sport fishing versus commercial drift fishing?
						Test fishery off Kalgin Island to resume in 2018?

Inseason mgmt of Sustina and Yentna 2018 Rivers?	2018 Coho and King escapment goal counts for northern CI.	Comm fish assuming allocative authority despite BOF.	Kenai sonar counting pinks as sockeye?			
What approach to 2019 delisting a SOC?	Susitna sub-basin mgmt goals proposal explanation.	Probability of closing N. District King salmon season?	Timeline for N. District King salmon forecast.	UCI salmon research and mgmt priorities.	What salmon streams have lost their salmon stocks?	Salmon stocks not being monitored
King salmon 2020 forecast for 2021	Larson Ck sockeye returns	Prioritize salmon mgmt objectives	Adjusting comm fishing in light of sport fishing closures			

9th U.S.
Circuit
Court of
Appeals -
UCIDA &
mgmt of
the UCI
salmon
fishery.



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of Fish and Game

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November 14, 2012

Representative Mark Neuman
Matanuska-Susitna Valley Delegation
600 E. Railroad Avenue
Wasilla, AK 99567

Dear Representative Neuman:

Thank you for your letter dated November 5, 2012, expressing interest in the management of Upper Cook Inlet (UCI) sport, commercial, subsistence, and personal use fisheries. Below are answers to questions you asked about salmon management. The department responses contain the best information currently available, but much of the information is still preliminary and subject to change. For instance, the department is still finalizing commercial harvest data and reviewing escapement information. Estimates of harvest in sport and personal use fisheries in 2012 will not be available until spring of 2013 at the earliest.

Some questions request information on how the department intends to manage fisheries in 2013. We answer these questions the best we can; there is still much work that needs to occur before we can discuss specific management actions with any certainty. This work includes reviewing and finalizing data collected in 2012, developing run forecasts/projections for 2013, and interdivisional discussions to formulate management options. After this work is completed, the department will meet preseason with user groups and stakeholders to describe and discuss the fisheries management outlook for 2013.

Questions for the November Meeting with Alaska Department of Fish and Game (ADF&G):

- 1. Salmon returns to numerous northern Cook Inlet (NCI) systems have become chronic failures during recent years. The productivity of these stocks continued to decline in 2012 despite significant restrictions to sport and Northern District set net fishermen. As you know a federal fishery disaster was declared because of the diminished return. What regulatory structure, for both personal use and commercial fisheries, will be in place at the onset of the 2013 fishing season?***

The department will likely manage subsistence, sport, and commercial Chinook salmon fisheries in 2013 similarly to 2012. The management strategy in 2012 was designed to reduce harvest by 50% to achieve escapement goals, while providing fishing opportunity throughout the duration of the season.

The following restrictions will occur in 2013 based on action taken by the Alaska Board of Fisheries (board):

- The Chuitna, Theodore, Lewis, and Beluga rivers in West Cook Inlet, and Goose Creek within Unit 2 of the Susitna River, will be closed to sport fishing for Chinook salmon.
- The Chinook salmon sport fishing season will be shortened on Parks Highway streams within Unit 2 of the Susitna River that are open to Chinook salmon.
- The Northern District set gillnet commercial fishery will be closed from the Wood Chip Dock to the Susitna River.

Restrictions taken preseason in 2012 that may likely occur again in 2013 include:

- The Northern District set gillnet commercial fishery regular fishing periods will be reduced from 12 hours to 6 hours.
- Areawide sport fisheries will be restricted to an annual limit of two Chinook salmon (including Deshka River) and unbaited, single-hook, artificial lures (except for the Deshka River and Eklutna Tailrace).
- Unit-specific restrictions to the times/dates when anglers may fish and/or harvest inseason, if warranted.

Additional restrictions, including closure, may occur to fisheries based on inseason information, as occurred in 2012. In addition, restrictions may be relaxed late in the season if escapement goals are projected to be achieved and additional harvest is available; however, given recent trends in Chinook salmon runs to Cook Inlet, this does not appear likely.

Regarding personal use fisheries, none of the three personal use fisheries in NCI – a smelt fishery prosecuted mainly in the Susitna Drainage, a dipnet salmon fishery on the Beluga River, and a dipnet fishery on Fish Creek directed at sockeye salmon – target Chinook salmon. In 2013, all three fisheries will be conducted as written in regulation. The Susitna smelt fishery occurs April 1–June 15 with no bag or possession limit and no permit required. The Beluga fishery occurs from July 10–August 31. Participants must be 60 years or older, obtain a permit and provide harvest information to the department weekly; total harvest is capped at 500 salmon. The Fish Creek fishery may be opened by emergency order (EO) July 10–July 31 if the department projects 50,000 sockeye salmon in the escapement. The sustainable escapement goal (SEG) for Fish Creek sockeye salmon is 20,000–70,000 fish.

2. *At the recent Chinook Salmon Symposium in Anchorage ADF&G presented a research plan aimed at acquiring a better understanding of the causes for the Chinook salmon decline in Alaska. Four stock assessment research projects were identified for Susitna Chinook salmon (in river run size, smolt abundance, stock specific marine harvests and local knowledge). What levels of funding are estimated for each of these projects and what is the expected timeline for implementing these projects?*

For Susitna River, the Chinook salmon research team recommended the following stock assessment projects in the draft data gap analysis:

http://www.adfg.alaska.gov/static/home/news/hottopics/pdfs/gap_analysis.pdf.

- A continuing project to estimate inriver run size of the Susitna River stock. This project would operate fish wheels in the lower Susitna River to sample Chinook salmon for age-sex-size and take genetic tissues for identification of tributary runs, such as the Deshka River (existing weir site) and a yet-to-be determined weir site. Sampling of harvests from inriver sport fisheries will also be conducted to obtain genetic tissues. Mark-recapture estimates of abundance will be calculated from genetic sampling at the lower river fish wheels and inriver sport fishery, combined with counts of fish passing through the two weir sites.
- A continuing project to estimate smolt abundance of the Susitna River stock. This project would capture and coded wire tag juvenile Chinook salmon for estimation of smolt abundance from subsequent adult returns. This project would increase sampling of the inriver sport fishery for coded wire tags in returning adults.
- A continuing project to comprehensively estimate stock-specific marine harvest of Chinook salmon in Cook Inlet fisheries using a combination of genetic stock identification and coded wire tag recoveries. While not specific to the Susitna River stock, this project is needed to estimate contributions of relevant indicator stocks in mixed-stock harvests in Cook Inlet. Commercial set and drift gillnet fisheries in the Central and Northern Districts of UCI, sport fisheries along the Kenai Peninsula and the Homer winter fishery, and the Tyonek subsistence fishery will be sampled to obtain genetic tissues and to examine the catch for coded wire tags.
- A new two-year project to collect, organize and analyze local and traditional knowledge (LTK) about Chinook salmon stocks of the Susitna River drainage. These stocks support a subsistence fishery in the marine waters of the Tyonek Subdistrict of UCI and sport fisheries in various freshwater systems of the Susitna drainage. The research will identify and interview long-term users of Susitna River Chinook salmon who hold detailed knowledge of salmon abundance, timing, condition, and habitats over time based on direct, daily, and, in some cases, multi-generational observations and experience. LTK will provide context and time depth to inform and complement stock assessments accomplished through fisheries science. The project will also directly engage fisheries users in cooperative efforts to document and understand stocks statuses and trends.

3. *ADF&G recently received Alaska Sustainable Salmon Fishery funds for operating weirs on two Stock of Concern NCI Chinook salmon streams. What stocks have been selected and when will and for how long will these weirs be operated?*

In 2012, Chinook salmon escapement was assessed through weirs on the Lewis and Theodore rivers. These West Cook Inlet weir projects are funded by the Alaska Sustainable Salmon Fund (AKSSF) program for calendar year 2012 and 2013. The department submitted a proposal this fall seeking funds to operate both weirs in calendar year 2014.

4. *The Little Susitna River coho salmon run has failed to achieve minimum escapement levels for 4 consecutive years. If minimum escapement is not met in 2013 will ADF&G recommend to the Board of Fisheries that the stock be declared a Stock of Management Concern? What regulatory scheme will be in place at the beginning of the Little Susitna River coho salmon run in 2013? There are rumors that ADF&G is once again seriously*

considering stocking coho salmon at the Little Susitna River. Is there any truth to this rumor?

Recommendations about stock of concern (SOC) are part of the escapement goal review for UCI salmon stocks that will occur in 2013. The department will use recent run assessment and management information (including 2013) to make a recommendation to the board whether an SOC designation is warranted and if necessary, at what level (yield, management). If Little Susitna coho salmon do not meet the escapement goal in 2013, it is likely the department will recommend to the board that it be designated a SOC. Department recommendations will be presented to the board at its Work Session in October 2013.

The department anticipates more conservative management may be necessary for the Little Susitna River coho salmon sport fishery in 2013 because the escapement goal was not met over the past four consecutive years. In 2011 and 2012, the escapement goal was not met despite inseason management actions taken to reduce harvest; in 2009 and 2010, no actions were taken and the resulting escapements were near the low end of the goal. Currently, the department is considering issuing EOs earlier in the season for the inriver fishery if the coho salmon run appears weak based on information from the UCI offshore test fishery (OTF), coho harvest in commercial fisheries, early inriver catch rates from anglers interviewed exiting the Little Susitna Public Use Facility, and early weir counts. This information will be monitored the last two weeks in July. The weir will be in operation for coho salmon at river mile (rm) 32.5 beginning about July 15. Moving the weir downstream from its former location at rm 71 improves timing of inseason management actions by about three weeks. Bag limit reduction(s) and time and/or area restrictions are all possible by late July or early August, if indeed a weak run is apparent. Step-down action taken early in the season, prior to the traditional peak of sport harvest, will provide the best potential for achieving the escapement goal.

The 2013 commercial fisheries regulatory scheme for northern-bound coho salmon, will likely start out similarly to 2012. That said, the department is very cognizant of recent Little Susitna River coho salmon escapement shortages. There are mandatory restrictions to the drift gillnet fleet from July 9–31 for sockeye and coho salmon conservation. The specific dates and area restrictions are dependent upon the size of the Kenai River sockeye salmon run, which is currently unknown because the 2013 forecast has not been completed. We will monitor daily passage rates through the Little Susitna River weir in 2013 and be prepared to take additional restrictions in commercial fisheries in an attempt to achieve the escapement goal. The additional restrictive options include limiting the drift fleet to less area, such as Drift Areas 1 and 2, just Drift Area 1, or to the Expanded or Regular corridors. In addition, as implemented in 2012, the Northern District set gillnet fishery could be restricted or closed for coho salmon conservation.

Finally, some members of the public have expressed a desire for the department to stock hatchery-reared coho salmon at the Little Susitna River. Currently, the department has no plans to implement a coho salmon stocking program.

5. ***During the past three years ADF&G has been evaluating fish wheel selectivity and other sonar error issues at the Yentna River. Please summarize findings to date for this research***

effort. When, if ever, can we expect sonar to again be used to estimate sockeye salmon abundance in the Yentna River?

Preliminary results indicate that fish wheel selectivity indices are highly variable among years (2009–2012) and cannot be used to accurately apportion sonar counts to species. However in 2012, we initiated a study to apportion sonar counts using gillnet catches; this method appears to provide more accurate escapement estimates. Over the next three years, we will continue to apportion sonar counts using gillnet catches and estimate escapement using a genetic mark-recapture method. Comparison of these estimates will be used to determine whether gillnet-apportioned sonar counts may provide accurate inseason escapement estimates.

- 6. Do you believe that enumeration of sockeye salmon into Judd, Chelatna and Larson Lakes provides a good assessment of the overall stock status/health of sockeye salmon in the Susitna River drainage? The collective abundance of sockeye salmon into these three lakes seems to have declined over the past 7 years (the period of continuous weir operation). The collective counts for 2010 and 2012 are the lowest thus far. What can be done to ensure minimum escapement into each of these lakes each year?***

Yes, the department believes Chelatna, Judd, and Larson lakes' goals do provide a good assessment of the overall stock status/health of sockeye salmon in the Susitna River drainage. Escapements from Chelatna and Judd lakes' weirs adequately represent total Yentna drainage escapement as evidenced by the strong correlation ($R^2 = 93\%$) between total Yentna escapement estimated from tagging and genetic mark-recapture studies and the sum of escapements for these two lakes from 2007 to 2011. Additionally, the proportion that these two lakes represent in the Yentna drainage have been consistent (41%, 44%, 46%, 36%, and 38%, respectively; SD = 4%), suggesting that the percentage of river-rearing and lake-rearing types have been consistent in recent years. Likewise, we believe that Larson Lake escapement adequately represents total mainstem Susitna drainage escapement. From 2006 through 2008, Larson Lake weir counts represented 54%, 54% and 50% of the mainstem Susitna tagging mark-recapture estimates.

For the period 2009–2012, Chelatna Lake met or exceeded the goal two of four years, Judd Lake met or exceeded the goal three of four years, and Larson Lake met or exceeded the goal three of four years. Assuming 2009 goals are a good yardstick, we are making goals fairly consistently for these stocks. In addition, escapements in Chelatna, Judd, and Larson lakes from 2006–2008 were considered sustainable. It is our conclusion that managers are acting appropriately to provide sufficient escapement to these systems.

Susitna River sockeye salmon remain a stock of yield concern. The Susitna River sockeye salmon action plan and the *Northern District Salmon Management Plan* outline restrictions to the drift gillnet fishery and the Northern District set gillnet fishery to conserve northern-bound sockeye salmon.

Susitna River sockeye salmon escapement assessed at weirs on three systems, 2006–2012. The SEG of each lake was first implemented in 2009.

System	SEG	Escapement						
		2006	2007	2008	2009	2010	2011	2012
Larson Lake	15,000 - 50,000	57,411	47,736	35,040	41,929	20,324	12,393	16,707
Chelatna Lake	20,000 - 65,000	18,433	41,290	73,469	17,865	37,784	70,353 ^a	36,577
Judd Lake	25,000 - 55,000	40,633	58,134	54,304	43,153	18,361	39,997	18,303

^a Weir flooded from August 3–10; escapement for these days a minimum estimate.

7. *What are the management plans for Fish Creek in 2013 and beyond, what in season action have been discussed, and what are the potential triggers that will be used for in season management decisions?*

There is no management plan in regulation for Fish Creek sockeye salmon; management is designed to achieve an SEG of 20,000 to 70,000 fish monitored by a weir. In the past ten years, the goal has been achieved or exceeded seven times and narrowly missed three times. The personal use dip net fishery at Fish Creek was opened for three consecutive years from 2009–2011.

Management of the commercial fishery in 2013 will be similar to previous years. Restrictions to both the drift gillnet and Northern District set gillnet fisheries for Susitna River sockeye salmon stock of concern status will be implemented, which also benefits escapement of Fish Creek sockeye salmon. If inseason escapement monitoring at the Fish Creek weir in 2013 suggests the minimum goal will not be achieved, then additional restrictions to commercial fisheries could be implemented. These restrictions would most likely be area restrictions/closures to the Northern District set gillnet fishery.

The Fish Creek personal use fishery will also be prosecuted per regulation in 2013. The department is directed to open the fishery, by EO, upon projection of 50,000 sockeye salmon in the escapement between July 10 and July 31.

Management of the fishery beyond 2013 is uncertain. Enhancement of Fish Creek sockeye salmon that was initiated in 1975 ended in 2008. The last of the hatchery fish returned in 2012. It is not clear what the natural production of sockeye salmon will be in the Fish Creek drainage. In addition, invasive northern pike present in the drainage will also factor into productive potential.

8. *Deployment of an off shore test fishery just north of Kalgin Island occurred for the first time in 2012. A primary purpose for this project was to help ADF&G protect northern-bound coho and sockeye while adequately harvesting Kenai Peninsula sockeye salmon stocks. How would you summarize the inaugural operation of this project? What if any significant changes do you expect to implement next season? An article in the Peninsula Clarion cited ADF&G staff as stating that “genetic testing should be available late this year or early in 2013”. Is this still a reasonable expectation for genetic analyses?*

In 2012, the department initiated a five-year test fishery study in the northern part of the Central District in an attempt to better understand Susitna River sockeye salmon migration through Cook Inlet. Tissue samples are collected from sockeye salmon captured at seven different stations on a transect that runs past the north end of Kalgin Island. The samples will be run through genetic stock identification analyses at the department's genetics lab in Anchorage. Results from the analyses will determine if Susitna River sockeye salmon can be separated temporally and/or spatially from other dominant sockeye salmon stocks in Cook Inlet.

The project was a success in 2012 in that the department was able to capture salmon and collect genetic samples. The department does not plan any significant changes to the project in 2013. Genetic analyses of samples collected in 2012 will be available in early 2013; however, the results are only from a single year and therefore, in and of themselves, will not provide meaningful inferences of the spatial and/or temporal variability of estimated stock proportions.

9. *During late July ADF&G announced that the final run to the Kenai River was expected to exceed 4.6 million sockeye salmon and that "drift gill netters will have no mandatory restrictions on their regular Monday and Thursday fishing periods" (E.O. #24). Did this "expectation" turn out to be correct? Please provide your current assessment of Kenai River sockeye salmon harvests for the: sport fishery downstream of the sonar counter, personal use dip net fishery and the 2012 Upper Cook Inlet (UCI) commercial fishery. The late July news release further indicated that a final run of 6.7 million sockeye salmon was expected for UCI. What is your current estimate of the entire 2012 UCI sockeye salmon run? Your estimated break down by major stock would be useful.*

As specified in 5 AAC 21.360, *Kenai River late-Run Sockeye Salmon Management Plan*, the department conducts an inseason assessment of run-strength of sockeye salmon in Cook Inlet. The assessment is based on information from the OTF fishery, catch and escapement to date, genetics information, age composition, and run timing. This assessment is used to determine our management strategy for the remainder of the season.

The Kenai River sockeye salmon run in 2012 was 4.5 million, with a commercial harvest of 2.2 million; the total UCI sockeye salmon run was 6.4 million. The estimate of 4.5 million sockeye salmon to the Kenai River is close to 4.6 million estimated inseason and is within the margin of error for estimates of this type.

The current estimate is still considered preliminary as the department does not have genetic stock composition estimates for the commercial harvest or estimates of harvest from the Kenai River personal use and sport fisheries. Harvests from both the sport and personal use fisheries are estimated postseason. Personal use harvest is estimated from permit returns, while sport harvest is estimated by the Statewide Harvest Survey. Genetic stock composition estimates of commercial harvests and harvest estimates of the Kenai River sport and personal use fisheries will become available in 2013 and used to calculate final estimates of the 2012 Kenai River sockeye salmon run size.

Based on the inseason Kenai River sockeye run projection mentioned above, the department issued EOs to open the Kenai River personal use fishery 24 hours per day, effective July 20 (2-RS-1-46-12), and to increase the sockeye salmon bag and possession limit to six per day and 12 in possession, effective July 21, 2012 (2-RS-1-45-12). The final sockeye salmon passage estimate at the rm 19 sonar site was 1,581,555 fish, which exceeded the inriver goal of 1,350,000 fish. However, after accounting for sport harvest upstream of sonar, the final estimated escapement will likely be within the optimal escapement goal (OEG) of 700,000–1,400,000 fish and near the upper end of the SEG of 700,000–1,200,000.

Harvests in 2012, from the sport and personal use fisheries below the sonar site, are anticipated to be similar to or greater than those in 2011 because the number of sockeye salmon reaching the Kenai River was similar in both years. In 2011, the rm 19 sonar estimate was nearly 1,600,000 fish; the estimated Kenai River personal use harvest of sockeye salmon was approximately 538,000 fish; and sport harvest downstream of the rm 19 sonar was about 86,000 fish, a total harvest downstream of the sonar of nearly 625,000 sockeye salmon. These harvest estimates for 2012 will be available later in 2013.

Upper Cook Inlet sockeye salmon forecast versus actual run by river system in 2012.

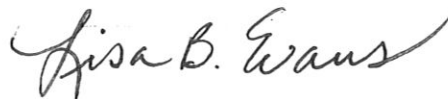
System	Forecast	Actual	Difference
Crescent River	81,000	91,000	12%
Fish Creek	84,000	32,000	-62%
Kasilof River	754,000	777,000	3%
Kenai River	4,026,000	4,472,000	11%
Susitna River	443,000	308,000	-30%
Minor Systems	808,000	682,000	-16%
Overall Total	6,196,000	6,362,000	3%

Staff look forward to meeting with you, your fellow legislators, and the public.

Sincerely,



Jeff Regnart
Director
Commercial Fisheries Division



Lisa Evans
Acting Director
Sport Fish Division

cc: Cora Campbell, Commissioner
Karl Johnstone, Chair, Alaska Board of Fisheries
Kelly Hepler, Assistant Commissioner

Matanuska-Susitna Borough FISH AND WILDLIFE COMMISSION

Wednesday, December 4, 2013, 6:00pm

MINUTES

I. INTRODUCTIONS

This was a special meeting called by the Fish and Wildlife Commission for a season update from ADF&G. The meeting was called to order at 6:05pm by Bruce Knowles at the MSB Central Fire Station in Wasilla. Quorum was established with six members present: Bruce Knowles, Ben Allen, Howard Delo, Jehnifer Ehmann, Larry Engel and Jim Colver. Also present: Frankie Barker, ADF&G staff, Mat-Su legislators (Stoltz, Hughes) and members of the public.

II. APPROVAL OF AGENDA

The agenda was approved.

III. 2013 SEASON SUMMARY

Sam Ivey, Area Management Biologist for ADF&G, indicated that their goal for the sportfishing season was to maximize fishing opportunity. For the 2013 season, they planned an 80% reduction in harvest, similar to 2012. Overall for chinook, east side streams made 5/7 goals and west side streams made 4/5 goals. The pike suppression program continued on Alexander Creek. Coho runs were above average with Fish Creek, Little Su and Deshka River meeting goals.

Pat Shields, Commercial Fisheries Manager with ADF&G reported that the commercial fishery was managed conservatively and that stocks of concern met goals but at the low end. A report *2013 Upper Cook Inlet Commercial Salmon Fishery Season Summary* was distributed.

IV. 2014 SEASON PROJECTION

Sam Ivey indicated that the sport fishing management practices for next summer will be similar to this year. Pat Shields noted the sockeye forecast of 6.1 million for next year. A *2014 Upper Cook Inlet Sockeye Salmon Forecast* handout was distributed.

V. MAT-SU RESEARCH PROJECTS

Jack Erickson with ADF&G reviewed research projects underway in the Mat-Su which are being funded through a variety of sources including AEA, USFWS, capital funds and Alaska Sustainable Salmon funds. Projects include a weir on the Little Su, Fish Creek coho weir, weir counts and aerial surveys on Lewis and Theodore Rivers, pike suppression on Alexander Creek and Yentna/Susitna radio tagging for coho and Chinook.

VI. COHO GENETICS

ADF&G staff with the genetics lab presented results of multi-year projects in Cook Inlet.

VII. LEGISLATOR COMMENTS

Rep. Stoltz commented on the need to drive better decision-making in fisheries management.

VIII. FWC MEMBER COMMENTS

Howard Delo asked about Stocks of Concern discussed by ADF&G and if Little Su coho was considered for SOC nomination. Jim Colver asked about lakes that have lost productivity and what's required to get them back. Ben Allen asked about establishing escapement goals for Deshka coho. Bruce Knowles commented that there are not sufficient escapement goals in the Mat-Su for ADF&G to effectively manage the stocks.

IX. PUBLIC COMMENTS

Several members of the public asked questions of the ADF&G staff.

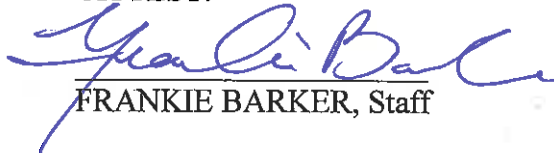
X. ADJOURN

Meeting was adjourned at 8:30pm.



LARRY ENGEL, Interim Chair

ATTEST:


FRANKIE BARKER, Staff

Matanuska-Susitna Borough
FISH AND WILDLIFE COMMISSION
 Thursday, October 28, 2014 6:00pm

MINUTES

I. INTRODUCTIONS

The meeting was called to order at 6:02pm by Larry Engel at the Wasilla Legislative Information Office. Quorum was established with six members present: Larry Engel, Howard Delo, Ben Allen, Bruce Knowles, Andy Couch and Jehnifer Ehmann. Jim Colver arrived at 6:25pm.

Also present: Sen. Charlie Huggins, Rep. Mark Neumann, Rep. Bill Stoltz, Rep. Cathy Tilton, Rep. Lynn Gattis (7:00pm), John Wood, Rex Shattuck, Jody Simpson, Frankie Barker, Terry and Joan Nininger, Roland Maw and ADF&G staff - Sam Ivey, Tom Vania, Tim McKinley, Matt Miller, Tim Baker, Pat Shields, Ben Mulligan, Andy Barclay, Chris Habicht, Nick DeCovich; and members of the public.

II. APPROVAL OF AGENDA

The agenda was approved.

III. 2014 SEASON SUMMARY

Pat Shields, ADF&G Area Management Biologist with Division of Commercial Fisheries, presented harvest numbers for 2014. He noted that based on the 2014 BOF decision, they fished drifters in the expanded corridor. Their objectives were to reduce harvest of kings and follow the management plan for sockeye. There were many restrictions on Kenai king sportfishing due to low numbers. He indicated that there is no official forecast for 2015 but they expect 5M sockeye (Kenai & Kasilof) and low numbers for kings. They don't do forecasts for cohos. Pat distributed copies of the *2014 Upper Cook Inlet Commercial Salmon Fishery Season Summary, Drift Gillnet Commercial Salmon Harvest chart*, and a letter addressed to Jack Erickson from Mark Willette (September 29, 20134) regarding sockeye salmon passage.

Sam Ivey, ADF&G Mat-Su Area Management Biologist with Sportfishing Division, spoke about the sportfishing results in the Mat-Su. ADF&G started out conservative with a goal to provide opportunity throughout full season. Fish Creek sockeye dip net fishery was opened for the first time in five years. Overall, 8 of 17 goals were achieved for kings. They were able to reduce restrictions on coho due to strong returns. He noted that there are no coho goals for the Susitna drainage.

The Fish and Wildlife Commission submitted questions to ADF&G prior to the meeting. Andy read the questions aloud and ADF&G staff responded. Questions included coho goals for Deshka and Susitna, Kenai sonar counts, king salmon management, Susitna-Yentna sockeye SOC, future SOC's, 2015 sportfish changes and 2015 commercial changes.

IV. MAT-SU RESEARCH PROJECTS

ADF&G Genetics staff reported on the second year of collections. They were able to get more samples due to extra help. Larry Engel indicated that FWC is willing to assist with funding if they know what's needed. He asked for a progress report on the genetics research.

V. 2015 LEGISLATIVE PRIORITIES

Jim Colver indicated that the Assembly has asked for \$2M for fisheries in their 2015 legislative priorities. He suggested showing legislators what's been done with funds already received. Commissioners will discuss 2015 priorities more in depth at their next regular meeting.

VI. MEMBER COMMENTS

Bruce stated that this summer was the start of a new type of management with terminal fisheries. Andy asked about the Little Su weir and coho goals. Larry commented on the expanded corridors and aerial counts of boats. Howard suggested that ADF&G needed to improve communications about management decisions. Bruce suggested that letters of appreciation be sent to BOF members who are up for reappointment.

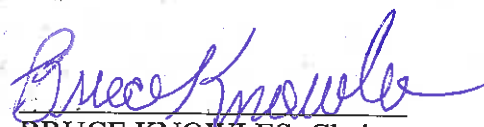
VII. PUBLIC COMMENTS

Members of the public asked about pike suppression programs and other fisheries problems.

XVII. ADJOURN

Meeting was adjourned at 9:35pm.

ATTEST:


FRANKIE BARKER, Staff
BRUCE KNOWLES, Chair

Questions for ADFG meeting, October 28, 2014, Wasilla LIO.

1) Coho Goal for Deshka River: The weir on the Deshka River has been operated annually since 1995 for counting king and coho salmon. The king salmon escapement goal been established. Due to flooding, the department has not been able to establish a coho escapement goal. When do you expect to be able establish a coho goal for the Deshka River?

2) Coho Goal for Susitna River: There has been a discussion with senior managers that a single escapement goal is being considered for the entire Susitna River for cohos. How long does ADF&G figure it will take to get sufficient data to establish a single Susitna River coho salmon escapement goal ? How would ADF&G determine a coho salmon stock that adequately represents spawning escapement levels for the more than 17 streams that are currently in place for Susitna River king salmon?

3) Kenai Sonar Counts: This past summer daily reporting of the Kenai River sockeye escapement was discontinued by ADF&G because of species apportionment problems. Too many pink salmon entering the river! How confident are you with the accuracy of the recently released sonar count of 1,524,707?

4) King Salmon Management: In the Northern District drainages, the Board of Fisheries has designated 6 king salmon stocks as Stocks of Concern. Since a stock of concern action plan was developed in 2011, ADF&G further restricted both sport and commercial king salmon fishing on Northern Cook Inlet stocks in attempts to achieve minimum spawning escapement goal levels. In 2012, 4 out of 16 Northern Cook Inlet streams with king salmon spawning escapement goals were met. In 2013, 11 of the 17 goals counted that year were achieved. Over those two years, this represents less than a 50% attainment level of established Northern King Salmon goals.

In 2014, ADF&G closed ALL main stem Susitna River tributary streams except Deshka River to king salmon harvest. In addition, by previous Board of Fisheries action, all sport king salmon fishing was closed by regulation on Chuitna River, Lewis River, and Theodore Creek with emergency sport regulations on all other Northern King salmon streams made to GREATLY reduce harvest throughout the 2014 season. Further, in-season the already restricted Little Susitna River king salmon fishery was closed for a portion of the season because of lack of king salmon escapement.

In regards to the above facts, please have a commercial fisheries manager explain why it was appropriate to remove all remaining emergency restrictions from the Northern District commercial fishery for the last two periods of the 2014 commercial season? Please explain how expanding commercial opportunity affected meeting king salmon escapement goals in 2014 when ADF&G failed to attain 9 of the 17 goals monitored. How does liberalizing the whole Northern District commercial fishery affect shared conservation burden between sport and commercial fisheries?

5) Susitna-Yentna Sockeye SOC: The Susitna-Yentna sockeye stock was declared a stock of concern at the 2008 UCI meeting. Regulations require ADF&G to develop an action plan for a stock of concern to use in managing that stock back to a healthy status. In the six years since the declaration of SOC status for the Susitna-Yentna sockeye stock, we have only seen a continuing decline in return numbers. Even with a change in how escapements are determined in this drainage, the return numbers continue to decline. That stock is worse off today than when it was originally declared a SOC.

Obviously, the action plan ADF&G developed for this stock has failed. What does ADF&G propose to change in the existing action plan for this stock to attempt to achieve a return to healthy escapement numbers? What timeframe is the department looking at order to claim a successful turn-around in declining numbers of fish?

6) Future Stocks of Concern: The salmon stocks in the Matanuska-Susitna Borough have the undesirable distinction of having the most Stocks of Concern in the state (8 of 12). Additional SOC's have been added at each UCI BOF meeting for many cycles. What stocks is ADF&G concerned about and considering adding to the SOC list?

7) 2015 Sport Fish Changes: (For a sport fish manager) Looking forward to the 2015 season, what adaptive pre-season sport fishery management changes might be appropriate to both ensure the Little Susitna River king salmon sport fishing/harvest remains open for the duration of the season, and to ensure adequate king salmon spawning escapements for Northern streams with recent problems reach established escapement goal levels?

8) 2015 Commercial Changes: (For a commercial manager) Looking forward to the 2015 season, what adaptive preseason and in-season commercial changes might be appropriate to both ensure northern sport king salmon fisheries remain open to king salmon fishing/harvest for the duration of the season and to ensure better attainment of Northern king salmon escapement goals?

Questions for Alaska Department of Fish & Game at Mat-Su Fisheries Meeting, October 28, 2015

1) Preseason King Salmon Regulations: The public has difficulty understanding how the Department sets preseason emergency king salmon fishing regulations based on ADF&G's Deshka River outlook and / or other indices that may be used. Please explain this process. Commission members also request to know the largest ADF&G preseason Deshka River king salmon outlook under which ADF&G has failed to attain the lower bound of the Deshka River king salmon escapement goal range (13,000 — 28,000). For the upcoming season, how large of a Deshka River king salmon projection would ADF&G need to start the May - July 13, 2016 season using standard Deshka River sport fishing regulations printed in the current regulation book? Would this number be any different if ADF&G allowed standard Deshka River regulations only upstream of the Deshka River / Susitna River confluence area at the start of the open water season?

2) King Salmon Restrictions: Please explain why, when ADF&G weir counts indicate adequate king salmon to attain escapement goals, the Department had been returning the use of bait and multiple hooks, in the sport fishery, and returning the Northern District set net fishery to standard regulations BEFORE reinstating the annual sport limit of 5 king salmon per year. What percentage of sport harvest reduction does ADF&G figure occurs from reduction in the annual king salmon limit? When ADF&G reduces the annual king salmon limit, is there a corresponding increase in the number of anglers fishing proxies for king salmon? How many Mat-Su king salmon were harvested by standard harvest and by proxy harvest in the 5 most recent years ADF&G has data? Isn't an annual limit reduction pointless, if a significant portion of that harvest reduction is simply transferred to proxy harvest?

3) King Salmon Harvest in Highway accessible Susitna River streams: The public has expressed interest in an opportunity to harvest king salmon from Highway accessible Susitna River tributary streams, and king salmon escapement numbers have been depressed in this area for more than 5 years. Please discuss how and when the Department plans to return sport king salmon harvest opportunity to these streams. Emergency king salmon regulations in the Mat-Su Valley have had different implementation dates since 2012. Please discuss the consequences of these different dates — how many more Mat-Su king salmon would the Department expect to be harvested with a sport fishing emergency regulation implementation date of June 1? and May 16? when compared to the current May 1.

4) Offshore Test Fishery: The Northern offshore test fishery was cancelled this year because of contract issues. Was funding for this capital project used in 2015? If so, on what activities? Will there be an attempt to activate the northern test fishery in 2016? If not, why not?

5) Stock of Yield Concerns: The Department has issued early season emergency orders seeking to reduce Northern Cook Inlet king salmon harvest up to 50% or greater for each of the past 4 years, and may likely issue similar emergency regulations in 2016. Under these circumstances, which Northern Cook Inlet king salmon stocks does the Department intend to nominate for Stock of Yield Concern for the next Upper Cook Inlet Board of Fisheries meeting? Which king salmon regulations are the Department considering submitting proposals to change at this meeting?

6) Coho harvests: In response to a large 2015 weir—measured coho salmon escapement, the Department issued an emergency order increasing the Little Susitna River coho salmon bag limit from 2 to 3 fish starting August 6th (the opening day of bait fishing / and traditionally the busiest fishing day of the year on Little Susitna River). Some anglers had expressed a desire to see an earlier opening to the bait fishery as the first step to liberalizing harvest of Little Susitna River coho, in a manner that would likely provide less crowded fishing conditions. Please discuss the pro and cons of both actions. In times of abundance, when would the department be willing to allow an earlier Little Susitna River bait fishing opportunity, in lieu of expanded coho bag limit?

7) ADF&G Research Priorities: UCI supports a complex mixed stock commercial fishery. What are three or so high ranking research priorities that might assist your management of this fishery? And what are three priority research activities that should help manage Northern Cook Inlet sport salmon fisheries?

8) Salmon Genetics: What was accomplished this year regarding expanding the genetic baseline data for UCI salmon?

9) Drift gillnet and Set gillnet Harvests: It has always been understood by most folks around Cook Inlet that ADF&G attempted to manage the commercial salmon harvest in the Central District in such a manner that the catch was fairly evenly divided between the two commercial gear groups, recognizing that events outside anyone's control could influence how much each group caught in any given year: for example, the Exxon Valdez oil spill and its influences on the 1989 harvest. Would the department please list the percent of the total commercial catch each of the two commercial gear groups: drift gillnet and set gillnet, caught in the Central District for the past ten years and then explain some reasons why the percentage of catch was or was not fairly equal over those same ten years.

10) Little Su River Coho Weir counts: In 2013, the Coho weir count was 13,583; in 2015 it was 12,421; but in 2014 it was double, 24,211. Is there an explanation for the 2014 spike? Related to this, what was the total Coho count of the Little Su angler Exit Survey last year and this year? Looking at the bigger picture, could this be related to the lower return of Coho's on upper Jim Creek this year?

11) Deshka River Coho goal: Although discussed last year, why has there not been a Coho goal set for the Deshka River given that there is a weir in place?

Questions for Alaska Department of Fish & Game at Mat-Su Valley Fisheries Meeting, October 28, 2015

Preseason King Salmon Regulations: The public has difficulty understanding how the Department sets preseason emergency king salmon fishing regulations based on ADF&G's Deshka River outlook and / or other indices that may be used. Please explain this process. Commission members also request to know the largest ADF&G preseason Deshka River king salmon outlook under which ADF&G has failed to attain the lower bound of the Deshka River king salmon escapement goal range (13,000 — 28,000). For the upcoming season, how large of a Deshka River king salmon projection would ADF&G need to start the May - July 13, 2016 season using standard Deshka River sport fishing regulations printed in the current regulation book? Would this number be any different if ADF&G allowed standard Deshka River regulations only upstream of the Deshka River / Susitna River confluence area at the start of the open water season?

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Offshore Test Fishery: The Northern offshore test fishery was cancelled this year because of contract issues. Was funding for this capital project used in 2015? If so, on what activities? Will there be an attempt to activate the northern test fishery in 2016? If not, why not?

Stock of Yield Concerns: The Department has issued early season emergency orders seeking to reduce Northern Cook Inlet king salmon harvest up to 50% or greater for each of the past 4 years, and may likely issue similar emergency regulations in 2016. Under these circumstances, which Northern Cook Inlet king salmon stocks does the Department intend to nominate for Stock of Yield Concern for the next Upper Cook Inlet Board of Fisheries meeting? Which king salmon regulations are the Department considering submitting proposals to change at this meeting?

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Salmon Genetics: What was accomplished this year regarding expanding the genetic baseline data for UCI salmon?



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

24
Department of
Fish and Game

DIVISIONS OF SPORT FISH
AND COMMERCIAL FISHERIES
Anchorage Office

333 Raspberry Road
Anchorage, Alaska 99518-1565

Date: October 27, 2016

To: Members of Mat-Su Borough Fish and Wildlife Commission

From: Sport Fish and Commercial Fisheries Staff

Subject: Questions and Department responses for meeting on October 27, 2016

The Mat-Su Borough Fish and Wildlife Commission submitted questions to the department in preparation for the meeting regarding Cook Inlet fisheries. The original questions and department responses are provided below.

1. Escapement Goals for Susitna Sockeye

Your recommendation to reduce escapement goal ranges for all four Northern Cook Inlet (NCI) sockeye salmon SEG's has generated considerable discussion and in some cases criticism. Without question, SEG's for Susitna sockeye were developed from limited data to augment and improve existing information by adding a time series of data while the stock is "unhealthy" and labeled a SOC.

- *Please explain why you believe the use of Judd Lake escapements since 2009 (which were below minimum goal 4 of 7 years) improves the SEG for this stock. Similarly, why is it timely to use "new" Larson Lake data that missed minimum standards 3 out of 8 years?*

ADF&G Response: The Clark et al. (2014) percentile approach sets an SEG range that is most likely to bracket Smsy based upon simulation studies conducted using parameter ranges from salmon stocks with complete productivity and harvest rate data. The methodology only limits use of available historic escapement data based upon measurement error or enhancement effects.

The current SEG for Judd Lake sockeye (25,000–55,000 fish) was established in 2009 from 7 years of weir estimates collected from 1973–2008. The current SEG of Larson Lake sockeye salmon (15,000–50,000 fish) was developed from 12 years of weir estimates collected from 1984–2008. All escapements observed since 2009 were within the historical range of escapements observed historically. Staff believes it is appropriate to utilize a peer-reviewed methodology and to include the entire time series of escapement estimates when applying this updated analysis. It was not unanticipated that the lower and upper bounds for these goals would decrease since the percentiles for the 3-tier approach are 20–60 percent rather and the percentiles for the 4-tier approach are 25–65 percent.

- *What are the benefits of reducing the upper range of the Chelatna Lake goal by 20,000 fish in light of the system's estimated potential to produce 398,000 adults using ADF&G created euphotic volume measurements?*

October 27, 2016

ADF&G Response: Clark et al. (2014) concluded that the upper bound of SEG's set using the Bue and Hasbrouck approach may be unsustainable in that they are close to or exceed carrying capacity. The euphotic volume method is based upon the rearing capacity of the lake, and thus it assumes that salmon production is not limited by available spawning habitat. Since Chelatna Lake has likely not produced a return of 398,000 adults during the period of monitoring since 2006, further assessment is needed to determine whether sockeye salmon production in this system is spawning limited.

- *Do you have an explanation for NCI sockeye goals trending downward (Fish Creek once 50,000, then 20,000 and now 15,000 minimum) and Susitna goals, both weir and sonar dropping, whereas minimum Kenai Peninsula goals have increased through time? Kenai River was once 150,000 and now is 700,000 while Kasilof River grew from 75,000 to 160,000.*

ADF&G Response: NCI and Kenai Peninsula sockeye salmon escapement goals are reviewed concurrently on a 3-year cycle that corresponds to the Board of Fisheries regulatory cycle. Fish Creek, Judd, Larson, and Chelatna Lake are assessed with fish weirs and their current SEGs were developed using the percentile approach, whereas the Kenai and Kasilof River sockeye salmon escapement goals were developed from stock-recruit relationships. The escapement goal committee recommends goals be modified when additional information from the extended time series or a new methodology dictates a change in the goal.

2. Three Tier Method

We noted that Clark et al. 2014 recommended that the current 4-tier Percentile Approach for SEG development (used statewide since 2002) be replaced with the 3-tier method used to down size NCI sockeye goals and to develop new goals for Deshka and Little Susitna stocks. Why wasn't the new 3-tier method used to also evaluate NCI Chinook salmon SEG's? Or was it used? Can or would you provide us with SEG's for the seven NCI Chinook salmon SOC using the 3-tier approach?

ADF&G Response: All NCI Chinook salmon escapement goals were evaluated using both the Bue and Hasbrouck (unpublished) and Clark et al. (2014) percentile approach methods with data through 2015. Fishery scientists recommended the Clark et al. method be considered for developing new goals and for updating current goals if new data dictated a change. We found no obvious reason to change NCI king goals, especially considering the tendency for reduced goals if incorporating recent low count years, which in some cases such as Alexander Creek, have been very low. In the case of Deshka king and Little Su coho, there was little difference between the two methods. In the case of new goals for Deshka coho and Little Su king, the new method was used.

3. Kenai Sockeye Forecast

Your 2016 preseason forecast for Kenai sockeye was estimated to be greater than 4.6 million fish which minimizes regulations designed to pass NCI stocks through the drift fishery. On July 26, 2016, by news release, you affirmed the preseason forecast knowing then that the run had to be late to achieve your preseason estimate. Post season, you estimated the run was actually only

October 27, 2016

3.5 million sockeye. What in-season factors led you to believe the run was late rather than much smaller than forecasted?

ADF&G Response: Inseason sockeye salmon run forecasts are developed by fitting the current year's offshore test fishery catch per effort data to run timing curves from previous years (1979–2015). On July 26, this curve fitting algorithm indicated that the sockeye salmon run would be 4–9 days late. The mean forecast error is 8.4% on July 26; when the inseason sockeye salmon run size is typically forecasted.

4. Susitna River Studies

Numerous mark and recapture estimates and studies have been conducted on the Susitna drainage salmon since 2006. These studies have been performed by various agencies and individuals and in some case are difficult to locate. At times, results are not published or made available to the public for years after the fieldwork is completed. We further note that fieldwork findings are often used by staff for various facets of work before results are formally published. Please provide a summary of all Chinook, coho, sockeye and chum salmon estimates for Susitna River drainage since 2006. Unpublished preliminary estimates (if any) will be appreciated.

ADF&G Response: See attached spreadsheets for a summary of abundance estimates (and associated reports) provided by SF and CF divisions (Worksheet Q4). Additional ADF&G published reports relating to the Susitna River drainage can be obtained from the searchable database at: <http://www.adfg.alaska.gov/sf/publications/>

5. Sockeye Productivity Data

During the past decade new and improved genetic stock identification (GSI) programs have greatly added to the understanding of sockeye salmon stock productivity within UCI. What productivity differences have you found for Kenai Kasilof and Susitna drainage sockeye salmon (return per spawner measurements, etc)? Are you able to develop stock productivity estimates for a combined Judd, Chelatna and Larson Lakes group versus all other Yentna and Susitna river stocks (Su Yen)? If so, please provide this info. We would also welcome productivity data on Fish Creek sockeye.

ADF&G Response: Table Q5.–Productivity estimates (return per spawner) for sockeye salmon returning to Cook Inlet. JCL = Judd, Chelatna and Larson Lakes. SuOther = Susitna River systems not including JCL.

Stock	Date Period	Return per Spawner		
		Minimum	Average	Maximum
Kenai	1969-2009	1.4	4.5	12.7
Kasilof	1969-2009	0.7	4.1	8.4
Fish Creek	1972-2009	0.1	3.9	21.8
Susitna	2006-2009	1.1	1.3	1.4
JCL	2006-2009	1.0	1.4	2.2
SuOther	2006-2009	0.9	1.2	1.7

Note: Data for Susitna River, JCL and SuOther are preliminary.

6. Willow Creek Chinook Hatchery Fish

Willow Creek has been stocked nearly every year since 1985 with Chinook salmon. Please provide us with your 'best guess' for the annual harvest of these hatchery fish since Willow Creek was declared a SOC.

ADF&G Response: Willow has been a stock of yield concern since 2011. New regulations according to the action plan were in effect for the 2011 season and the resulting harvest was 282 fish. 2012 was the first year the department implemented a preseason strategy to comprehensively reduce harvest throughout NCI. Harvest was allowed on Willow through the second Monday in June, then catch-and-release (C&R) only for 3 consecutive 3-day weekends. Harvest in 2012 was 13 fish. As only C&R fishing has been allowed on Willow Creek since 2012, no fish have been harvested 2013-2016.

What was the estimated return of hatchery fish to Willow Creek during these same years?

ADF&G Response: Estimates of hatchery fish returning to Willow Creek have not been made since the early 1990's when creel and escapement studies were used to evaluate performance. Aerial surveys of Deception Creek: 180 fish counted in 2011, 350 fish in 2012, 350 fish in 2013, and 700 in 2014. Stream conditions have not allowed counting in 2015 and 2016, however, we estimate that 500-600 kings have returned to the Deception Creek weir in the past two years, of which, about ½ have been hatchery produced fish. We have not met egg take goals since 2013 for stocking Willow Creek (only permitted to use naturally produced fish). Fortunately, we have been able to use a small portion of the hatchery fish to contribute to stocking Eklutna Tailrace (Ship Creek has contributed the majority of the smolt for Eklutna).

And what is the estimated cost of the system's stocking program during recent years?

ADF&G Response: Average cost of production is \$0.40 per smolt or \$60,000 for 150,000 fish release.

Your thoughts regarding future stocking at Willow Creek will be appreciated.

ADF&G Response: It has been a struggle to keep this program going during this downturn. This program was built on years of favorable production and even still, at its best, survivals were only 1.5% vs the planned 3%. In recent years smolt to adult survivals in other areas of the state have been only a quarter of a percent and Deception survivals are likely similar. Our goal has been to increase stocking to offset poor survivals, as we have done at Eklutna, and eventually provide some opportunity to harvest hatchery fish in Willow Creek (note that in order for this opportunity to occur, the wild stock on Willow Creek would need to be able to withstand additional C&R pressures, which is questionable at this time). Unfortunately returns to the Deception Creek brood collection weir have been low, particularly the naturally produced component, which we are permitted to use as brood for Willow. Also in the past three years we've experienced flooding and breaching of the weir, which has compounded the problem, resulting in loss of a portion of the brood stock. The issues we have faced include difficulty acquiring enough naturally produced brood in Deception Creek to even stock at the current target level of 200,000. We are continually discussing the viability of this program during these down

years. The benefits of continuing the program include 1) unknown difficulty restarting the same program later given increased statewide focus on maintaining genetic integrity of wild stocks, 2) ensuring no time is lost reestablishing a hatchery run, which can take over 5 years, if rebound in marine survivals improves in the near future, and 3) there is benefit in using a small number of hatchery brood each year to supplement stocking of the Eklutna Tailrace.

7. Chinook Catch & Release – Eastside Susitna

Chinook salmon runs to the eastside tributaries of the Susitna River (Unit 2 & Unit 5) have generally been below average for about 10 years. We assume this trend may continue because you are recommending no changes to the area's SOC status. While we fully support the no harvest regulations for eastside fisheries, we have some reservations regarding allowing catch and release on these SOC populations. We realize catch and release is designed to provide some form of fishing opportunity during stock recovery, however, we are uncertain as to just how much this practice might reduce the pace of recovery. Please provide estimates of the annual catch and release take from eastside tributaries between Willow and Montana Creeks. Also provide an estimate of the mortality associated with catch and release of eastside Chinook salmon.

ADF&G Response: See Table #Q7- estimates of catch-and-release and mortality based on 8%.

8. Fish, Cottonwood & Wasilla Creek coho

You have indicated that enumeration of Fish Creek coho salmon escapement via weir is a reasonable indicator of escapement abundance in nearby Wasilla and Cottonwood Creeks. Therefore, SEG's have not been established for these adjacent systems although escapements are enumerated by foot. This summer, regulations were relaxed at both Wasilla and Cottonwood Creeks based on the in-season Fish Creek coho escapement. Was the 2016 Fish Creek count a reliable measure of strong escapements into Wasilla and Cottonwood Creeks?

ADF&G Response: A past study found coho salmon weir counts on these streams to be significantly correlated and this relationship has been used inseason to liberalize and restrict these fisheries in the past, based upon weir counts at Fish Creek. Even a good relationship doesn't hold up 100% of the time and this one may not have in 2016. However, there is no way to know because the Fish Creek weir was pulled August 15 at the end of the sockeye season when historically only 35% of the coho would have been counted. It is possible that while the goal had been achieved, the Fish Creek escapement may have ended up below average as was the case at Cottonwood and Wasilla creeks.

9. Yentna River Sonar Studies

Sonar, as we all know, was formerly deployed to measure the daily passage of sockeye into the Yentna River but because of enumeration errors the Bendix sonar was replaced by weirs in 2009. Studies to determine if sonar errors could be corrected were continued at the Yentna River (DIDSON evaluation, species apportionment, etc). Please summarize the results of these recent sonar studies on the Yentna River. Bottom line-do you think sonar will ever again be used on the Yentna River?

ADF&G Response: Fish wheel selectivity studies developed models that corrected for the species selectivity of fish wheels during the years of the study. However, the accuracy of these model corrections in future years is uncertain due to possible changes in channel configuration and subsequent changes in fish wheel configuration. Additional studies using genetic mark-recapture abundance estimates for comparison will be needed to improve our confidence in species-apportioned sonar estimates of sockeye salmon passage.

The Yentna River sonar was last operated in 2014 and genetic samples were last collected in 2015. The department does not anticipate operating a sonar on the Yentna in the near future.

10. UCI Fisheries Management Plan

The U.S. Ninth Court of Appeals recently sided with the Upper Cook Inlet Drift Fishery Assoc. (UCIDA) in regards to the management of the UCI salmon fishery. The court ruled that the North Pacific Fishery Council must develop a fishery management plan (FMP) for UCI that is in compliance with the Magnuson-Stevens Act (MSA). It appears that federal policy makers and the State will now be required to develop a FMP. UCIDA's complaint, among many things, claims that the State's escapement goal-based management leads to over escapement, thus lost harvests, and should be replaced by annual catch limits or an appropriate proxy for catch limits. Seasonal catch limits are, of course, the corner stone for most federally managed fisheries in the EEZ waters off Alaska. What positive or negative issues do you see associated with the development of a MSA based FMP for Cook Inlet salmon? How would public input be accommodated in the development of such a FMP?

ADF&G Response: We await further direction from the courts and are unable to speculate about the effects that the court case will have on management of salmon fishing in the portions of Cook Inlet that fall within the EEZ for the upcoming season. We also need time to confer with other agencies on the potential effects of the decision. When the North Pacific Fishery Management Council develops fishery management plans, there are opportunities for public input in accordance with federal law.

11. Little Susitna King Salmon Fishery

Please explain why ADF&G did not allow the use of bait in the Little Susitna River king salmon fishery until 6 days after the weir-based in-season management range was exceeded, but later in the season, the Department liberalized the Fish Creek sport salmon fishery before attaining the midpoint of the Fish Creek coho salmon goal range? What regulations or policies does the Department follow when liberalizing a sport fishery in season other than managing for maximum benefit?

ADF&G Response: Fish Creek coho management is very different than Little Susitna king management. First, any actions taken in recent years in a king fishery have tended to be more conservative due to the current statewide downturn and uncertainty in production. Another difference is fishing power- management actions have more of an effect on harvest at the Little Susitna overall because the potential for high exploitation is much greater (45% for Little Susitna king vs 10% for Fish Creek coho on average) than at Fish Creek. However, the greatest difference in management between the two sites has to do with the position of the weir relative to the fishery. No coho harvest occurs upstream of the Fish Creek weir unlike on the Little Susitna

October 27, 2016

River. This leads into the second part of the question having to do with guidelines the department follows when liberalizing a fishery.

EO authority given under 5 AAC 75.003 states that the department may liberalize a fishery if the projected escapement exceeds the goal range and the anticipated increase in harvest as a result of the liberalization will not reduce the escapement below the goal. This is a consideration at Little Susitna, both for kings and coho, but not at Fish Creek where all harvest takes place downstream of the weir. In addition, the escapement goal for Little Susitna kings is based upon the post season aerial survey, not the weir. Therefore the department has tended to be cautious when liberalizing the king fishery based upon a developing relationship between the weir counts and subsequent aerial survey. The department is recommending a new weir based goal which should lead to more timely management actions.

12. Drift Fishery Management

For the Commercial fishery, why does the ADF&G claim to be “. . . in compliance with the 1% clause in the Drift fishery management plan . . .” when for the past two seasons, it has allowed MORE THAN two consecutive drift fishery periods in August with the fleet harvesting less than 1% of its season total of sockeye salmon before restricting the drift fleet to Areas 3 and 4?

ADF&G Response: The fishing periods used to “determine that less than one percent of the season's total drift gillnet sockeye salmon harvest has been taken per fishing period for two consecutive fishing periods in the drift gillnet fishery” (5 AAC 21.353(e)) are the regular fishing periods outlined in 5 AAC 21.353(d)(1), (2) and (3). Harvests from fishing periods allowed in the corridor (regular or expanded) are not “regular” fishing periods and therefore are not used in the calculation of the one-percent rule. The board and public strongly supported using the drift fleet in the regular and expanded corridors instead of in the middle of the inlet. Two regular district-wide fishing periods were restricted to Drift Areas 3 & 4 based on the one-percent rule in both 2014 and 2016.

Table Q#2. - Results of updating SEGs for NCI Chinook stocks of concern with both percentile methods, and data thru 2015.

	Alexander Creek	Chuitna River	Theodore River	Lewis River	Willow Creek	Sheep Creek	Goose Creek
Current Escapement Goal							
Lower Bound	2,100	1,200	500	250	1,600	600	250
Upper Bound	6,000	2,900	1,700	800	2,800	1,200	650

Old Percentile Method, counts thru 2015

	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>
Lower Bound	570 <i>lower</i>	1,100 <i>lower</i>	350 <i>lower</i>	100 <i>lower</i>	1,400 <i>lower</i>	500 <i>lower</i>	100 <i>lower</i>
Upper Bound	5,500 <i>lower</i>	2,200 <i>lower</i>	1,500 <i>lower</i>	790 <i>lower</i>	2,800 <i>same</i>	1,100 <i>lower</i>	560 <i>lower</i>

New Percentile Method, counts thru 2015

	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>	<i>effect</i>
Lower Bound	900 <i>lower</i>	1,000 <i>lower</i>	400 <i>lower</i>	100 <i>lower</i>	1,300 <i>lower</i>	400 <i>lower</i>	120 <i>lower</i>
Upper Bound	2,700 <i>lower</i>	1,700 <i>lower</i>	1,100 <i>lower</i>	550 <i>lower</i>	2,400 <i>lower</i>	900 <i>lower</i>	380 <i>lower</i>

Table Q#4. - A partial list of salmon abundance and distribution studies in the Susitna River since 2006, conducted by the Alaska Department of Fish and Game.

"Mainstem Susitna River" is the Susitna River drainage upstream of the Yentna River confluence.

All abundances were obtained by mark-recapture methods.

Species	Return Year	Mainstem Susitna River	Yentna River	Total	Report
		Abundance Estimate	Abundance Estimate	Abundance Estimate	
Sockeye	2006	107,000	311,197	418,197	FDS 07-83
Salmon	2007	87,883	239,849	327,732	FDS 11-19
	2008	70,552	288,988	359,540	FDS 11-12
Coho	2009	Not Done	Not Done	Not Done	FDS 10-72
Salmon	2010	73,640	122,777	196,417	FDS 13-05
	2011	131,878	84,677	216,555	FDS In prep.
	2012	90,397	93,919	184,316	FDS In prep.
	2013	130,026	Not Done	Not Done	AEA 2014
	2014	84,879	73,819	158,698	AEA 2015, FDS In prep.
	2015	97,789	under way	under way	preliminary estimate
	2016				
Chum	2009	Not Done	Not Done	Not Done	FDS 10-72
Salmon	2010	151,127	205,869	356,996	FDS 13-05
	2011	1,468,231	283,801	1,752,032	FDS In prep.
	2012	229,903	99,442	329,345	FDS In prep.
Chinook	2012	Not Done	Not Done	Not Done	AEA 2013
Salmon	2013	89,463	Not Done	Not Done	AEA 2014
	2014	68,225	22,267	90,492	AEA 2015
	2015	88,600	48,400	137,000	FDS In prep.
	2016	under way	under way	under way	
	2017	planned	planned		
Pink	2012	Not Done	Not Done	Not Done	AEA 2013
Salmon	2013	Not Done	Not Done	Not Done	AEA 2014
	2014	Not Done	Not Done	Not Done	AEA 2015

FDS is Fishery Data Series, published by the Alaska Dept. Fish & Game, Anchorage

Cleary, P.M., R. A. Merizon, R. J. Yanusz, and D. J. Reed. 2013. Abundance and Spawning Distribution of Susitna River chum *Oncorhynchus keta* and coho *O. kisutch* salmon, 2010.

Alaska Department of Fish and Game, Fishery Data Series No. 13-05, Anchorage.

Cleary, P. M., R. J. Yanusz, J. W. Erickson, D. J. Reed R. A. Neustel, and N. J. Szarzi. XXXX.

Abundance and spawning distribution of Susitna River chum *Oncorhynchus keta* and coho *O. kisutch* salmon, 2011. Alaska Department of Fish and Game, Fishery Data Series No. XX-XX, Anchorage.

Cleary, P. M., R. J. Yanusz, J. W. Erickson, D. J. Reed R. A. Neustel, J. P. Bullock and N. J. Szarzi. XXXX.

Abundance and spawning distribution of Susitna River chum *Oncorhynchus keta* and coho *O. kisutch* salmon, 2012. Alaska Department of Fish and Game, Fishery Data Series No. XX-XX, Anchorage.

AEA 2013-Yanusz, R.J., P. Cleary, S. Ivey, J.W. Erickson, D.J. Reed, R. Neustel, and J. Bullock. 2013.

Distribution of Spawning Susitna River Chinook *Oncorhynchus tshawytschyha* and Pink Salmon *O. gorbuscha*, 2012. Alaska Energy Authority. Susitna-Watana Hydroelectric Project. Anchorage.

AEA 2014- LGL Research Associates, Inc., and Alaska Department of Fish and Game,

Division of Sport Fish. 2014. Initial Study Report

Part A: Sections 1-6, 8-10. Susitna-Watana Hydroelectric Project, Anchorage.

AEA 2015- LGL Research Associates, Inc., and Alaska Department of Fish and Game,

Division of Sport Fish. 2015. Salmon Escapement Study, Study Plan

Section 9.7. Study Completion Report.

Susitna-Watana Hydroelectric Project, Anchorage.

Table Q#7. Unit 2 Susitna River drainage Chinook salmon catch by fishery, 2012-2015.

Year	Willow Creek	Lt. Willow Creek	Kashwitna River	Caswell Creek	Sheep Creek	Goose Creek	Montana Creek	Birch Creek	Sunshine Creek	Total
2012	198	14	8	14	17	13	468	0	0	732
2013	385	294	0	0	278	212	1,371	15	531	3,086
2014	561	137	101	10	795	0	357	0	31	1,992
2015	1724	162	744	0	53	0	284	0	0	2,967
mean	717	152	213	6	286	56	620	4	141	2,194

Unit 2 Susitna River drainage Chinook salmon catch-and-release mortality ^a by fishery, 2012-2015.

Year	Willow Creek	Lt. Willow Creek	Kashwitna River	Caswell Creek	Sheep Creek	Goose Creek	Montana Creek	Birch Creek	Sunshine Creek	Total
2012	16	1	1	1	1	1	37	0	0	59
2013	31	24	0	0	22	17	110	1	42	247
2014	45	11	8	1	64	0	29	0	2	159
2015	138	13	60	0	4	0	23	0	0	237
mean	57	12	17	0	23	5	50	0	11	176

^a estimates based on 8% mortality rate on fish released.

Summary of escapement and passage estimates for Susitna River salmon (2006-2016). Estimates have not been verified against Source Report and some values are preliminary.					
Escapement/fish passage*	Species	System	Methodology	Year Dates	Source Report
11,745	chum	Yentna River	Bendix Sonar	2006 July 7 - Aug 12	Westerman, D. L., and T. M. Willette. 2007. Upper Cook Inlet salmon escapement studies, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 07-82, Anchorage.
8,120	chum	Yentna River	Bendix Sonar	2007 July 7 - Aug 16	Westerman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 10-14, Anchorage.
10,212	chum	Yentna River	Bendix Sonar	2008 July 7 - Aug 10	Westerman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-16, Anchorage.
23,048 - 64,553	chum	Yentna River	DIDSON Sonar	2009 July 7 - Aug 12	Westerman, D. L., and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 11-33, Anchorage.
41,657 - 103,462	chum	Yentna River	DIDSON Sonar	2010 July 7 - Aug 15	Westerman, D. L. and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-66, Anchorage.
64,304-130,398	chum	Yentna River	DIDSON Sonar	2011 July 7 - Aug 15	Westerman, D. L., and T. M. Willette. 2012. Upper Cook Inlet salmon escapement studies, 2011. Alaska Department of Fish and Game, Fishery Data Series No. 12-83, Anchorage.
15,025-43,143	chum	Yentna River	DIDSON Sonar	2012 July 7 - Aug 15	Westerman, D. L., and T. M. Willette. 2013. Upper Cook Inlet salmon escapement studies, 2012. Alaska Department of Fish and Game, Fishery Data Series No. 13-30, Anchorage.
13,297 - 41,476	chum	Yentna River	DIDSON Sonar	2013 July 7 - Aug 6	Glick, W. J., and T. M. Willette. 2015. Upper Cook Inlet sockeye salmon escapement studies, 2013. Alaska Department of Fish and Game, Fishery Data Series No. 15-25, Anchorage.
19,581 - 58,790	chum	Yentna River	DIDSON Sonar	2014 July 7 - Aug 8	Glick, W. J., and T. M. Willette. 2016. Upper Cook Inlet sockeye salmon escapement studies, 2014. Alaska Department of Fish and Game, Fishery Data Series No. 16-30, Anchorage.
130,952	coho	Yentna River	Bendix Sonar	2006 July 7 - Aug 12	Westerman, D. L., and T. M. Willette. 2007. Upper Cook Inlet salmon escapement studies, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 07-82, Anchorage.
39,957	coho	Yentna River	Bendix Sonar	2007 July 7 - Aug 16	Westerman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 10-14, Anchorage.
33,784	coho	Yentna River	Bendix Sonar	2008 July 7 - Aug 10	Westerman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-16, Anchorage.
52,536 - 330,232	coho	Yentna River	DIDSON Sonar	2009 July 7 - Aug 12	Westerman, D. L., and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 11-33, Anchorage.
39,200 - 196,094	coho	Yentna River	DIDSON Sonar	2010 July 7 - Aug 15	Westerman, D. L., and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-66, Anchorage.
27,459-161,685	coho	Yentna River	DIDSON Sonar	2011 July 7 - Aug 15	Westerman, D. L., and T. M. Willette. 2012. Upper Cook Inlet salmon escapement studies, 2011. Alaska Department of Fish and Game, Fishery Data Series No. 12-83, Anchorage.
38,403-240,959	coho	Yentna River	DIDSON Sonar	2012 July 7 - Aug 15	Westerman, D. L., and T. M. Willette. 2013. Upper Cook Inlet salmon escapement studies, 2012. Alaska Department of Fish and Game, Fishery Data Series No. 13-30, Anchorage.
89,314 - 482,707	coho	Yentna River	DIDSON Sonar	2013 July 7 - Aug 6	Glick, W. J., and T. M. Willette. 2015. Upper Cook Inlet sockeye salmon escapement studies, 2013. Alaska Department of Fish and Game, Fishery Data Series No. 15-25, Anchorage.
36,288 - 151,178	coho	Yentna River	DIDSON Sonar	2014 July 7 - Aug 8	Glick, W. J., and T. M. Willette. 2016. Upper Cook Inlet sockeye salmon escapement studies, 2014. Alaska Department of Fish and Game, Fishery Data Series No. 16-30, Anchorage.

Escapement/fish passage*	Species	System	Methodology	Year	Dates	Source Report
282,920	pink	Yentna River	Bendix Sonar	2006	July 7 - Aug 12	Westerman, D. L., and T. M. Willette. 2007. Upper Cook Inlet salmon escapement studies, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 07-82, Anchorage.
66,914	pink	Yentna River	Bendix Sonar	2007	July 7 - Aug 16	Westerman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 10-14, Anchorage.
115,512	pink	Yentna River	Bendix Sonar	2008	July 7 - Aug 10	Westerman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-16, Anchorage.
309,883 - 665,875	pink	Yentna River	DIDSON Sonar	2009	July 7 - Aug 12	Westerman, D. L., and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 11-33, Anchorage.
35,044 - 158,363	pink	Yentna River	DIDSON Sonar	2010	July 7 - Aug 15	Westerman, D. L. and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-66, Anchorage.
29,197-134,250	pink	Yentna River	DIDSON Sonar	2011	July 7 - Aug 15	Westerman, D. L., and T. M. Willette. 2012. Upper Cook Inlet salmon escapement studies, 2011. Alaska Department of Fish and Game, Fishery Data Series No. 12-83, Anchorage.
168,097-397,444	pink	Yentna River	DIDSON Sonar	2012	July 7 - Aug 15	Westerman, D. L., and T. M. Willette. 2013. Upper Cook Inlet salmon escapement studies, 2012. Alaska Department of Fish and Game, Fishery Data Series No. 13-30, Anchorage.
271,025 - 717,433	pink	Yentna River	DIDSON Sonar	2013	July 7 - Aug 6	Glick, W. J., and T. M. Willette. 2015. Upper Cook Inlet sockeye salmon escapement studies, 2013. Alaska Department of Fish and Game, Fishery Data Series No. 15-25, Anchorage.
40,084 - 136,541	pink	Yentna River	DIDSON Sonar	2014	July 7 - Aug 8	Glick, W. J., and T. M. Willette. 2016. Upper Cook Inlet sockeye salmon escapement studies, 2014. Alaska Department of Fish and Game, Fishery Data Series No. 16-30, Anchorage.

Escapement/fish passage*	Species	System	Methodology	Year	Dates	Source Report
166,697	sockeye	Yentna River	Bendix converted to DIDSON	2006	July 7 - Aug 12	Shields, P., and A. Dupuis. 2016. Upper Cook Inlet commercial fisheries annual management report, 2015. Alaska Department of Fish and Game, Fishery Management Report No. 16-14, Anchorage.
92,896	sockeye	Yentna River	Bendix Sonar	2006	July 7 - Aug 12	Westernman, D. L., and T. M. Willette. 2007. Upper Cook Inlet salmon escapement studies, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 07-82, Anchorage.
125,146	sockeye	Yentna River	Bendix converted to DIDSON	2007	July 7 - Aug 16	Shields, P., and A. Dupuis. 2016. Upper Cook Inlet commercial fisheries annual management report, 2015. Alaska Department of Fish and Game, Fishery Management Report No. 16-14, Anchorage.
79,901	sockeye	Yentna River	Bendix Sonar	2007	July 7 - Aug 16	Westernman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 10-14, Anchorage.
131,772	sockeye	Yentna River	Bendix converted to DIDSON	2008	July 7 - Aug 10	Shields, P., and A. Dupuis. 2016. Upper Cook Inlet commercial fisheries annual management report, 2015. Alaska Department of Fish and Game, Fishery Management Report No. 16-14, Anchorage.
90,146	sockeye	Yentna River	Bendix Sonar	2008	July 7 - Aug 10	Westernman, D. L., T. M. Willette. 2010. Upper Cook Inlet salmon escapement studies, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-16, Anchorage.
233,677	sockeye	Yentna River	Genetic Mark-Recapture	2008	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
43,972 - 153,910	sockeye	Yentna River	DIDSON Sonar	2009	July 7 - Aug 12	Westernman, D. L., and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 11-33, Anchorage.
139,168	sockeye	Yentna River	Genetic Mark-Recapture	2009	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
59,399 - 145,139	sockeye	Yentna River	DIDSON Sonar	2010	July 7 - Aug 15	Westernman, D. L., and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-66, Anchorage.
151,744	sockeye	Yentna River	Genetic Mark-Recapture	2010	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
62,231-140,445	sockeye	Yentna River	DIDSON Sonar	2011	July 7 - Aug 15	Westernman, D. L., and T. M. Willette. 2012. Upper Cook Inlet salmon escapement studies, 2011. Alaska Department of Fish and Game, Fishery Data Series No. 12-83, Anchorage.
290,801	sockeye	Yentna River	Genetic Mark-Recapture	2011	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
30,462 - 89,957	sockeye	Yentna River	DIDSON Sonar	2012	July 7 - Aug 15	Westernman, D. L., and T. M. Willette. 2013. Upper Cook Inlet salmon escapement studies, 2012. Alaska Department of Fish and Game, Fishery Data Series No. 13-30, Anchorage.
109,981	sockeye	Yentna River	Genetic Mark-Recapture	2012	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
70,781 - 212,705	sockeye	Yentna River	DIDSON Sonar	2013	July 7 - Aug 6	Glick, W. J., and T. M. Willette. 2015. Upper Cook Inlet sockeye salmon escapement studies, 2013. Alaska Department of Fish and Game, Fishery Data Series No. 15-25, Anchorage.
186,972	sockeye	Yentna River	Genetic Mark-Recapture	2013	July - Aug	Unpublished (per M. Willette 10/26/16)
55,759 - 137,256	sockeye	Yentna River	DIDSON Sonar	2014	July 7 - Aug 8	Glick, W. J., and T. M. Willette. 2016. Upper Cook Inlet sockeye salmon escapement studies, 2014. Alaska Department of Fish and Game, Fishery Data Series No. 16-30, Anchorage.
144,441	sockeye	Yentna River	Genetic Mark-Recapture	2014	July - Aug	Unpublished (per M. Willette 10/26/16)
No assessment	sockeye	Yentna River	DIDSON Sonar	2015	July - Aug	sonar not operated in 2015
Not available at this time	sockeye	Yentna River	Genetic Mark-Recapture	2015	July - Aug	samples have not been analyzed (per Willette 10/26/16)
No assessment	sockeye	Yentna River	DIDSON Sonar	2016	July - Aug	sonar not operated in 2016
No assessment	sockeye	Yentna River	Genetic Mark-Recapture	2016	July - Aug	genetic samples not collected in 2016
219,041	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2009	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.

10/26/2016

MatSu request Q4 CF salmon estimates 06-16

Escapement/fish passage*	Species	System	Methodology	Year	Dates	Source Report
190,460	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2010	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
314,447	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2011	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
141,804	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2012	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
228,536	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2013	July - Aug	Shields, P., and A. Dupuis. 2016. Upper Cook Inlet commercial fisheries annual management report, 2015. Alaska Department of Fish and Game, Fishery Management Report No. 16-14, Anchorage.
167,374	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2014	July - Aug	Shields, P., and A. Dupuis. 2016. Upper Cook Inlet commercial fisheries annual management report, 2015. Alaska Department of Fish and Game, Fishery Management Report No. 16-14, Anchorage.
310,507	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2015	July - Aug	Unpublished (per M. Willette 10/26/16)
No assessment	sockeye	Susitna River	Genetic Mark-Recapture and Larson Lake weir count Expansion	2016	NA	Genetic samples not collected in 2016
79,873	sockeye	Susitna (excluding Yentna)	Larson Lake weir count expanded using M-R estimates (Yanusz et al 2011a, 2011b)	2009	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
38,716	sockeye	Susitna (excluding Yentna)	Larson Lake weir count expanded using M-R estimates (Yanusz et al 2011a, 2011b)	2010	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
23,646	sockeye	Susitna (excluding Yentna)	Larson Lake weir count expanded using M-R estimates (Yanusz et al 2011a, 2011b)	2011	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
31,823	sockeye	Susitna (excluding Yentna)	Larson Lake weir count expanded using M-R estimates (Yanusz et al 2011a, 2011b)	2012	July - Aug	Willette, T. M., R. D. DeCino, A. W. Barclay, and X. Zhang. 2016. An evaluation of the selectivity of fish wheels used to apportion sonar counts to species on the Yentna River, Alaska. Alaska Department of Fish and Game, Fishery Manuscript No. 16-02, Anchorage.
41,564	sockeye	Susitna (excluding Yentna)	Larson Lake weir count expanded using M-R estimates (Yanusz et al 2011a, 2011b)	2013	July - Aug	Unpublished (per M. Willette 10/26/16)
22,933	sockeye	Susitna (excluding Yentna)	Larson Lake weir count expanded using M-R estimates (Yanusz et al 2011a, 2011b)	2014	July - Aug	Unpublished (per M. Willette 10/26/16)
44,217	sockeye	Susitna (excluding Yentna)	Larson Lake weir count expanded using M-R estimates (Yanusz et al 2011a, 2011b)	2015	July - Aug	Unpublished (per M. Willette 10/26/16)
no assessment	sockeye	Susitna (excluding Yentna)	estimates (Yanusz et al 2011a, 2011b)	2016	July - Aug	NA
*Important Notes:						
Sonar estimates of pink coho, and chum salmon are not estimates of total passage since sonar operations did not encompass the entire run timing for these species						
DIDSON estimates are presented as ranges, due to uncertainty concerning fish wheel selectivity.						
The DIDSON sockeye salmon ranges in the annual sonar reports were calculated using a range of literature values for fish wheel selectivity coefficients.						
In the fish wheel selectivity report (Willette et al, 2016), DIDSON sockeye salmon estimates adjusted for selectivity were highly correlated ($r^2=0.997$) with genetic mark-recapture estimates (omitting 2011).						

Matanuska-Susitna Borough
FISH AND WILDLIFE COMMISSION
 Thursday, October 27, 2016, 6:00pm

MINUTES

I. INTRODUCTIONS

The meeting was called to order at 6:05pm by Chair Terry Nininger at MSB in Wasilla. Quorum was established with seven members present: Howard Delo, Andy Couch, Larry Engel, Terry Nininger, Jehnifer Ehmann, Jim Sykes and Mike Wood.

Also present: Bruce Knowles, Frankie Barker; Tim McKinley, Matt Miller, Andy Barclay, Chris Hebert, Sam Ivey, Tim Baker, Pat Shields, Samantha Oslund and Nick DeCovich from ADF&G; Israel Payton and Al Kane, BOF members; and 10 other members of the public.

II. APPROVAL OF AGENDA

Larry made a motion to approve the agenda with a change to move Item V. up on the agenda. Howard seconded the motion. The motion was approved.

III. 2016 SEASON SUMMARY

Sam Ivey, ADF&G Mat-Su Sportfish Manager, gave a summary of sportfishing results from summer 2016. The overall strategy was to reduce harvest by 60% which is reduced from the harvest reduction of 75% in 2015. Fewer restrictions were applied on the Deshka River and kings made 60% of escapement goals. Coho started strong but ended up below average. There was no personal use fishery for sockeyes this year.

Pat Shields, ADF&G Commercial Fishery Manager, summarized the commercial fishery season. Kings were close to the 10 year average. Sockeye assessment was for 7.1 million, but ended up at 5.2 million. He distributed a handout summarizing the commercial season.

IV. FWC QUESTIONS

Commissioners submitted 12 questions to ADF&G in advance of the meeting. ADF&G distributed written responses to the questions and discussed their responses.

V. MEMBER COMMENTS

Commissioners commented on ongoing fish research projects.

VI. PUBLIC COMMENTS

Public members asked questions about pike, pinks and sonar counting.

VII. ADJOURN

Meeting was adjourned at 9:30pm.

ATTEST: 
 FRANKIE BARKER, Staff


 TERRY NININGER, Chair



Matanuska-Susitna Borough Fish & Wildlife Commission

Aug. 22, 2017

Questions to ADF&G Commissioner Sam Cotten & Staff

- 1) Do you support the concept of the Conservation Corridor?
Why or why not?
- 2) Do you see sonar returning to the Susitna River? It was removed in 2009. What can ADF&G do to ensure making management decisions on the Susitna River with real time, in-season escapement numbers?
- 3) Why does the Department choose the harvest strategy that commercially harvests the maximum number of Northern-bound coho salmon — in late July /early August in Upper Cook Inlet — even though, up north, in-river escapement numbers were extremely low at the time?
- 4) Why does the Commercial Division make no proposals to address meeting northern escapement goals?
- 5) How can struggling Mat-Su in-river fisheries be restored to their former health when priorities appear to be given to a maximum commercial harvest?
- 6) Within the last 10 to 15 years, coho fishing started in the third week of July in the Mat-Su. This year, the timing was after Aug. 7, picking up by Aug. 19. Why has ADF&G managed the front half of our Northern District Coho into near extinction? The tourists are gone. The kids are back in school by the time the fish arrived.

- 7) The Drift Fishery Management Plan calls for “reasonable opportunity” to catch coho salmon through the **entire duration of the run**. Why is ADF&G ignoring this management plan mandate?
- 8) Why is ADF&G so eager to immediately ramp up the tier 1/2/3 level of fishing for the drift fleet when they get numbers indicating a stronger run than forecast (2017), yet so slow (read never) to ramp down the fishing effort when numbers indicate a weaker run than forecast?
- 9) What level of confidence do you or your staff have with either in-season or preseason forecasts? Can your staff explain why the 2016 estimate was missed by more than one million sockeye? What is being done to improve the accuracy of these run strength estimates that serve as important conservation triggers?
- 10) It takes only 100,000 extra fish to spur the Department to adjust the forecast upward, which allows more commercial fishing, but a million fish off in the forecast isn’t enough to spur the Department to reduce commercial fishing. Do management practices favor a commercial surplus harvest in the Kenai over conservation for northern rivers? Why or why not?
- 11) On July 31, your staff elected to open the entire district to drift fishing. Why was **this**—the most liberal harvest option—chosen? This opening resulted in a harvest of more than 39,000 coho, more coho than sockeye. When this new areawide provision was approved last February, the Alaska Board of Fisheries was informed by your staff that a harvest of about 5,000 cohos would occur. **A)** Please explain how such an error occurred. **B)** Would you have selected the districtwide opener if you expected a large coho harvest?
- 12) The Governor wrote to our Borough Mayor: “All commercial fishing openings are based upon salmon passage levels and in-season assessment of sockeye and coho salmon stocks returning to Cook Inlet.” How do you reconcile then that the Department opens the drift fleet to areawide openings when the escapement on the Little Susitna River is below 200 fish, on a river that is supposed to have a minimum of 10,000 fish?

13) Portions of the Northern District setnet fishery are commonly restricted by emergency openings, when in-river sport fisheries are closed or restricted. The drift fishery, however, is seldom restricted when Mat-Su sport fisheries undergo restrictions. This year it **was** restricted. Can we expect future management of the drift fishery to compliment closures or restrictions to northern sport fisheries?

14) Does ADF&G consider economic values in managing this fishery, sport fishing versus commercial drift fishing?

15) Can we expect the test fishery off Kalgin Island to resume in 2018? As you may know, ADF&G absorbed the funding for that test fishery, yet the work was not done. Three out of five years were completed. This important work tells us where the fish are and when.

16) The 9th U.S. Circuit Court of Appeals recently sided with UCIDA on the management of the Upper Cook Inlet salmon fishery. UCIDA's request for management changes **could have** major impact on all salmon resources of Upper Cook Inlet as well as the users of these salmon. Please provide an update on this important issue. If a management plan is developed, how will public input be accommodated?

#

Mat-Su Borough Public Affairs, 861-8577, Patty Sullivan, psullivan@matsugov.us
Stefan Hinman, 861-8520, Stefan.hinman@matsugov.us

Mat-Su Borough Fish Commission Staff, Brianne Blackburn, 861-8439,
brianne.blackburn@matsugov.us

ADF&G Question & Answer Summary

Question No. 1, do you support the concept of the conservation corridor? Why or why not?

MR. COTTEN: Thank you and I may ask Scott and Tom to comment on this as well but the conservation corridor, if you will, is a description of an area that I think people understand although I'm not really sure that everybody does understand what that means. I'm not sure that it's -- if it's the entire area that does not include the expanded corridor and the corridors that are on the east side of the bank there. So -- but there is or, as the director pointed out, there is different areas designated. The Board of Fish gets very specific about which areas are going to be allowed to have fishing take place. Part of our job is to as well as we can follow the management plan. The management plan this year called for an additional period which we allowed on July 31st. The regulation allows for a period on the 3rd and additional periods after the 3rd for district-wide fishing. We didn't allow any other district-wide fishing after the 3rd. There were two periods.

The information we had from the test fish and from the CPUE, the catch per unit effort, from the commercial fleet suggested an extremely strong run of silver salmon. We -- also at that point though, as Mr. Brookover pointed out, we noticed that we weren't able to project the escapement goals being met on the Little Su. So when we read the management plan, it's very specific that we're supposed to minimize the harvest at northern bound district -- northern district coho salmon to provide sport and guided sport fishermen a reasonable opportunity to harvest those salmon resources over the entire run as measured by the frequency of in-river restrictions. So, as he pointed out on August 4th, they announced a restriction that there would continue to be no bait allowed on the Little Su.

At that point -- and we got criticized from this -- on this decision by the commercial fleet, as you might imagine, because the regulation said they should get more district-wide periods. We didn't allow that because we had an in-river restriction. So we made an effort at that point to minimize northern-bound coho by imposing those restrictions on the drift fleet. It wasn't well received but we felt that a clear reading of the management plan, that that's what -- we needed to do that, especially with those restrictions, the one -- only one restriction on the Little Su.

So I'm not trying to avoid the question but if you just want a yes, no, I'm really not able to give you a yes, no. We look at the management plan that the Board of Fish lays out and you're familiar with that, so is Howard and others. So I understand a concept that would allow fish to be unfettered -- have unfettered movement up to the northern district but we'd -- we do allow commercial fishing with the guidance of the management plan.

So should the Board of Fish tell us that we can't fish in that area, well, then that would be very strict guidance from the Board --

Question No. 2, do you see sonar returning to the Susitna River? It was removed in 2009. What can ADF&G do to insure making management decisions on the Susitna River with realtime in-season escapement numbers?

MR. COTTEN: If you don't mind, I'm going to ask my directors to respond to that. I know that, Larry, you did point out that we discontinued that program and the rationale was that it wasn't useful information or wasn't good enough information to justify the expense but may I please --

CHAIR: Yeah.

MR. COTTEN: -- defer the questions to what -- to my directors?

CHAIR: Yeah.

DIRECTOR: I can take a shot at that again. I've already admitted my length of time working it up. Again, my issues is limited but I do understand we operate a sonar, as Commissioner Engel mentioned. That project didn't work. I mean, that's as simple as I can make it. What it did is it over-counted fish and I think that the problem was species apportionment issues which most of you, as fisher professionals, understand is one of the major sonar-related problems we have in the state and what I mean by it, you know, you get a -- you have a beam of sound that goes across the river. It pings an object. That object could be anything fish wise. Now, the technology has improved dramatically. The sonar that we have on the Kenai now counting king salmon and the -- it's called ARIS at this point for whatever that's worth. That technology is significantly improved from when we operated a sonar on the Yentna.

Now, the -- but -- so we get a sonar count of an object. We count is as a fish. We don't know if it's a pink, sockeye. You know, there's size overlaps, obviously, coho. So that's -- we typically do a species apportionment on the Kasilof and the Kenai. We run fish wheels closely adjacent to the sonar counters. So we take the proportion of fish species in the apportionment counter, fish wheels, netting, whatever, and break that sonar count. So if we catch 50 percent pinks in Kasilof and 50 percent sockeye, then the sonar count of 100,000 is 50,000. It's that simple. That's one of the -- species apportionment is a major issue, technical issue, in sonar projects. That was, my understanding, one of the biggest problems of the Yentna sonar project.

Now, nobody wants us to use bad information so it was deemed at the time to get rid of that sonar project and go to upriver weirs, Judd, Chelatna and Larson. As you've already alluded to, those are not in-season projects. They're still going. The fisheries are closed. Well, the commercial fisheries are closed. We'll know post-season what the final results are. We can say right now we met our goals but we don't manage in any way, shape or form on those weir counts. Now, directly to the question can we put sonar in the Susitna, maybe but we'd have to, A, have a -- quite a bit of money in a declining budget. Everybody in this room knows that story and, in fact, we're probably looking at cuts for next year. I bring that up as an observation that we will have to deal with to answer your question.

We also would have to come up with solutions to the problems that caused us to abandon that technology, the sonar in Yentna before, and I'm not seeing those answers at this point in time and I don't know if any -- my co-people have other people -- answers but that's my answer to that question.

CHAIR: Tom, do you have any comments on that?

MR. BROOKOVER: I don't. I think the discussion here is largely about the Yentna River sonar and I don't have any additional comments about that.

Question No. 3, why does the Department choose the harvest strategy that commercially harvest the maximum number of northern-bound coho salmon in late July, early August in Upper Cook Inlet even though up north, in-river escapement numbers were extremely low at the time?

CHAIR: Well, I'll just make a brief statement on that and ask Scott to follow up but the question is why did we choose the harvest strategy that commercially harvests the maximum number of northern-bound coho. Well, I don't think we did that. The -- between July 6th and August 15th when the season closed, the drift fleet was allowed two periods what's referred to as district wide. The regulations call for more than that. We didn't allow more than that. So we did not choose a strategy that would harvest the maximum number.

And then I think it says even though up north, in-river escapement numbers were extremely low at the time and so I may call on Scott or Tom to talk about how we use that information we get from the data, the test fish data, the commercial fish data and you project and that's what happened on the Little Su. We projected that they weren't going to meet their goal. So we imposed restrictions at that point. If you're able to project, you don't have to wait until the Little Su meets its goals to allow commercial fishing. It would be probably no commercial fishing if you waited until that point so -- and I know some people would prefer that no commercial fishing take place. I mean, that's a -- I've heard that before but that's -- at least the way the system's set up right now, that isn't what's happening. There are commercial fishing opportunities and there are sport fishing opportunities and, in fact, on the Kenai and Cook Inlet system alone, on the Kenai River, we have, I think, seven different distinct user groups. You have sport fish, guided sport fish, personal use, subsistence -- U.S. Government allows subsistence nets up the river -- educational permits. You have set nets, you have drift gill nets and then you, obviously, have fish that are northbound that have a lot of different interests up here, commercial, sport and guided sport up here. So it's not unusual to hear people say there shouldn't be any commercial fishing but that's a view that isn't held by the management plan or the Department. We support all uses and the Board of Fish gives us pretty good solid guidelines on allocation of those harvest opportunities.

Question No. 8. Why is ADF&G so eager to immediately ramp up the Tier 1, 2, 3 level of fishing for the drift fleet when they get numbers indicating a stronger run than forecast -- that was in 2017 -- yet so slow to ramp down the fishing effort when numbers indicate a weaker run than forecast?

DIRECTOR: I can take a shot at that. Of course, again, I've been here two fishing seasons. I've seen one way. As Larry said, one another way. We were over forecast last year by a million and we're pretty close to in -- on in-season this year. So what I can say is -- and, again, I -- believe me, forecasting salmon runs is one of the banes of our existence but it's one of the things we have to do. It's tough and I'm not making excuses, I'm not crying oh whoa is us. That's our job is to do the best we can based on the data we have to forecast fish runs throughout the state, not just Upper Cook Inlet. Sometimes we hit it pretty spot on and sometimes, maybe more times often than not, I'll admit it, we don't and in the case of this year, we has a forec -- pre-season forecast for Kenai, for example, of less than 2.3 total run. So we did certain things. Based on the offshore test and other indicators in-river, we under -- we believe that that was biased low and, in fact, it was low so we moved up to about a 2.7 forecast, moved into the next tier, and I think we're going to be pretty close to 2.7, 2.8 total on Kenai. So while the pre-season forecast was low, the in-season forecast is probably going to be pretty close. I'm not -- that's just a fact.

It wasn't the case in 2016 and I understand very much because I share the frustration. I wish our forecasts were spot on. It would make life wonderful. It isn't true. It doesn't happen. We adapt. That's why we have the system that we have in place, to respond to in-season indications, sonars, weirs, when they're in season locations. That's why we do -- have those projects, so we can make management decisions based on current in-season information. Unfortunately, we don't have that information for every single system throughout the state. Forecasts are a problem. We deal with it and we work the best we can with the information we have. I understand the frustration.

CHAIR: Go ahead, Commissioner.

COMMISSIONER: Right, I -- thank you, Mr. Chairman. I think that's a good question and it -- I'm not sure that we have an answer right now as to whether we ever ramp down as far as the forecast. We have ramped down the fishing effort and we had two closed periods in the middle of July this year because it looked as though the run was going to -- or the escapement goals were in danger of not being met. So we did ramp down fishing effort but they -- and we did up the tier level. So if the question is have we ever brought the tier level down, I don't know the answer to that question right now but we'll make a note of that, make sure that we'll respond to you in writing on that question.

Question No 11: on July 31st, your staff elected to open the entire district to drift fishing. Why was this the most liberal harvest option chosen? This opening resulted in a harvest of more than 39,000 coho, more coho than sockeye. When this new area-wide provision was approved last February, the Alaska Board of Fisheries was informed by your staff that a harvest of about 5,000 cohos would occur. A, please explain how such an error occurred. B, would you have selected the district-wide opener if you expected a large coho harvest?

DIRECTOR: Now, just, if I might, the error -- it wasn't an error, in my opinion. The date of that was discussed at the Board of Fish that made the district-wide versus Area 1. The Board asked how many more coho salmon would be caught in the district-wide period in July than an

Area 1 quarter period and what we did is we looked at from 2006 to -- through 2016 in July, I think the last two weeks of July. There were 11 district-wide periods across all those years during that time and we caught X number of coho -- I don't know it off the top of my head -- in a district-wide period and there were 13 Area 1 -- Drift Area 1 quarter periods and we caught Y number of coho. The difference between those numbers was about 5,000, 6,000 fish. That's where that number came from and that's what we -- and that is true. We can show the match, we can show the fish tickets and all that kind of thing.

Now, the -- let's see, going back to on July 31st, now, I think I've already talked -- touched on that one. That's the change that the Board of Fisheries adopted in this last regulatory cycle that there could be one district-wide period in the last two weeks of July after the closure that we've all talked about for Kenai sockeye. We reopened the fishery when we thought we were going to meet our in-river goal for Kenai. We looked at all the information that we had, offshore test. We didn't have much fishery performance data because we hadn't been fishing but indicators and then offshore tests suggested no run concerns coho included so we had a district-wide period per the Board of Fish plan. That's all I can say about that.

Question No. 12, the Governor wrote to our borough mayor, quote, all commercial fishing openings are based upon salmon passage levels and in-season assessment of sockeye and coho salmon stocks returning to Cook Inlet, end quote. How do you reconcile then that the Department opens the drift fleet to area-wide openings when the escapement in the Little Su River is below 200 fish on a river that is supposed to have a minimum of 10,000 fish?

DIRECTOR: Why don't you --

DIRECTOR: Yeah, sure.

DIRECTOR: I -- I'll try to back you up here but there's a -- go ahead.

DIRECTOR: Yeah, so the root of that question, as I'm hearing it, is that why don't we open com -- any fisheries. I'll -- commercial in this case -- until we meet escapement. If we did that for any fisheries, not just drift, not just set-net, not just sport, wait until we have escapement in the bag, we would exceed our escapement objectives and forego harvest in fisheries throughout the state, not just drift, I'm talking fisheries in general. That would be bad, in my opinion, for the state of the state, the economy, all of you people and I say that just why would we forego harvests that we don't need to forego? We have to, in essence, fish before we know we're going to meet escapement and I see people shaking their head. I just don't see how we can wait until we meet escapement and then fish. That just can't work. So that's the underlying core. That's why we have it -- stock assessment projects that tell us are we going to -- you know, we start putting nets, hooks, whatever, in the water at the start of a season for all fisheries, we monitor the escapements for salmon and we say okay, we're going to make these escapement goals -- that is really what everybody wants -- or we're not and if we're not, then we take fishery management actions. It's just that simple to me.

CHAIR: Go ahead, Tom.

MR. BROOKOVER: Thanks. If I could just follow up, I think this question may get at, you know, the indications that those 200 fish provide. That's a low number of fish early in the season for Little Su, 200 fish. So it's an indication that the return may be low and I just -- I wanted to just kind of lay out more of an observation. It's not rationale for decisions we made this year but it's part of the hand we were dealt. Our managers have a tough job and they're

faced with a lot of uncertain information. They can never see the whole picture clearly at any one time and, you know, in this question, we talk about 200 fish in the Little Su River. Back before the bait prohibition was put into place I think on August 3rd or 4th, we did have real low counts on the Little Su. We also had some conflicting information. We had high indices in the offshore test fishery and we had at least one area-wide period with a large coho harvest. In a sense, they conflict. We got indication in-river that the run's poor. We got indications out in the district that there's a strong showing of coho. One of the things we're looking at is -- in terms of uncertainty is well, where are we at in the run. That time in the run at the Little Su, we are, I think, the 25 percent point, on average, of that run through weir occurs around August 6th if I'm not mistaken. I'm going by memory. I may be off a little bit but back at this time in early August, we were looking at very early -- the very early portion of the weir counts and, of course, run timing can vary and this isn't just coho but any salmon stock. The timing can vary by dates. Could be late, it could be early, it could be large, it could be small and early in the run, we don't know what it's going to look like.

So we were faced with these conflicting pieces of information in a sense and one -- kind of the secondary observations we had at the time was it may indicate the run's late. Well, what does that mean in terms of the district-wide periods that we're talking about? The district-wide periods we're talking about are July 31st and August -- you know, early August. After August 1st, the drift plan puts into place -- puts into regulation those area-wide openings. What if those coho that came through the OTF and the drift fleet would have come a week earlier when there were more protections in place at the end of July, as Scott mentioned? What effect would that have had?

So, again, this isn't so much rationale, just an observation of the realities of the situation that we were seeing at the time. It's not always clear so just for what it's worth.



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

⁴⁸
**Department of
Fish and Game**

DIVISIONS OF SPORT FISH
AND COMMERCIAL FISHERIES
Anchorage Office

333 Raspberry Road
Anchorage, Alaska 99518-1565

Date: November 27, 2017

To: Members of Mat-Su Borough Fish and Wildlife Commission

From: Sport Fish and Commercial Fisheries Staff

Subject: Questions and Department responses for meeting on November 27, 2017

The Mat-Su Borough Fish and Wildlife Commission submitted questions to the department in preparation for the meeting regarding Cook Inlet fisheries. The original questions and department responses are provided below.

1. Why does the Commercial Division make no proposals to address meeting northern escapement goals?

ADF&G Response: *The Alaska Board of Fisheries (board) provides guidance to the department for salmon management through stock specific and drainage specific management plans. The department and the board work together to designate specific stocks as stocks of concern, which provide additional conservation measures to ensure escapement objectives are met. If a stock is designated a stock of concern then the two divisions will jointly develop an action plan with multiple options for the board to consider and possibly take action on. The department will continue to use its emergency order authority, based upon inseason information, in order to achieve escapement goals as the top priority when making management decisions (5 AAC 21.363(e)).*

2. The Drift Fishery Management Plan calls for “reasonable opportunity” to catch coho salmon through the entire duration of the run. Why is ADF&G ignoring this management plan mandate?

ADF&G Response: *The department relies upon the Central District Drift Gillnet Fishery Management Plan for guidance in management of the UCI drift fishery. Within this plan are time and area restrictions established to pass coho salmon through the Central District to NCI streams. From July 16–31, the drift fishery is restricted to fishing only in the Expanded Corridors (for Kenai River sockeye salmon runs < 2.3 million fish) or to no more than one fishing period per week in Drift Area 1 or all waters of the Central District (for Kenai River runs > 2.3 million sockeye salmon) in order to reduce the harvest of northern bound coho salmon. In 2017, there were 5 drift gillnet regular fishing periods from July 16–31. Two of these were closed by emergency order (July 24 & 27), 2 were fished in the Expanded Corridors (July 17 &*

20) and 1 was fished districtwide (July 31). In addition, in August, 3 of the 4 districtwide fishing periods were restricted to Drift Area 1 to reduce the harvest of Little Susitna River coho salmon.

The 2017 run timing of most sockeye and coho salmon stocks was multiple days late. Run timing patterns in 2017 complicated management decisions. That said, in 2017, all NCI coho salmon escapement goals (Little Susitna River, Deshka River, Fish Creek, and Jim Creek) were met or exceeded. Likewise, all UCI sockeye salmon goals (Kasilof, Kenai, early- and late run Russian rivers, Fish Creek, as well as Judd, Larson, and Chelatna Lakes) were met or exceeded.

3. Both your preseason and inseason salmon forecasts have shown great variability over the years. Most recently, you overestimated the 2016 sockeye returns by more than one million fish and in 2017 you underestimated the returns by about 100,000 fish. Both estimates played a major role in how you allowed commercial fishing time in the Central District because the estimates serve as important conservation triggers. In 2016, the overestimate placed the return projections into Tier 3 for managing fishing times and areas. When the returns failed to develop, no effort was made to lower the projected returns into Tier 2, where they should have been placed to be more restrictive on fishing time and area to conserve the salmon resource. Conversely, as soon as the underestimate was discovered in 2017, immediate action was taken to move from Tier 1 up into Tier 2, increasing both fishing time and area.

The appearance given is that department management practices favor a commercial surplus harvest in the Central District over conservation for Northern District returns. How do you explain this? What is being done to improve the accuracy of the run strength estimates to eliminate this apparent commercial fisheries favoritism in the future?

ADF&G Response: *Annual salmon runs are forecasted using a variety of models (spawner-recruit, sibling, fall fry and smolt) and historical data sets that account for annual variability in salmon runs. Forecast models providing the smallest mean absolute percent error (MAPE) between the forecast and actual runs over the past 10 years (2008–2017) were typically selected, and forecast model predictions are compared to evaluate uncertainty. The MAPE of preseason Kenai River sockeye salmon forecasts over the past 10 years is 25%, and the forecast was greater than the actual run in 5 of the past 10 years.*

The Kenai River Late-Run Sockeye Salmon Management Plan directs the department to make an inseason assessment of the total run on or after July 20 to determine if adjustments need to be made to the preseason run size forecast for Kenai River sockeye salmon. Inseason sockeye salmon run forecasts are developed by fitting the current year's Offshore Test Fish (OTF) catch per effort data to run timing curves from previous years.

The 2016 preseason forecast estimated the total Kenai River sockeye salmon run size would be greater than 4.6 million fish. On July 26, 2016, an inseason assessment was made and it also projected the run would exceed 4.6 million fish; therefore, management remained in the > 4.6 million tier. After the inseason run assessment was complete, the sockeye salmon run quickly began to taper off, and as you noted, was approximately 1 million less than forecasted. Also, regardless of which tier we would have been in, only 39 EO hours were used from July 24-30; 38 EO hours from July 31-August 6; and 24 EO hours from August 7-13 in the ESSN fishery. All of these hours were less than what is provided in either the second or third tiers. Finally, had the

department downgraded the run size to the middle tier (2.3–4.6 million fish), the Kenai River inriver goal would have decreased from 1.1–1.35 million fish to 1.0–1.2 million fish, which would have resulted in a need to harvest additional fish to stay within the inriver goal range. The final inriver sonar estimate of passage in 2016 was 1.38 million fish.

In 2017, the inseason sockeye salmon run to UCI was assessed on July 28. This assessment came near the end of an 8-day closure to the commercial ESSN and drift fisheries. The preseason forecast had estimated the Kenai River sockeye salmon run would be less than 2.3 million fish; the inseason assessment projected the run would be greater than 2.3 million, so management now followed provisions for Kenai River runs of 2.3 to 4.6 million sockeye salmon. The inseason assessment meant the Kenai River inriver goal increased from 900–1.1 million to 1.0–1.3 million fish. This change resulted in less commercial fishing in order to achieve the new inriver goal range. It should be noted that this was one of the latest official inseason run assessments ever completed. There were two reasons for the late assessment: first, the commercial drift and ESSN fishery were closed from July 21–28, so delaying the official inseason assessment had no effect on fishery management. Second, because the sockeye salmon run was estimated to be multiple days late, the later the assessment could be made, the more accurate it likely would be. Furthermore, when the drift and ESSN fisheries are closed, we lose an important tool in calibrating the OTF data. The 2017 sockeye salmon final run to the Kenai River was estimated to be 2.9 million fish. In the ESSN fishery, only 14 EO hours were fished July from 23-29; zero EO hours fished July 30-August 5; and 18 EO hours used from August 6-12.

Once the department makes its official inseason assessment of the Kenai River sockeye salmon run size late in July, no additional run size adjustments are made after that time because one of the most important tools we use for inseason assessments, the OTF program, typically ends on July 30.

4. Portions of the Northern District setnet fishery are commonly restricted by emergency openings, when inriver sport fisheries are closed or restricted. The drift fishery, however, is seldom restricted when Mat-Su sport fisheries undergo restrictions. This year it was restricted. Can we expect future management of the drift fishery to compliment closures or restrictions to northern sport fisheries?

ADF&G Response: *As stated in the response to question no. 2, the Central District drift plan outlines time and area restrictions to the drift fleet in July to pass sockeye and coho salmon stocks to NCI streams. If the department feels that additional restrictions are needed beyond those identified in management plans, we will use our EO authority to further restrict or close commercial fisheries to meet escapement objectives.*

5. The Commission appreciates Sportfish Division's issuing End of Season Reports for the Mat-Su Valley, Anchorage, and Kenai Peninsula Management Areas issued on October 16, 2017. It is however, interesting to note that spawning escapement figure for the Mat-Su sport fish report only listed escapement counts through differing dates in late August — while the Commercial Report (also issued around mid-October) lists complete escapement numbers for the same

streams. If sport fish division was providing final escapement numbers for the commercial report, why not put the same final count numbers into the sport fish reports at the same time?

ADF&G Response: *The Division of Sport Fish responded to a request to provide season summaries of sport fisheries throughout the Southcentral Region. Summary data had been released periodically in the past, but the 2017 summary was designed to be more comprehensive. Staff were under a time crunch to release the summary ahead of the board work session and in doing so went with preliminary numbers, which was noted in the text and table. Now that we have a format in place, next year we'll strive for final counts.*

6. Why was the 2017 Eklutna Tailrace return of stocked coho salmon so much poorer than the stocked coho salmon return at Ship Creek? What could the Department do to boost the Eklutna Tailrace stocked coho return to a level more similar to the Ship Creek return? Would imprinting coho stocked at the Tailrace location for a longer period of time (similar to the king salmon program) likely produce better returns to the Tailrace?

ADF&G Response: *The coho salmon fishery at Ship Creek is a larger fishery than Eklutna, with a stocking goal of 240,000 fish in support of 35,000 angler-days and a harvest of 3,300 fish. The stocking goal at the Tailrace has long been 120,000 per year in support of 6,000 angler-days of fishing to harvest about 2,500 fish. Coho salmon were late in reaching the Tailrace this year, similar to other areas. Fishing became very good by mid-August, then seemed to fall off toward the end of the season with fish biting less aggressively. One off year doesn't necessarily demonstrate a stocking issue, however, area staff are always interested in maximizing opportunity and will consider MSB's question as a request for increasing the stocking level at the Tailrace. Comments to the Statewide Stocking Plan are solicited by the department this time of year on our website.*

The holding of king salmon smolt at a release site for a period of time is thought to increase success of imprinting. We do this at the Tailrace as a precautionary measure. The coho salmon stocking program has been successful over the years without formal imprinting. Straying of Tailrace fish was not observed during a period of time in the 1990s and early 2000s when all coho salmon were marked through clipping of the adipose fin.

7. Since the Deception Creek king salmon stocking program has not produced enough hatchery king salmon to allow ANY legal harvest of king salmon within Unit 2 of the Susitna River drainage for the past 5 years, would it be more beneficial to cut the Deception Creek program and transfer / further boost the Eklutna Tailrace program where sport king salmon harvest has been allowed each year during the same time frame?

ADF&G Response: *Essentially that is what we have done. Beginning in 2014, we tripled our stocking effort from 125,000 to 425,000 in an effort to offset poor marine survivals of hatchery king salmon which in some areas of the state were only a quarter of a percent, smolt to adult. Harvest increased from about 500 to 1,400 by 2016, the largest harvest since inception of the stocking program in 2002. Fishing has been considered to be good to very good over the past three years despite production being low. Brood for this fishery come from both Ship and*

Deception Creek and maximizes our allotted space for rearing at the hatchery. Of the three tanks available, two tanks are allocated to the Tailrace, while the remaining tank is used for Deception Creek. In recent years it has been a struggle to collect enough brood between these two sources to stock at the 425,000 fish level and likely we would not meet the current target if some fish weren't stocked back into Deception Creek.

We are continually discussing the viability of this program. Aside from the benefit to Eklutna Tailrace, other benefits include 1) unknown difficulty restarting the same program later given increased statewide focus on maintaining genetic integrity of wild stocks, and 2) ensuring no time is lost reestablishing a hatchery run, which can take over 5 years, if rebound in marine survivals improves in the near future.

8. At the 2017 Board of Fisheries meeting ADF&G's commercial manager stated that there were no conservation issues with Little Susitna River salmon stocks, and further lobbied the Board of Fisheries to continue commercial fishing within one-mile of the mouth of Little Susitna River. During the 2017 season, however, the Little Susitna River sport king salmon fishery was closed by ADF&G emergency order for 20 days from June 24 — July 13 because of lack of sufficient king salmon passage to ensure attainment of escapement needs, and the Little Susitna River sport coho fishery was closed to bait fishing for 17 days from August 6 — August 23 at 5 pm. for lack of sufficient coho salmon passage to ensure attainment of coho salmon escapement needs. Further in 2016 the Little Susitna River sport coho salmon fishery was closed to bait fishing by emergency order from August 6—September 30 and ADF&G failed to attain the coho salmon spawning escapement goal in 2016. How does the Department plan to adapt commercial salmon management in 2018 in order to both meet Little Susitna River king and coho salmon spawning escapement needs and to provide reasonable sport fishing opportunity throughout the entire run of these salmon stocks (as required by management plans)?

ADF&G Response: *To clarify, the department did not lobby the board. The department presented information provided in our staff comments to board proposals (RC2). In those staff comments, the department opposed the proposal seeking to close the area within one mile of the Little Susitna River as a means of conserving Little Susitna River salmon. In addition, the comments stated Little Susitna River king and coho salmon sport and commercial fishing regulations and the department's EO authority provide opportunity to harvest salmon excess to escapement needs and meet established escapement goals.*

The current Little Susitna River king salmon escapement goal was established in 2017 as an SEG of 2,100–4,300 fish. That level of escapement was met or exceeded in each of the most recent 5 years (2013–2017). In 2016, the department reduced hours in the directed king salmon commercial setnet fishery from 12 hours to 6 hours for the first fishing period of the year on May 30. In 2017, the final setnet fishing period of the year on June 19 was reduced to 6 hours.

The Little Susitna River coho salmon SEG is 10,100–17,700 fish. This goal was met or exceeded in 4 of the previous 5 years (not met in 2016). In 2016, the final 2 drift gillnet districtwide fishing periods on August 11 and 15 were restricted to Drift Area 3 and 4 due to the drift 1% rule. In the ND set gillnet fishery, those waters of the General Subdistrict east of the Susitna River were closed for the remainder of the 2016 fishing season beginning on Thursday, August 17. In 2017, the drift gillnet fishing periods on July 24 and 27 were closed for Kenai River

sockeye salmon conservation, and then on August 7, 11, and 14 the drift gillnet fishing periods were restricted to Drift Area 1 to reduce harvest of Little Susitna River coho salmon. In the ND set gillnet fishery, 5 fishing periods were restricted as follows: all of the ND was reduced to a 6-hr fishing period on August 7, and that portion of the General Subdistrict east of the Susitna River was reduced to 6-hour fishing periods on August 10, 14, 17, and 21.

In 2018, the department will continue to follow board-adopted management plans to meet stock-specific escapement objectives. We will also rely upon inseason information from escapement monitoring projects in order to use our EO authority to adjust fishing times as needed.

9. On the Kenai River sockeye salmon are counted by sonar in the lower river, and then the sockeye salmon spawning escapement is reached by subtracting sockeye harvests above the counter from the sonar count. On Little Susitna River coho salmon escapement numbers were originally considered to be for salmon spawning above the Parks Highway, and when the weir was located above the Highway it made sense to use the weir count as a standalone figure for spawning escapement. Now that the Little Susitna River weir is located 35 miles below the Parks Highway, would not better science require the Department to subtract harvest above the weir from the weir count in order to reach the final Little Susitna River coho salmon escapement number?

ADF&G Response: *When the Upper Cook Inlet Escapement Goal committee met in the fall/winter of 2015-2016 to evaluate escapement goals, we only had harvest estimates above the current weir location for two recent years. As we accumulate more recent years with harvest estimates above the weir we will update the escapement goal. The percentage of the total harvest above the current location in the late 1980's and early 1990's was between 2% and 7%; from 2013 to 2016 it ranged from 17% to 31%.*

10. When the Little Susitna River salmon counting weir was moved to the lower river location, ADF&G made no adjustment to the coho salmon spawning escapement goal — even though in the lower river location the weir now counts additional coho salmon spawning for 35 miles or more below the former weir location. In terms of providing a more realistic management target wouldn't it be beneficial for the Department, to at least, widen the coho salmon spawning escapement range by raising the top end of the goal?

ADF&G Response: *Some coho salmon do spawn between the old weir location and the current weir location. But there is no clear relationship between passage at the old and current locations that could be used to adjust counts at the current location. This is likely due to the high variability of annual coho salmon abundance, and that the majority of coho salmon spawn above the old, further upstream location. Without additional information, there is insufficient data to justify raising the top end of the goal or determining what that top end would be.*

11. Central District commercial salmon fisheries are often allowed expanded harvest opportunities far before escapement needs are met, yet in many cases sport fisheries may not be liberalized until after the top-end of escapement needs are projected to be exceeded or have already

been exceeded. In terms of maximizing benefit for sport fisheries would it be better (in most cases) to liberalize sport fisheries as soon as the mid-point of an escapement goal could be projected or was attained? Please discuss in terms of this year's coho salmon returns to the Northern Cook Inlet Management Area.

ADF&G Response: *The Sustainable Salmon Fisheries Policy states the department will seek to maintain evenly distributed salmon escapements within the bounds of a BEG, SEG, or OEG. Prior to 2004, the department's EO authority allowed the commissioner or an authorized designee to increase sport fish bag and possession limits and liberalize methods and means of harvest when the total escapement of a species of anadromous fish was projected to exceed the escapement goal by 25 percent and the expected harvest would not reduce escapement below the upper limit of the escapement goal range. The department submitted a proposal to allow us to liberalize bag limits and methods and means when run size is projected to exceed an escapement goal.*

The regulation, 5 AAC 75.003. Emergency order authority.(2)(A), would need to be modified for the department to be able to use EO authority to liberalize sport fisheries as soon as the mid-point of an escapement goal could be projected or was attained.

A clear example of how we used our EO authority occurred at Fish Creek this past year. The justification read, "The sustainable escapement goal (SEG) for coho salmon in Fish Creek is 1,200-4,400 fish. As of August 20, 2017, weir counts indicate 3,302 coho salmon have passed the weir. Based on weir counts and average run timing, the department is projecting to exceed the SEG." The following weekend, Cottonwood and Wasilla creeks were liberalized using the Fish Creek weir count as an index of run strength. In the case of the Deshka River, the SEG had already been exceeded prior to liberalization due to 18,000 coho passing the weir over a weekend. Sport fish EO's are not typically issued during a weekend. The EO was processed and issued as soon as possible following the weekend, which turned out to be close of business or 5 p.m. on Tuesday, August 22. The Deshka River was used as a surrogate to liberalize the rest of the Susitna River drainage at the same time. The Deshka River coho salmon escapement goal is new and coho run timing to the Deshka River weir is highly variable. These factors can make it more challenging to manage the inriver sport fishery. Bait was restored on the Little Susitna River on August 23; by that date, the SEG was projected to be met, but not exceeded.

12. Northern Cook Inlet Management Area sport fisheries for wild king salmon have been managed by emergency order for the past 5 years inconsistent with regulations listed in the sport fisheries regulation book. In some areas extremely limited or no legal king salmon harvest has been allowed for 5 years. When can we expect to see specific king salmon management plans that will better inform the public as to regulations or expected regulations under specific return levels? If not management plans when will we see regulations in the book more accurate to what regulations will likely be or reflecting what relations have been for the past 5 years?

ADF&G Response: *Beginning in 2012, following several years of poor king salmon runs fraught with midseason closures, the department began to utilize a management strategy that took into account harvest reductions necessary to achieve escapement goals by management area and public input from stakeholder meetings. Public meetings early on in the downturn of*

production revealed that a full season of fishing opportunity, even though highly restrictive, was preferred over a less restrictive season that would likely be interrupted by midseason closures. Midseason closures had created a situation of less predictable fisheries 2008-2011 and harvesting out of proportion to the run. The goal became to maximize fishing opportunity while conserving stocks and decreasing the potential for midseason closures. Harvest reductions were implemented by EO prior to the start of the season and have varied by area, from 100% reduction in the Eastside Susitna area to a 60% reduction on the Yentna River drainage to less than 25% on the Deshka River. Harvest reductions have been based upon the level needed to achieve escapement goals in the various areas based off the immediate past two to three years of harvest and escapement data. In addition, consideration has been given to potential shifts in effort due to some areas being more restrictive than other areas. Managing by EO allows for intricate, finer detailed management and the greatest potential for maximizing opportunities. The board, general public, and many guides have realized this and have been supportive of the effort. The department has tried to issue preseason king salmon restrictions mid-February in order to provide stability for those planning fishing trips. It is ultimately up to the board to determine if restrictions issued by emergency order are necessary long term and should be embedded in regulation, or if the restrictions are short term solutions necessary to manage through periods of low productivity.

We recognize that inseason management actions and even preseason management actions are disruptive and confusing to many sport anglers. We are sensitive to that and we keep that in mind when weighing the cost and benefits of the management actions we take. To that end, we are continuing to work towards simplifying regulations and developing mobile web applications for sport fishing regulations.

Matanuska-Susitna Borough Fish & Wildlife Commission Requests to Alaska Dept. of Fish & Game



1) • err on the side of conservation when making management decisions, not as it has been, erring on the side of a surplus commercial harvest before conservation is met in northern streams.

—Change the present ADF&G philosophy that manages for the dominant Kenai stocks over others. Apply more stock specific management strategies, which ensure salmon movement to northern waters first.

2) • restore sonar to the Susitna River, this time close to the mouth

—Sonar ended on the Susitna River in 2009.

3) • continue the weir on Jim Creek and the foot survey on McRoberts Creek

—Both end this year. The Mat-Su Fish Commission helped direct funds to pay for the count recently.

4) • restore the test fishery off Kalgin Island to collect data on the mixed-stock fishery.

—This will show where different species of fish are and when. This data was collected for 3 years out of a 5-year capital project. On the fourth year, the money that was appropriated by the State Legislature at the request of the Mat-Su Borough Fish Commission was absorbed into the Fish and Game budget, and the test fishery was not completed.

Mat-Su Borough Public Affairs 861-8577 or psullivan@matsugov.us

FWC Questions for ADF&G
January 24, 2019

1. During the 2018 season most Northern Cook Inlet king salmon fisheries were either greatly restricted or closed for a large portion of the season. How successful were the Department's egg take efforts at Deception Creek and the William Jack Hernandez Hatchery? During the 2019 season how many king salmon smolt does the Department anticipate having to stock at Deception Creek? Eklutna Tailrace? and Ship Creek?

The department's egg take at Deception Creek was not a success in 2018. Only a handful of wild origin king salmon adults returned to the Deception Creek weir site and we collected less than 19,000 eggs. With so few eggs from Deception Creek, the Division of Sport Fish decided to release all the smolt produced from those eggs in the Eklutna Tailrace in 2019, and none in Deception. The Ship Creek smolt release is the priority for 2019, since it is a primary brood collection site. WJH Hatchery currently has enough eggs for about half the planned stocking for Eklutna Tailrace but that comes at the expense of the stocked lakes Catchable king production. We are attempting to produce Catchable coho for stocked lakes in 2019 to replace the Catchable king salmon production shortfall.

See table 1 below.

2. Last spring Director Brookover assured Mat-Su sportfishing interests that the Department would have the 2019 king salmon outlook out by November. What is the Department timeline for when the outlook and any season starting emergency regulations may be released?

The forecast and emergency orders EO 2S-01-19, EO 2-KS-19-1 and EO 2-KS-20-1 were issued on Monday, January 7, 2019. The department remains committed to providing data and information to the public as quickly as possible. Early in 2018, Division of Sport Fish evaluated its process for producing the Doshka king salmon forecast and made changes resulting in a draft outlook being available for internal review in late November. With a new administration starting in December the department wanted to allow the new administration time to consider staff recommendations for management of the fisheries before they were presented to the public.

3. At a 2018 meeting with the Mat-Su Borough Fish and Wildlife Commission Director Brookover said the Department with public help would develop a king salmon management plan proposal for Northern Cook Inlet and / or Doshka River for submission to the Alaska Board of Fisheries. This plan could help provide a more consistent and certain regulatory framework for Northern Cook Inlet king salmon management. When is the Department willing to start working on this proposal?

The department has already begun reviewing and preparing to discuss the draft king salmon management plan prepared by the Mat-Su Borough Fish and Wildlife Commission. The department is supportive of scheduling meetings with the commission to evaluate the plan and discuss management implications, so the commission can submit a proposal by the April 10 deadline.

4. All Upper Cook Inlet sockeye salmon and silver salmon goals were achieved during the 2018 season, and Northern Cook Inlet silver salmon sport harvest opportunities were much earlier and more robust than for the past several years. What can and is the Department willing to do to make this a more consistent occurrence?

The department's primary objective is to manage commercial and sport fisheries following management plan provisions to meet stock-specific escapement goals. The department cannot control total run size or run-timing and both will continue to be variable. Our primary objective will continue to be achieving escapement goals, where present, in NCI and other drainages. In both 2017 and 2018, all NCI sockeye and coho salmon goals were achieved or exceeded, albeit run-timing varied dramatically between the two seasons. Total run size and run-timing significantly impact NCI sport fishing opportunity and quality.

5. What are ADF&G's research priorities for Northern Cook Inlet? And for Upper Cook Inlet?

The Division of Sport Fish research priorities are reflective of the following projects that support management of sport fisheries in NCI and UCI:

- *In 2019, the division of Sport Fish will estimate both king and coho salmon abundance in the mainstem Susitna River. In addition, this project provides additional inseason information such as fishwheel catch-per-unit-effort, and post-season data such as age and genetic stock composition.*
- *The division also plans to continue working with the U.S. Fish and Wildlife Service on juvenile salmon studies in the Deshka River drainage. These studies include gathering physical stream data and basic fish distribution throughout the drainage. This research is testing the feasibility of using juvenile data to improve preseason run forecasting.*
- *In addition to the above research projects, the Palmer Sport Fish office will continue to operate core salmon assessment projects that directly inform preseason and inseason management. These include the Deshka, Little Susitna, Fish Creek and Jim Creek weir projects, aerial index surveys of king salmon abundance, and foot index surveys of coho salmon abundance.*
- *Northern pike suppression gillnetting and assessment of juvenile salmon abundance and distribution will continue on Alexander Creek. Work is also being initiated to eradicate northern pike in Kings and Anderson lakes.*

The Division of Commercial Fisheries research priorities for NCI and UCI include:

- *Estimate annual inriver runs of sockeye salmon to the Yentna and mainstem Susitna rivers (via genetic capture-recapture). Sockeye salmon could be collected from the lower Yentna and Mainstem Susitna rivers from ongoing Chinook and coho salmon projects. Then, using samples collected at Judd, Chelatna, and Larson lake weirs, genetic capture-recapture abundance estimates for each drainage could be made. This project is not currently funded.*
- *Development of better tools and models to improve inseason projections for UCI sockeye and coho salmon stocks. This project is not currently funded.*
- *Quantify the effects of northern pike suppression on sockeye salmon production in Chelatna and Hewett lakes. DCF conducted northern pike suppression efforts the past two springs (2017 and 2018) on Chelatna Lake and will do so again in 2019.*

- Quantify spawning of sockeye salmon in the mainstem Susitna River. This would be a project to review the Susitna-Watana and AKSSF radio telemetry GIS layers to quantify mainstem Susitna spawning sites for sockeye. No new field work, simply mining existing data sets to answer this frequently asked question. This project is not currently funded.

6. If a stock of concern has been listed for a number of years, what information or criteria does ADF&G need to take this stock off the concern list?

To remove a stock from SOC status, that stock should have met escapement or yield objectives over a recent four to five-year period and the escapements should fall throughout the range of the escapement goal. The policy for the management of sustainable salmon fisheries (5 AAC 39.222) defines a stock of concern (SOC) as a stock of salmon for which there is a yield, management, or conservation concern. All three levels of concern include what is referred to as a chronic inability to meet defined escapement or yield objectives. A chronic inability means the continuing or anticipated inability to meet escapement goals over a four to five-year period, which is approximately equivalent to the generation time of most salmon species.

7. What is the juvenile Susitna sockeye salmon production from the lakes? What is Deshka Chinook smolt production?

Juvenile Susitna sockeye salmon production from area lakes and Deshka king salmon smolt production are unknown because there is no juvenile sockeye salmon or king salmon monitoring in the Susitna drainage.

The department is not able to provide any estimates of juvenile sockeye salmon production largely due to budget cuts that eliminated sockeye salmon smolt or hydroacoustic fry assessment efforts, except for the following two instances:

- 1) *In September 2018, the DCF, in cooperation with the Cook Inlet Aquaculture Association (CIAA), conducted a hydroacoustic population survey to assess fall fry production in Hewitt Lake. A total estimate of 7.3 million fish were in the lake. Threespine stickleback were the most abundant fish present at about 6.9 million (94.5%) followed by juvenile sockeye salmon at approximately 0.4 million (5.5%). The average length and weight of the age-0 sockeye salmon fry was 37.8 mm and 0.67 g. The department and CIAA have 2 more field seasons (2019 and 2020) at Hewitt Lake to assess the effectiveness of northern pike removal on increasing sockeye salmon production in the lake.*
- 2) *In 2018, CIAA released 46,000 sockeye salmon smolt into Shell creek in an effort to increase the number of mature sockeye salmon that will return to spawn in Shell Lake. CIAA estimated 32,606 smolt emigrated from Shell Lake in 2018.*

Although no information is currently available on Deshka River king salmon smolt production, Palmer Division of Sport Fish staff are collaborating on juvenile king salmon work with the U.S. Fish and Wildlife Service. This work will inform the feasibility of estimating smolt production in the future. A proposal for Mat-Su Salmon Partnership NFHP funds has been submitted to help fund this work. To date, attempts to capture Deshka River king smolt in sufficient quantities have been unsuccessful.

8. When Susitna stock of yield concern goes away, given the tools available now, does ADF&G have what it needs to provide in-season abundance-based management of Susitna and Yennta rivers to support the subsistence, sport, commercial and personal use fisheries?

No, the department does not have the tools necessary to provide inseason abundance-based management of Cook Inlet commercial fisheries or of the Tyonek Subdistrict subsistence fishery. In the commercial fisheries, both the Central District Drift Gillnet Management Plan and the Northern District Salmon Management Plan contain restrictive provisions that were developed to conserve Susitna River sockeye salmon. Sockeye salmon escapement is monitored in the Susitna River drainage at weirs on Chelatna, Judd, and Larson lakes. The department will continue to monitor sockeye salmon escapement at these weirs as long as those programs remain funded. However, these programs have little use for inseason management of the commercial fisheries because the lakes are far removed from the marine waters of UCI. Unless modified by the Board of Fisheries, a conservative approach to commercial fisheries that harvest Susitna River sockeye salmon as provided in regulatory management plans would continue to be followed when the stock of concern status is removed. The department utilizes the Larson Creek weir to manage the inriver sport fishery at the mouth of Larson Creek. Currently there are no personal use salmon fisheries in the Susitna River drainage.

9. Please provide this year's king and coho salmon escapement counts in Northern Cook Inlet Management area including systems with and without goals?

See table 2 below.

10. Under provisions of the Central District Drift Gillnet Fishery Management Plan (5 AAC 21.353), the Commercial Fisheries Division announced an opening for the drift fleet on August 23, 2018. The management plan specifically states that for any commercial drift fleet opening from August 16 until closed by emergency order, only Drift Gillnet Areas 3 and 4 are open for fishing [5 AAC 21.353 (f)]. A description of these areas is contained in regulation [5 AAC 21.353 (g) (3 and 4)], but essentially moves the fleet over to the west side of Cook Inlet. The announced August 23 opener contained an added provision stating that the fleet could also fish in Drift Area 1 [5 AAC 21.353 (g) (1)], which includes all waters of the Central District south of Kalgin Island. This is a major expansion of the Board of Fisheries (BOF) specified allowable fishing area for this period. Since there were no significant escapement goal concerns regarding either the Kenai or Kasilof Rivers, the Matanuska-Susitna Borough Fish and Wildlife Commission questions why the ADF&G, Commercial Fisheries Division decided to assume allocative authority by allowing one gear type to fish in an area the BOF clearly had designated as an area off-limits during the time period of the opener?

The decision to open a 12-hour drift gillnet commercial fishing period in Drift Gillnet Area 1 on August 23 relied upon a variety of sources of information. First, nearly 125,000 sockeye salmon had passed the Kenai River sonar counter in the previous 5 days (Aug 17-21) prior to the EO being released on August 22. The Alaska Board of Fisheries has directed the department to manage all fisheries to meet escapement goals (5 AAC 21.353(e)) within the framework of stock specific or drainage specific management plans. The only time the department is to deviate from management plan provisions is if strict adherence to those provisions might lead to escapement goals being missed. When the decision was made to add Drift Gillnet Area 1 to a normal regulatory opening of Drift Gillnet Area 3 and 4 this past summer, the Kasilof River sockeye salmon BEG had already been exceeded and sockeye salmon daily passage estimates in the Kenai River continued to increase with abnormally late and strong salmon run entry, indicating it was possible the inriver goal might be exceeded if the strength of the late run entry continued. Furthermore, inseason information about coho salmon throughout UCI indicated above average abundance and that all NCI escapement goals were projected to be met or exceeded; moreover, NCI sport fishery regulations for coho salmon had been liberalized. This expansion of the drift gillnet regular period was provided to harvest any excess sockeye salmon still in the District. However, commercial fishing opportunity was limited to the drift fleet only and included only Drift Gillnet Area 1 in order to reduce the potential risk for a high harvest of coho salmon in the northern part of the Central District that would be more likely to occur if setnets or a larger area had been opened. Finally, by this date in August, nearly all NCI coho salmon would have migrated through the Central District of UCI, so limiting the drift fleet to Drift Area 1 and not

fishing the Upper Subdistrict set gillnet fishery would result in a much lower harvest of Kenai and Kasilof bound coho salmon.

11. Did the low sockeye harvest indicate that Kenai sonar was counting pinks as sockeyes? What methodology have they developed in the last couple of years to refine the counts?

No, the low sockeye salmon harvest did not indicate the Kenai River sockeye salmon sonar counter was counting pink salmon as sockeye salmon. In fact, a few days after the expanded opening into Drift Area 1, Kenai River sockeye salmon daily passage estimates decreased to the point where the sonar project was terminated for the season due to low counts. Thus, the low harvest on August 23 was corroborated with low sonar counts a few days later.

In the Kenai River, fishwheels are used to apportion sonar target counts to species of fish. One of the biggest challenges the department faces statewide is apportioning sonar counts to individual salmon species in river systems where multiple species are encountered. In 2018, in the Kenai River, the number of fish counts that were apportioned as pink salmon was more than 600,000 fish (from August 8 to August 28). During this same time period, 430,000 fish counts were apportioned to sockeye salmon. Fishwheels have been used in the Kenai River to apportion sonar counts since the project began in the late 1970's. In some years, gillnets have been used in conjunction with the fishwheels to corroborate species apportionment.

In August of 2016 the department reviewed species apportionment by conducting a study to estimate the proportion of the total sonar counts comprised of sockeye salmon at the RM 19 sonar site when pink salmon were abundant on the Kenai River. This project used a variety of fishing methods (fish wheels, anchored gillnets, drift gillnets, and beach seines) for two weeks in August to apportion sonar counts by species. It appears that the proportion of pink salmon captured in fish wheels and drift gillnets is in part determined by the location where the gear is fished. Sockeye salmon passage estimated using the standard fish wheel apportionment method was not significantly different from passage estimated using combined anchored gillnet and seine data to apportion sonar counts. The comparison of sockeye salmon passage estimates using 6 apportionment methods indicated the difference between estimates was a relatively small proportion (1.2–4.7%) of the total passage estimate, and that it was not possible to unequivocally determine which apportionment method provided the most accurate sockeye salmon passage estimate. Due to salmon behavior, land ownership issues, and various problems encountered when fishing with gillnets and seines at the Kenai RM19 sonar site, the department recommended fish wheels continue to be used for species apportionment and that modeled species proportions based on north bank fish wheel catches be used to apportion south bank DIDSON counts.

Table 1.- 2018 and expected 2019 Chinook Southcentral Alaska king salmon smolt release information by location, 2018 and 2019.

2018 - 2019 Chinook Smolt Summary

Chinook Smolt	2018 Request	2018 Stocked	Number Long/Short	Percentage of Request	2019 Request	2019 Planned Stocking	Number Long/Short	Percentage of Request
Ship Creek	365,000	389,797	24,797	6.8%	365,000	365,000		
Homer Spit	315,000	328,142	13,142	4.2%	315,000	315,000		
Ninilchik R.	150,000	150,053	53	0.0%	150,000	150,000		
Seldovia Harbor	105,000	104,890	(110)	-0.1%	105,000	105,000		
Crooked Cr	140,500	149,622	9,122	6.5%	140,500	125,000	-15,500	-11%
Deception Creek	212,000	211,168	(832)	-0.4%	212,000	0	-212,000	-100%
Eklutna	424,000	432,369	8,369	2.0%	424,000	226,748	-197,252	-47%
Fleming Spit,								
Cordova	105,000	107,306	2,306	2.2%	105,000	105,000		
Whittier	105,000	106,261	1,261	1.2%	105,000	105,000		
Seward Lagoon	315,000	324,509	9,509	3.0%	315,000	315,000		
Total:	2,236,500	2,304,117	67,617	3.0%	2,236,500	1,811,748	(424,752)	-21.0%

Table 2.- King and coho salmon weir and index counts for Northern Cook Inlet, 2018

System		Survey	SEG
<u>Chinook salmon</u>			
Knik Arm	Little Susitna River (weir)	549 ^a	2,300-3,900
	Little Susitna River	530	900-1,800
	Moose Creek	108	
Eastside Susitna	Chulitna River	1,125	1,800-5,100
	Clear Creek	940	950-3,400
	Goose Creek	90	250-650
	Little Willow Creek	280	450-1,800
	Montana Creek	473	1,100-3,100
	Prairie Creek	1,194	3,100-9,200
	Sheep Creek	334	600-1,200
	Willow Creek	411	1,600-2,800
	Indian Creek	326	
	Portage Creek	429	
	Kashwitna River	112	
Westside Susitna	Alexander Creek	296	2,100-6,000
	Deshka River (weir)	8,549	13,000-28,000
	Lake Creek	1,767	2,500-7,100
	Peters Creek	1,674	1,000-2,600
	Talachulitna River	1,483	2,200-5,000
	Cache Creek	154	
	Canyon Creek	169	
	Red Creek (Yentna)	390	
West Cook Inlet	Chuitna River	939	1,200-2,900
	Lewis River	0 ^b	250-800
	Theodore River	18	500-1,700
<u>Coho salmon</u>			
Knik Arm	Little Susitna River (weir)	7,583 ^a	10,100-17,700
	Fish Creek (weir)	5,023	1,200-4,400
	McRoberts Creek (Jim Creek system)	758	450-1,400
	Upper Jim Creek	1,215	
	Wasilla Creek	339	
	Cottonwood Creek	616	
Eastside Susitna	Question Creek	513	
	Birch Creek	143	
	Rabideux Creek	110	
Westside Susitna	Deshka River (weir)	12,962	10,200-24,100

^a incomplete count^b Main channel diverted into large muskeg; intermittent connection with Cook Inlet.



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Final Question List for Dec. 5 ADFG joint meeting with FWC

Written Responses Requested

1. What evidence is there that Turnagain Arm salmon stocks are in better health than Susitna River Drainage salmon stocks? or Knik Arm drainage salmon stocks? Is there any reason to believe that commercial harvest rates of Turnagain Arm sockeye salmon stocks are lower than harvest rates of Susitna sockeye salmon stocks? or Knik Arm sockeye salmon stocks?

(3:53)

(third on right – next to Bert Lewis)

Andy: we are really talking about...you are saying they are just harvesting what?

2. What triggers the Department in allowing more nets for commercial harvest on the Eastside of the Northern District after it has issued an emergency order seeking to reduce the Northern District harvest of Susitna Sockeye?

Bert Lewis: (3:40)...the restrictions go away in early August because of Sockeye concerns. There are a couple different cavattes

Dan: Is that a proper management plan ... to the norther district

Bert Lewis:...on July 20th – there are three options we can use ... we have not used the most restrictive option.

3. For several years now the Department has been expanding the number of nets allowed to some Northern District set netters in early August by emergency order. Important Northern District sport coho salmon fisheries have had to be restricted or closed after the emergency order allowing more Northern District nets targeting coho salmon. How does the Department determine if the emergency order will be issued to allow additional Northern District commercial nets in August?

4. From guided logbook data, during the month of May how many guided anglers fished the Susitna River drainage? and how many king salmon did they harvest from the Susitna River drainage during the month of May for each year of the guided logbook program?
5. How did the 2019 management of commercial Cook Inlet salmon fisheries impact returns in the Northern District and Mat-Su Drainages?
6. Why is the Department recommending fishing for King Salmon only 4 days a year on the Parks Highway streams?
 Sam Ivey: Proposal 222 ... what we have seen over the last couple years in Unit 2...we are gonna have to crack that in an RC at the BOF meeting.
 (Second to last.
 Doug Vincent-Lane: ...fishing forecast out...preseason structure...we will be waiting until after the BOF.
7. What are the effects of King Salmon fishing in early May and early June in Unit 2 and Talkeetna River? How many fish would be harvested if a king fishery was allowed in unit 2 during May?
 (3:57) Sam Ivey: Handout Reference Table for question 7.
 Amber Allen:
 (4:02) Sam Ivey: ...we want to keep the regulations consistent...
8. At the January 24, 2019 meeting between ADF&G and the Mat-Su Borough Fish and Wildlife Commission, the question was asked about what criteria the department would use to delist a stock of concern. ADFG's written reply was, "To remove a stock from SOC status, that stock should have met escapement or yield objectives over a recent four or five-year period and the escapements should fall throughout the range of the escapement goal...."

At the recent BOF workshop, when a BOF member brought up that escapement goals had not been met consecutively over the past four or five recent years for all indicator systems the department monitors for the Susitna drainage and questioned what criteria the department was using to delist Susitna/Yentna sockeye, he was told that each system is unique and must be examined on a case-by-case basis.

Which approach do you want? Why?

(3:43) Bert Lewis: (stock of concern memo on screen)

...in general, we are meeting the escapements; for yield, ...we have yield and escapement and thus we are recommending to remove (delisting). There was an action plan associated with this...those conservative management...

Commented [KR1]: Do we have this memo?

Howard: You are saying those are yield numbers...

Bert: This is harvest above and beyond the escapement levels. There was an error when we put this out...

Dan Mayfield: How often has our escapement goals been reduced...

Bert: I do not have that on hand

Tim McKinley: The Judd, Cheletna...we just lowered the goals three years ago. They have been the same... There was an error and now there is a committee of use to determine Thank you Larry for finding that.

Dan: It does appear ... to the layman, it appears escapement goals are being lowered. We had a robust fish resource in years past and we have seen the recent decline in angler days...our fish resource itself continue to decline.

Doug Vincent-Lane:

Pat Shields: two of the three lakes did not change. Chilatna went from 20:65 to 20:45...we have met the goals...it some we met, we actually exceeded.

Doug:

Pat Shields: ...I would say with regard to escapement goals...we probably would have an easier discussion...in the last five years, these goals have been met in a very high rate.

Israel: ...we reduce net time...Good job guys.

9. ADF&G is making major changes in their king salmon management scheme for the Susitna drainage. Rather than continuing to manage on a drainage by drainage basis, the department plans to divide the area into four "sub-basins:" the Yentna; Deshka; Talkeetna; and Eastside Susitna Rivers and manage each sub-basin as a unit.

One puzzling aspect is that the "new" recommended escapement goals don't appear to be related to the original goals for each system contained in that sub-

basin. Also, several areas are being downgraded from having a “biological escapement goal” or BEG, to having a “sustainable escapement goal” or SEG.

How did you arrive at the proposed sub-basin escapement goals and how will these sub-basins be managed compared to the previous individual drainages management scheme? Which “indicator systems” would be monitored within each sub-basin to see if escapement goals are being met? (HD)

Nick Decovich: prepared a [presentation](#). New framework: This was unveiled at the BOF worksession. We had a lot of questions. Deshka weir counts (blue bar chart)

Matt Miller (3:12) Provided a more indepth reasoning for the presentation and goal recommendations, etc.

Israel Payton: (3:14)

Larry : I want to share some concerns that Israel just expressed. With the new technique, we drop the goals substantially. The big concern is that perhaps we need to bring that lower bar up a little bit. Maybe that is something that the BOF should do. Maximum sustain recruitment – would that be a more conservative approach? Why are we doing this...are we trying to make the runs look good?

Nick: Matt brought up the approach setting escapement goal by stock

Larry: I don't think there is any objection –if you're a looking at a precautionary approach...MSY and MSR (3:28)

Nick:

Doug:

Israel: There are a lot of definition...I have a request in an email of the state's definition of MSR?

Jim Hasbrouck: You have to have stock recruit data...

Israel: Can't you set...

Matt: I don't think so.

Israel:

Matt:

Tim McKinley:

Israel:

Tim McKinley:...we have policies to direct us to that. The hash marks mean...

Israel: The number does not equate to good fishing.

Commented [KR2]: Requested a copy of this presentation from Nick Decovich...

10. The entire Northern Cook Inlet King Salmon Fishery (except Eklutna) was closed preseason and remained closed in 2019. Is this likely to occur again in 2020?

Matt Miller: Deshka forecast is almost finished – hopefully done by Christmas. We do not anticipate it happening. Don't anticipate it being rosey.

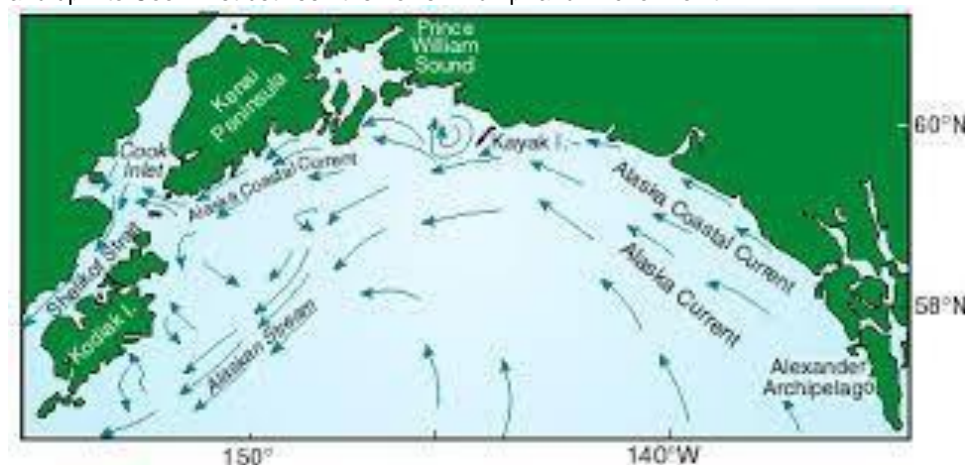
11. When can we expect the 2020 Northern King Salmon outlook to be announced? And what is the timeline for 2020 season starting king salmon emergency orders (if any)?
12. What are divisional salmon research and management project priorities for Upper Cook Inlet? And please identify any programs that are likely to be eliminated because of reduced funding.
13. How many salmon streams have lost their salmon stocks - reds, silvers or kings? (In the last 40 years or whenever record keeping was started.)
14. How many stocks have not or are not being monitored to stock numbers?

The next question results from a preamble topic discussion of Cook Inlet water circulation.

Below are two maps showing water circulation, one for the northern Gulf of Alaska, the other for Cook Inlet. Please study them carefully. I pulled each from arenas of; State and Federal agency reports and also from oil industry studies which needed this type of information in case of needed response to potential oil spills. These maps will be used to build question or questions from, as related to salmon homing back to natal streams in Upper Cook Inlet (UCI).

Bullet statement: Salmon can olfactorally detect concentrations as low as parts per billion (ppb) and parts per trillion (ppt).

The water circulation map of the northern Gulf, for our perusal, specifically of the northwestern Gulf where Gulf waters encroach into lower Cook Inlet water. This occurs at the lowest end of the Kenai Peninsula where it primarily influences Kachemak Bay and up into Cook Inlet between the "lower mid rip" and Anchor Point.



The better defined Cook Inlet water circulation map below shows the "lay" of "mid channel rip", "west rip" and "east rip". With an average summer flow discharge into Cook Inlet of 51,000 cubic feet per second (!!!), no other drainage emptying water into Cook Inlet even comes close or near to the outer foul poles of a baseball park as the discharge from the Susitna River. "So", Cook Inlet water is primarily composed of Susitna watershed waters. Studying the flow map, Susitna water is in the upper inlet side to side until the "eastern most" circulation hits the "east forelands" and deflects northeasterly back up the inlet into Turnagain Arm, farther continuing north to just west of Fire Island where Knik and Matanuska Rivers combine with the northerly circulation flowing Susitna influenced water to form a "gyre" just west of Fire Island. The silt seen

looking across at ebbing and low tide of Turnagain Arm is due to silt deposition resulting from the settling out of silt from the northeasterly "backwash" of the Susitna River water. Below the "east forelands" there is a slight holding up of Susitna circulating water due to The Kenai River discharge making a slight hydro-barrier to Susitna water. Because the Susitna water circulation is so dominant paralleling Kenai-Kasilof River discharges, its influence is much like an upward backwash or huge lengthy eddy of Kenai-Kasilof water moving north along the beach above the "east forelands" where eventually both Susitna and Kenai water have more mixing. As a side note, this explains why "most", not all, salmon migrating into the Kenai River drainage occurs at high tide because at low tide the appropriate "natal" smells of the Kenai are simply not as prevalent due to the unending circulation push of Susitna water towards the lower inlet pushing Kenai-Kasilof water towards the beach. In addition to salmon coming in with the high tide, the tide pushes Kenai water northerly along the beach and slows Susitna water circulation and the combining with other waters in the immediate area.



15. Can Andy Barclay log onto a combination map of Cook Inlet water circulation, which is provided, and overlay that with the map(s) used in his 2016 "Cook Inlet coho salmon gene projects update" the additional genetic information since With additional genetic information from draft reports, from draft reports?

16. What is the turn-around time from the point of collection rough analysis of samples taken for genetic purposes of stock ID during the Bristol Bay and Cook Inlet test fisheries, respectively, to be made available to fish managers?

17. Modeling for escapement of the Kenai-Kasilof areas, the models used are; spawner abundance adult return yields, return-per-spawner, classic Ricker model, Markov Table, Beverton-Holt model, Hockey Stick model, Brood Interaction model, Cushing Model, and Autoregressive Ricker model. Since none of these are used in UCI (?), modeling for UCI is dependent on "indicated escapement index" or an "escapement estimate" is used. At what point or criteria that it takes, does one say, the system does not work?

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FISH AND WILDLIFE COMMISSION

Memorandum

RE: Questions for ADF&G Annual Fisheries Season Update for November 18 special FWC meeting.

Questions

1a. What options/actions do you have/use to keep the legislators informed of fisheries management decisions/actions? I talked with a number of them recently at a candidates fund raiser the other evening and none were aware of the problem with the Pitman-Robinson or Dingle-Johnson funding. Just an example.

Management related information or data is given out by request and sometimes through direct contact. In the past, legislator questions have been answered at forums, such as this meeting with the FWC, during field trips of various stock assessment projects, or formal legislative hearings. Additionally, the department has several avenues for receiving automated notifications of decisions, which can be tailored to meet the legislator's particular areas of interest.

1b. 2020 10 6 2020 Numbers of salmon returning Shelikof Strait

During the late 1990s negotiations between the Cook Inlet Drifters and the Kodiak commercial fishing groups discussed numbers of one million additional sockeye salmon alone, not counting king, Coho, Pink and chum salmon, that would be heading to Cook Inlet streams. This year's low returns does not reflect positively on

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the new management strategies implemented by the Board of Fish at the Kodiak meeting. **What were the department's expectations for increased numbers of salmon that would return to Chignik, Kodiak and Cook Inlet streams and what are your expectations 2021 and later? What are the department's estimates for the Shelikof Strait salmon fisheries?**

The department did not expect to see measurable changes in abundance of fish returning to Cook Inlet streams resulting from actions taken by the Alaska Board of Fisheries during the December 2019 Kodiak meeting. Harvest of Cook Inlet-origin sockeye salmon in Kodiak Management Area is highly variable annually and spatially within the season. This is due to variability in run strength of local stocks that determines KMA fishing opportunity in areas where Cook Inlet salmon might be present, as well as relative strength and migration pattern of Cook Inlet stocks each year. Upper Cook Inlet (UCI) sockeye salmon return in 2020 was nearly identical to the preseason forecast return. Kodiak Management Area (KMA) sockeye salmon return in 2020 was at the lower end of the forecast range and Chignik Management Area return was below the forecast range. Among Kodiak, Chignik, and UCI management areas, four sockeye salmon escapement goals were not met in 2020 – Chignik early and late-run, Malina Lake, and Larson Lake.

Forecasts for 2021 are being prepared and will be published in the coming months. We do not prepare forecasts for returns further in advance than the upcoming fishing season. Many sockeye salmon stocks in the Gulf of Alaska are experiencing a period of reduced productivity and there is nothing to suggest increasing abundance in 2021 or the near-term future beyond 2021.

The Shelikof Strait commercial salmon fishery occurs in waters of Westside KMA and Mainland District. In 2020 the department monitored the fishery on the grounds to determine sockeye salmon catch and to facilitate orderly and short-notice closures if harvest limits described in the *North Shelikof Strait Sockeye Salmon Management Plan* are met. A Seaward Zone closure was implemented in the North Shelikof Unit at 11:30 p.m. July 13 when it was estimated that cumulative sockeye salmon harvest had approached the 20,000 fish limit. Total July 6 to August 1 harvest in the North Shelikof Unit was 96,593 sockeye salmon, which included both the Shoreward and Seaward Zone harvests. A Seaward Zone closure did not take place in the Cape Igvak Section. Total July 6 to August 1 harvest in the Cape Igvak Section Unit was only 4,000 sockeye salmon, which included both the Shoreward and Seaward Zone harvests. A Seaward Zone closure did not take place in the Southwest Afognak Section. Total July 6 to July 25

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harvest in the Southwest Afognak Section Unit was only 11,807 sockeye salmon, which included both the Shoreward and Seaward Zone harvests. 2020 harvest in KMA waters of Shelikof Strait was 14.4 million pink salmon and 1.2 million sockeye salmon with escapement of 8.3 million pink salmon and 0.8 million sockeye salmon.

2a. To quote, "One puzzling aspect is that the new recommended escapement goals don't appear to be related to the original goals for each system contained in that sub-basin. Also, several areas are being downgraded from having a biological escapement goal, BEG, to having a sustainable escapement goal, SEG."

i. Is the BEG and SEG still being used?

The new goals in fact are not relatable to the old goals. The new goals are abundance-based and assessed goals, while the old goals are index-based and assessed.

The old king salmon escapement goals were all SEGs. Beginning with the 2020 season, the Deshka escapement goal was in fact upgraded to a BEG, and the other new stock goals (Eastside, Talkeetna, and Yentna) were set as SEGs. There is no functional difference between a BEG and an SEG. The SEGs for individual streams within each of these three stock groups were discontinued and replaced by the new goals.

ii. At what point does the department quit depending on estimations and model tweaking and establishing model projections from boots on the ground hard core data?

The department is collecting "boots on the ground" data in the form of aerial surveys, creel surveys, weir projects, radio tagging, and M-R abundance estimates for managing local king salmon stocks. A weir is often the most accurate method for assessing escapement in any system because they provide an actual count. A weir can also be used as a tool for inseason fisheries management, as can sonar and counting towers that also provide daily estimates of escapement or salmon passage. Weir projects are, however, expensive to run and not appropriate or even possible for systems too large to accommodate a weir. The department currently runs weirs for king and coho salmon on the Deshka River and Little Susitna rivers and for sockeye salmon at Judd Lake, Fish Creek, and Larson Creek. The department would like to run a weir or sonar project on Lake Creek, however, we lack the funding to do so at this time.

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Folks commonly ask us how we are using the data we collect to manage fisheries. In the case of Susitna king salmon, we are using all the “boots on the ground” data that has been collected back to the late 1970s to model the historical production in four areas of the drainage that have traditionally been managed as units (we’re recognizing these as “stocks”). This is the culmination of data collected by aerial surveys, creel surveys, weir projects, and M-R abundance estimates. The run reconstruction and production modeling has greater utility than any one source of data because it uses all sources to come up with estimates of actual escapement and total run (vs. an index (aerial or foot survey) which is a fraction of the actual escapement). The new escapement goals are also based on estimates of MSY (vs. the percentile approach which is only a proxy for MSY). The aerial index surveys are a large part of the modeling and must continue to be flown each year to assess achievement of the new stock goals.

2b. How did this year's return of King salmon fit, as compared to prior projections, per the four sub-basin strategy: Yentna, Deshka, Talkeetna, and Eastside Susitna Rivers? Same question, but, drainage by drainage management basis?

The Deshka River run came in close to forecast. Forecasts were not generated for the other three stocks, however, based on past few years of escapements, the expectation was for run performance similar to 2019 or to continue an upward trend on each system. The department had the same expectation for the Little Susitna River. During 2019, the Deshka and Eastside Sustina streams performed more poorly relative to Yentna tributaries and those north of Talkeetna, even Talkeetna itself. Conversely, the outcome of the 2020 season suggests the Deshka and Eastside Susitna stocks performed a little better relative to Yentna and Talkeetna stocks. The Little Susitna River performed as expected. Escapement goals were made on Deshka and Eastside Susitna stocks, and Little Susitna River, and not met on Talkeetna and Yentna stocks. The OEG on Yentna was missed while the SEG was achieved. Whether achieved or not, abundance remains near the lower ends of all goal ranges as production remains on the low side.

Historically fewer than 10% of the Kenai River sockeye salmon entered the river in August. However, during the period 2014 -2019 approximately 46% of run arrived in August. This year 62% of the Kenai River sockeye arrived in August (nearly 500,000 fish during a four day period in mid August).

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3a. How does this change in “entry pattern” impact management of the commercial fishery? Please identify adjustments to management.

The Department manages to achieve escapement goals. Daily management decisions associated with Kenai River sockeye salmon are primarily based on run entry into the Kenai River as observed at the sonar site compared to different run entry scenarios. Average, late, and early run timing scenarios are calculated to compare to inseason observed data to help determine if the run entry may be early or late. OTF data is also used to determine if run entry of all UCI sockeye salmon stocks are early or late entering the inlet. Decisions to open or close commercial fisheries could be enacted later in the year if observed inseason run entry patterns more closely match late run time scenarios. To some degree the *Central District Drift Gillnet Fishery Management Plan* has date dependent stipulations which will still be followed, as well as season closing dates.

3b. Have you considered extending the Anchor Point off-shore test fishery into August to better accommodate this later entry pattern? Why or why not?

Yes, the Department has considered extending the OTF project to measure salmon run entry into UCI after July 31 for both sockeye and coho salmon, but current budget realities do not allow extensions of the OTF.

**A phrase I used when working for the ADF&G, Sport Fish Access Program went:
“Fishing is fun, but only if you can get to the water!”**

4a. What projects and actions are being pursued by the department to improve angler access to the Mat-Su’s rivers and lakes?

A partial list of Access projects in the Mat-Su include:

- Finger Lake Boat Launch Renovation– Remove gravel deposits, extend the length of the existing boat ramp, and embed the lower end of ramp into the lake.
- Echo Lake – Construct a new Echo Lake turnout as part of the Glenn Highway Reconstruction.
- Sheep Creek Streambank Rehabilitation – Cooperative project with the RTS Streambank Rehabilitation Program to rehabilitate ~500 feet of riparian habitat along the shoreline of Sheep Creek.
- Spruce Beetle Hazard Tree Removal – Collaborative efforts from ADFG and the Division of Forestry to remove infected spruce trees from Sheep Creek, Caswell Creek, Susitna Landing, and Little Susitna Public Use Facility and its river accessible campsites.

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- Little Susitna Public Use Facility (LSPUF) - The proposed project would renovate/replace all 12 of the Elevated Light Penetrating (ELP) walkways.
- Sheep Creek Stair/Trail Renovation & Vault Latrine Replacement - Cooperative project with DPOR with ADFG for the removal/replacement of the existing vault latrine (old and in a state of disrepair), and renovation of existing angler access trail, retaining walls, and fence.
- Additional Dirt Work - We have a running list of sites that need trail, road, and parking lot maintenance. This list is prioritized by management by angler use.

4b. What about maintenance of existing facilities? Why has the boat launch area of Susitna Landing not been dredged for nearly four years, resulting in a silted in launch area only accessible to smaller and shallower draft boats?

- Site Visits and Inspections - Currently there are 141 angler access sites on Mat-Su Valley rivers and lakes located on and off the road system. Our goal is to visit all the road system access sites twice annually for site inspections and maintenance each spring and fall. Maintenance includes groundskeeping, refuse removal, sign repair and replacement, trail and parking lot maintenance as needed.
- Maintenance of ADFG Owned Sites - Bonnie Lake, Caswell Creek, Little Susitna Public Use Facility, Sheep Creek, Susitna Landing annual maintenance included janitorial, groundskeeping, porta potty rental, CXT vault latrine pump out, refuse removal, landscaping, parking lot grading, kiosk updates and sign repair or replacement.
- Susitna Landing - Susitna Landing Boat Launch and Campground is a Department of Fish and Game owned facility that is managed by a private concessionaire. Maintenance of the facility included annual dredging of the boat launch as stated in the contract. The concessionaire for the past 2 years was in breach of the contract in this respect. The department contracted a third party to dredge the launch October 14, 2020 and is in the process of contracting a new concessionaire.

5. a. What is our King salmon Season going to look like next year?

The Deshka forecast is being drafted, and next year's management strategy will be determined when the forecast is finalized. Our expectation right now is that the 2021 run will be low, similar to the last few years. Given that the Deshka and Little Susitna goals were achieved last season with C&R fisheries in place, C&R fisheries may be a conservative way to start the 2021 season, using the weir programs to adjust from

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there. But again, the Deshka forecast is still being drafted and any actions will be based on that.

Preseason actions for other stocks of the Susitna (Eastside, Talkeetna, Yentna) remain under review at this time.

6. a. How will ADFG continue to manage sockeye returns to Larson Creek?

The department will continue to monitor counts and assess run strength on a daily basis, managing the sport fishery to attain the escapement goal. With a sport fishery harvest rate of about 10%, actions taken to adjust the sport fishery inseason have a relatively small influence over the final escapement outcome. On low run years, closure of the sport fishery can help attain the escapement goal when projecting close to the low end of the goal range. On high abundance years, inseason liberalizations may have little effect in slowing the daily count but do provide opportunity for sport anglers to harvest more fish.

Commercial fisheries in the Northern District will continue to be allowed as per the *Northern District Salmon Management Plan* (NDSMP) stipulations for JCL sockeye salmon stocks, with gear restrictions from July 20 to August 6. The timing and scope of these net restrictions are informed and targeted with genetic stock composition data of the Northern District harvests, that shows when and where JCL stocks are harvested. The level of gear restrictions used in the Northern District (ND) could be changed if escapement goals of sockeye salmon in the majority of the indicator runs (Judd, Larson, and Fish Creek) are consistently not met, or changes to stock compositions are seen in harvests.

7a. There are several objectives to commercial management of salmon stocks within the Northern District of Upper Cook inlet. *Please prioritize the following eight objectives so the public can better understand ADF&G management actions, using a #1 for the highest priority. Feel free to provide insight as to Department priorities and direction provided by the Board of Fisheries at the 2020 Upper Cook Inlet Board of Fisheries meeting.*

- A. Attainment of each coho salmon escapement range minimum level.
- B. Attainment of each Northern sockeye salmon escapement range minimum level
- C. Attainment of the mid-point of each Department established Northern Cook Inlet sockeye and coho salmon escapement range

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- D. Staying within the upper bound of one or more Northern Cook Inlet sockeye salmon escapement range(s)
- E. Providing shared sockeye, chum, and pink salmon harvest opportunities in Northern Cook Inlet waters / drainages for commercial and inriver users,
- F. Minimizing Northern District commercial coho harvest during July.
- G. Providing reasonable coho salmon sport and guided sport harvest opportunities at Little Susitna River, Deshka River, Fish Creek, Jim Creek
- H. Maximizing Northern District commercial salmon harvests during the first week of August.

The department's priority in managing salmon fisheries is to achieve established escapement objectives. A, B, C, and D above all relate to achievement of escapement objectives and are treated equally. In conjunction with managing for established escapement objectives the department provides opportunity to harvest surplus salmon in accordance with Alaska Board of Fisheries management plans. Items E, F, and G relate to harvest opportunity that falls under management plan direction and are also treated equally. There is no management plan direction related to item H and it is not a priority.

7b. During 4 of the past 5 years (including 2020) the conservative sport and guided sport coho salmon fishery on the Little Susitna River has had to be restricted and/or closed in efforts to attain the minimum coho salmon escapement level. During the past two years the Larson Creek sport sockeye salmon fishery had to be closed inseason to attain the minimum sockeye salmon escapement level, and despite those sport closures the Larson Creek minimum sockeye salmon escapement level was still not attained in either 2019 or 2020. How does the Department plan to adjust commercial salmon management in Northern Cook Inlet to address these ongoing issues?

Sockeye salmon commercial fisheries in the Northern District will continue to be managed with net restrictions from July 20 and to August 6 as per the NDSMP. The level of gear restrictions used in the ND could be changed if escapement goals of sockeye salmon in most of the indicator runs are consistently not met.

Coho salmon commercial fisheries in the Northern District will continue to be restricted as per the NDSMP with stipulations that prohibit extra fishing time if coho salmon are expected to be the primary species in the harvest, and additional fishing time may not be allowed based on coho salmon abundance. Additionally, after August 15 fishing time in the ND may not be allowed beyond the regulatory fishing periods of Monday and Thursday each week.

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Finally, The *Northern District Salmon Management Plan* says in part; “The department shall also manage the chum, pink, and sockeye salmon stocks to minimize the harvest of Northern District coho salmon, to provide sport and guided sport fisherman a reasonable opportunity to harvest these salmon resources over the entire run, as measure by the frequency of inriver restrictions, or as specified in this section and other regulations”. If coho salmon abundance, measured by weir counts, in the Deshka and Little Susitna rivers, and Fish Creek are failing to meet established goals the area and time of Northern District set net periods will be restricted, as it has been in past years, targeted at the set net areas that harvest the most coho salmon bound for those rivers. In recent years this has been restrictions to the area east of Susitna River to lower the harvest pressure on Little Susitna River coho salmon. These restrictions would be coordinated with actions to the sport fisheries.

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