

RC 023

Technical Report No. 13-37

**THE CAPE IGVAK SALMON MANAGEMENT PLAN--- A QUESTION OF ACCURATE
SOCKEYE SALMON CATCH REPORTING**

**Prepared for: United Chignik Salmon Fishermen
CHIGNIK, ALASKA**

by

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INTRODUCTION

Since the Cape Igvak Salmon Management Plan was first implemented in 1979, Chignik fishermen have suspected that some underreporting of the sockeye salmon (*Oncorhynchus nerka*) catch may be happening. Their concern is grounded, in part, by reports from Kodiak purse-seine crew members that Igvak catches are at times assigned to fishing areas mainly on the west side of Kodiak Island. At least prior to 1979, particularly in the late 1960's and early 70's, some Igvak boats routinely delivered to Westside Kodiak tenders in the Karluk, Ayakulik, and Alitak areas and reported their catch to the nearest location (John Jones, 12/19/13, pers. comm.). At the time the impetus was to keep fishing successful at Igvak rather quiet. Since the Igvak fishery is now managed under an allocation, an incentive likely exists for some level of underreporting in the Cape Igvak fishery to be occurring today (ADF&G Jeff Wadle, 12/5/13, pers. comm.).

Chignik fishermen believe that underreporting of Igvak sockeye catches likely occurs when short openings (48-72 h.) occur and when alternate fisheries are taking place on Kodiak's Westside. Because of Igvak remoteness, they recognize that the Department does not track individual boat participations and relies on fish ticket tabulations to follow the Igvak sockeye allocation.

There are some who take a laissez-faire attitude and hold that there is no need to monitor the fishery beyond counting fish tickets because any misreporting that occurs would have to be "insignificant." Interestingly, there is no evidence to validate the assertion. It is general knowledge that fish tickets issued on a mobile fleet are not always reliable in identifying harvest locations. Most fishermen primarily focus on total species poundage and price at the time of sale. Further, the assigned fishing area on a fish ticket is not uncommonly the tender location, and as to species composition as a means for identifying a harvest area, the utility of such is at best questionable given the volume of fish tickets issued and the absence of any known standard(s) by which to challenge a salmon fish ticket record based on non-sockeye catch numbers or species composition. Additionally, crossing the Shelikof Strait at the end of the last fishing day at Igvak to engage in additional fishing on Kodiak's Westside is typically not a problem (Jason Alexander, 12/22/13, pers. comm.). Further, with the knowledge that 90% of Igvak sockeye tally against the 15% Chignik allocation, the impetus to accurately report may not always prevail.

While the Department acknowledges that an incentive exists for underreporting to occur under the Cape Igvak Salmon Plan (5 AAC 18.360), there is no empirical evidence of such but neither is there any finding that misreporting does take place (Jeff Wadley (12/5/13); Sgt. P. Fussey (12/10/13) pers. comm.).

The Alaska Board of Fisheries (BOF) will at its Kodiak meeting in early January 2014 be considering Proposal #94 calling for fishery registration and an exclusive landing requirement under the Cape Igvak Salmon Management Plan. The intent is to improve harvest accountability.

The focus of this report is to determine whether misreporting may be occurring in the Kodiak Cape Igvak Section fishery based on the Department's fish ticket records for the last five seasons (2009-13) and through consultation with selected Department staff and others. The report will offer draft regulatory language that the BOF may wish to consider to address the concern.

OBJECTIVES

1. Identify whether reasonable likelihood exists for some underreporting of the sockeye salmon harvest in the Cape Igvak Section pre July 26th fishery.
2. Document procedures, if any, used by ADF&G and the Department of Public Safety to ensure accurate catch reporting in the Cape Igvak fishery.
3. Offer BOF draft regulatory language that, if adopted, would better ensure that sockeye salmon harvested under the Cape Igvak Salmon Management Plan are correctly assigned.

METHODS

Five years (2009-13) of summarized daily fish ticket records were obtained from the Department's Kodiak office electronically denoting the June through July 25th reported sockeye catch numbers along with the corresponding number of deliveries and permits (or boats) fished in the Cape Igvak Section fishery (data record: 11/20/13). The same catch and effort data were secured for the Alinchak Bay Section immediately north of the Cape Igvak Section in the Mainland District (Figure 1). Equivalent data were also obtained for selected Kodiak Westside areas to evaluate whether concurrent openings with Igvak were occurring and whether some boats might leave the Cape Igvak Section fishery during short Igvak openings (48-72-h) for other areas when relatively high harvest success was happening.

The June fish ticket reports from the Igvak fishery were evaluated independently from the post-June catch records. The rationale was that as the July 25th date approached, the incentive to misreport could wane as the targeted allocation became rather identifiable from harvest patterns in the Chignik Management Area (CMA) and Cape Igvak Section.

In doing the review, it was assumed that there would be little incentive to misreport relatively low harvest numbers, and boats would be less inclined to leave a 48 or 72-h fishery unless the level of sockeye harvest was averaging less than about 750 fish per boat per day. The 750 was based on Chignik information wherein the boats fishing in the outer Chignik districts must catch about 200 sockeye salmon/day to break even on fuel, insurance, groceries, and miscellaneous alone (E. Carlson, 11/22/13, pers. comm.). Since Kodiak boats are larger and therefore more costly to operate and given the need to substantially profit, a 750 sockeye/day threshold was considered sufficient to be confident that effort (boat numbers) should either increase or remain relatively static in a 72-h or less fishing period unless weather and/or some degree of misreporting were in play. The likelihood that any additional Kodiak boats would enter an ongoing 48-h or 72-h Cape Igvak fishery was not considered other than recognizing that if such occurred, it would work toward a no misreporting finding based on daily landing number changes. The number of boats making deliveries on the first day of a fishing period was compared against the numbers on the last day for those 48-h and 72-h fisheries with daily 750+ sockeye salmon CPUEs.

During the course of this investigation it was suggested by the Department that a couple of particular Westside Kodiak fisheries may have diverted boats away from a 48-h Igvak opening in mid-June 2013. To determine the

likelihood, daily fish ticket records were examined from the Inner and Outer Karluk sections and similarly from the Inner and Outer Ayakulik sections focusing on sockeye CPUE and boat numbers.

The Kodiak Department of Public Safety (DPS) and ADF&G staff were consulted in late November and early December 2013 to determine whether the Cape Igvak Section fishery had been audited for underreporting of salmon catches at any time.

RESULTS

During Cape Igvak June 48-h and 72-h salmon openings, mostly there were fewer boats making deliveries on the last day of an opener than on the first day (Table 1, Figure 2). An average of 88% of the June fishing periods had fewer boats making landings on the last day fished for the 5-years 2009 through 2013 as compared to 13% where the number of boats making landings was equal to or more than that on the first day fished. In July in those years the opposite transpired with an average of 88% of the openers showing equal or more boats fishing on the last day than on the first day of fishing. Only 13% of the July openers had fewer boats delivering on the last day than on the first day, the opposite of the June finding.

Irrespective of the amount of hours open to fishing in the Cape Igvak Section, there was still a preponderance of fewer boats making landings on the last day of the June fishing periods than on the first day of those periods (Table 2, Figure 3). The average was 79% as compared to 21% where boat numbers on the last day were equal to or exceeding the first day for the 5-year period 2009-2013. In July the numbers were almost reversed. About 38% of the openings had a lesser number of boats making deliveries on the last day than on the first day fished. And in 63% of the July openings, there were an equal or greater number of boats making deliveries on the first day than on the last day.

The trend wherein fewer boats made landings on the last day of the June Igvak openings persisted even when the average boat CPUE was greater than 750 sockeye salmon (Table 4 and Appendix A). Three of the four June openings that met this criterion had fewer boats making deliveries on the second day than on the first day for the five years, 2009-2013. However, during the July 9-25 period, boat numbers on the second day of 48-h fisheries averaged 30% more than the first 24-h of fishing (n=2).

In the Cape Igvak Section in 2013, an 11% decrease in boat numbers occurred on the second day of a 48-h fishery that began on June 17. In the first 24-h, 64 boats made landings, while on the second day there was a 7 boat decrease (Table 4). The first day's CPUE was 2,055 sockeye salmon and on the second, 1,257 sockeye salmon. ADF&G management suggested that a Karluk opening may have attracted some of the Igvak boats that fished on the first day (June 16; ADF&G J. Jackson, 11/26/13, pers. comm.). Evidence indicates otherwise (Appendix B). Boat numbers remained relatively static in the Karluk fishery from June 16 through the 19th. Only four boats fished the Inner and Outer Karluk sections on June 16th (CPUE 795 sockeye). On June 17th less than three boats fished, and on June 18 and 19 a total of three boats fished the Karluk area with respective daily CPUE's of 247 and 202 sockeye salmon. An alternative explanation for the 7-boat decrease on the second day of the 48-h June 16-17 Igvak fishery was that boats left for the Outer Ayakulik Section fishery. Like the Karluk data, there is no evidence of this. In the Outer Ayakulik Section on June 17 coinciding with the Igvak opening 11 boats made 11 landings (CPUE 833). On the 18th, the second day of the 48-h Igvak fishery, three boats made three landings in the Outer Ayakulik. On the 19th, one day after the 48-h Igvak fishery closed, 11 boats were making deliveries in the Outer Ayakulik Section (CPUE 271).

The Alinchak Bay Section, lying immediately north of the Cape Igvak Section is not part of the Cape Igvak Salmon Management Plan and does not have sockeye catch allocation. Beyond that, the area is not comparable to the Cape Igvak Section in as much as it was not open to commercial fishing in June in the five years 2009 – 2013. Of the few July openings in the Alinchak Bay Section, there was a higher frequency of boats making landings on the last day fished than on the first day of an opening (60% vs. 40%; Appendix C).

The Department of Public Safety (DPS) staff from Kodiak has monitored the Cape Igvak fishery for gear, licensing, and fishing violations relative to openings and closures (Ofc. Loring, (12/2/13); Sgt. Fussey, (12/10/13), pers. comm.). However, they have not evaluated whether underreporting of salmon harvest has occurred under the Cape Igvak Salmon Management Plan. Further, DPS does not evaluate fish ticket records absent of a specific case.

ADF&G reports that they have not audited the Cape Igvak salmon fishery for catch reporting violations at any time over the last 30+ years (J. Wadle, 12/5/13, pers. comm.). A suggestion was made that species composition differences between Igvak and some of the Kodiak Westside and other areas would flag underreporting if it were occurring. Species composition differences are apparent between fishing areas (Appendix D). However, there is no analytical program to audit fish tickets for species aberrations, nor does it appear that there is always a comprehensive review of individual fish tickets due to the sheer volume (10,000+) of tickets produced in the Kodiak Management Area (KMA). In the Igvak 2009-2013 fish ticket database some catches were assigned to dates when the Igvak fishery was not open. Some could be attributed to split fish tickets where a landing contained fish harvested from multiple catch areas on different days (ADF&G J. Wadle, 12/12/13, pers. comm.).

DISCUSSION

Five years of Cape Igvak Section fish ticket records were examined (2009-13). The results overwhelmingly illustrated that the number of boats making deliveries in June decreased on the last fishing day predominately, whether the fishery was open for 48-h or more (Figures 2-3). After July 7th, the pattern shifted with more or an equal number of boats delivering on the last day than on the first day of an opener.

During short (i.e. 48-h) fisheries openings, it could be expected that some boats might defer delivering on the first day fished due to RSW and other. There was no accounting or adjustment made for this probability which would bias the results to underestimate the initial effort levels on the first day. Conversely, it is unknown how many boats would have fished on the first day of a 48-h fishery but not on the second day. Because of the absence of any major adjacent fishing areas and the distance to the Kodiak's Westside (45-70 miles), it would seem reasonable that few boats would elect to leave a 48-h Igvak fishery mid-stream if catches and fishing conditions were anywhere near "fair or better."

While the fish ticket review did not provide a numerical estimate of underreporting, the results clearly indicate that there is a substantial likelihood that salmon harvested under the Cape Igvak Salmon Management Plan are being underreported.

The importance of accurate accounting of sockeye salmon harvested under the Cape Igvak Salmon Management Plan is clear. The Cape Igvak fishery is linked to the Chignik fishery and the South Eastern District Mainland fishery. All three work under a joint allocation scheme, and therefore it is important that no one

area or fishery take the liberty of not completely reporting harvest numbers. There is also importance in making certain that stock assignments are as accurate and precise as possible for the purpose of run reconstruction which serves for forecasting and spawner–recruit analysis. Other advantages exist too. Tightening catch reporting standards in the Cape Igvak fishery would be in line with the Sustainable Salmon Fisheries Policy for the State of Alaska: 5 AAC 39.222, Section 3 *salmon management (i)* “*management should incorporate procedures to assure effective monitoring, compliance, control, and enforcement.*”

In accordance, the Cape Igvak Salmon Management Plan warrants amending to incorporate a landing requirement on salmon harvested in the Cape Igvak Section. Expectantly there may be times when tender service may not always be available or a Kodiak delivery is preferred, and therefore a regulation inclusion allowing for alternative delivery locations would be sensible. AS 16.05.671 *Transportation and sale of certain fish by an agent of the fisherman who caught the fish* should adequately allow for this as it would permit an Igvak fisherman to obtain blank fish tickets to declare salmon catches being transported outside the Cape Igvak Section.

For BOF consideration, draft regulatory language for an Igvak landing requirement is offered in Appendix E (page 12).

DISCLOSURE

The fish ticket data for this report was provided by the Kodiak office of the Alaska Department of Fish and Game, Division of Commercial Fisheries at the request of the Chignik Regional Aquaculture Association (CRAA). As indicated on the title page, CRAA did not author the report. This report was completed for United Chignik Salmon Fishermen (UCSF) pro bono for the January 2014 BOF meeting in Kodiak, AK.

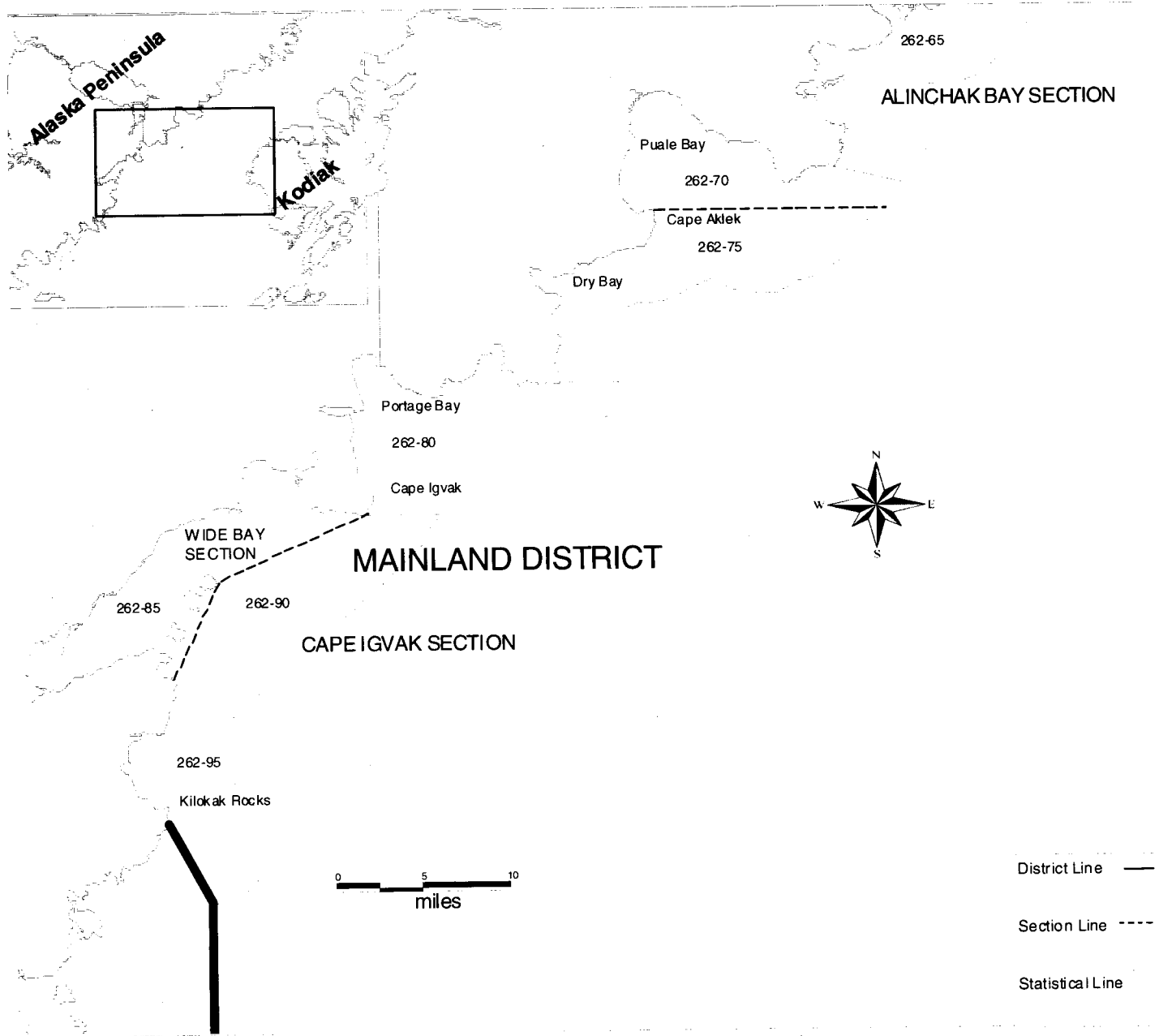


Figure 1. Map identifying the Cape Igvak Section and the southern portion of the Alinchak Bay Section of the Mainland District of the Kodiak Management District (Courtesy of J. Waddle, ADF&G).

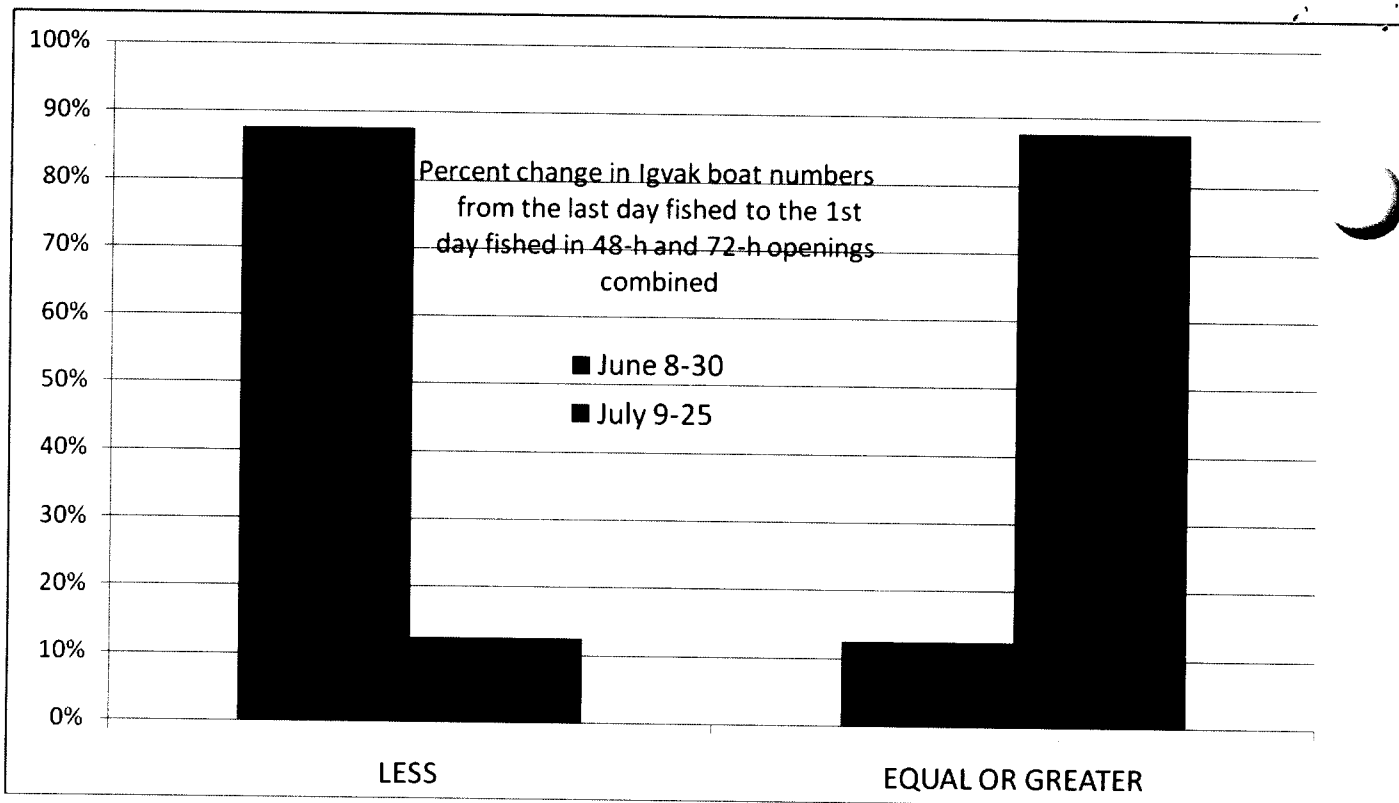


Figure 2. Average percent frequency of number of boats making deliveries where on the last day the was less than those on the first fishing day for 48-h and 72-h periods as compared to those the boat numbers were equal to or greater than, June 8-30 and July 9-25, Cape Igvak Section, 2009-2013.

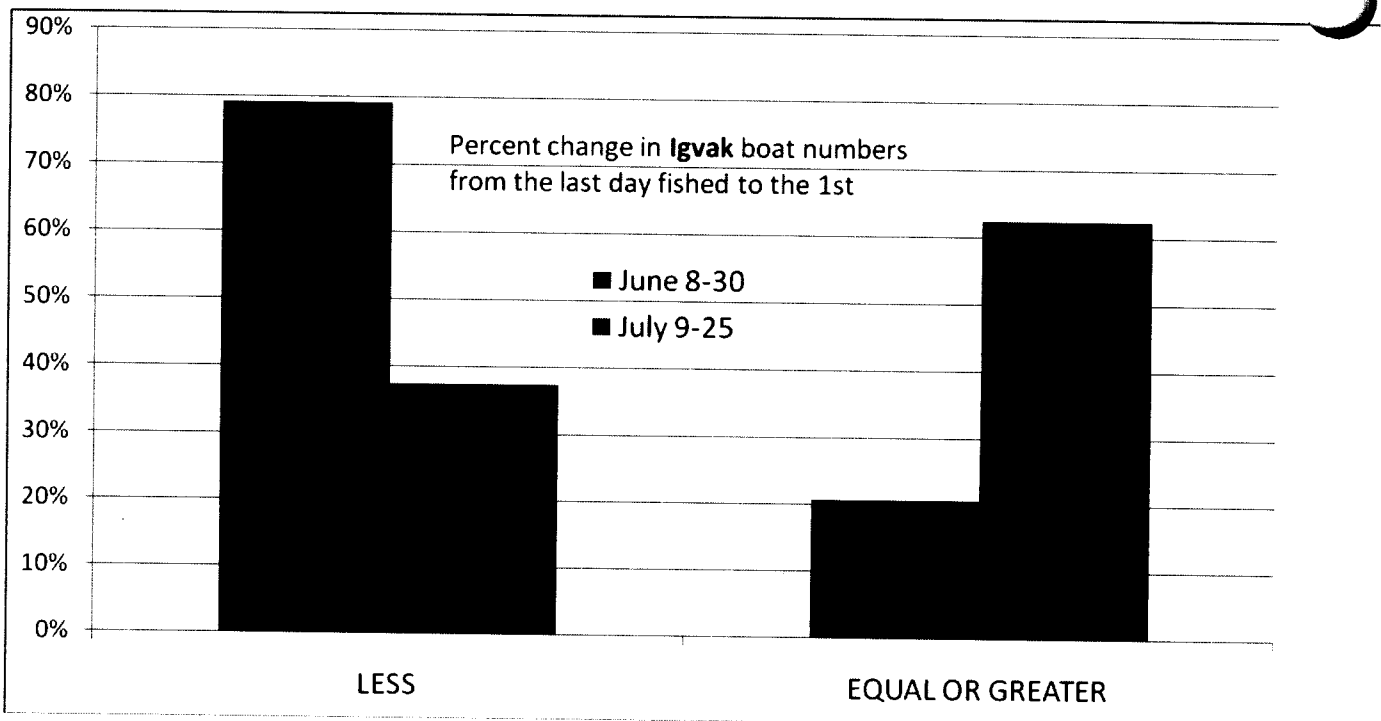


Figure 3. Average percent frequency of number of boats making deliveries where the last day numbers were less than on the first day fished for all fishing periods as compared to those where the boat numbers were equal or greater than, by period, Cape Igvak Section, 2009-2013.

Table 1. Average percent frequency of boats making landings where the last day numbers were less than the first day for 48-h and 72-h openings as compared to those where they were equal to or greater than, Cape Igvak Section, by year, 2009-2013.

PERIOD	YEAR										2009-2013	
	2009		2010		2011		2012		2013		AVERAGES	
	= or >	Less	= or >	Less	= or >	Less	= or >	Less	= or >	Less	= or >	Less
June 8-30	No fishery		0%	100%	0%	100%	0%	100%	50%	50%	13%	88%
July 1-8	No fishery		No fishery		No fishery		No fishery		No fishery		NO Fishery	
July 9-25	100%	0%	50%	50%	No fishery		100%	0%	100%	0%	88%	13%

Source: ADF&G Fish Ticket Data Run, Kodiak, 11/20/13.

Table 2. Average percent frequency of boats making landings where the last day numbers were less than the first day for all openings as compared to those where they were equal to or greater than, Cape Igvak Section, by year, 2009-2013.

PERIOD	YEAR										2009-2013	
	2009		2010		2011		2012		2013		AVERAGES	
	= or >	Less	= or >	Less	= or >	Less	= or >	Less	= or >	Less	= or >	Less
June 8-30	No fishery		0%	100%	33%	67%	0%	100%	50%	50%	21%	79%
July 1-8	No fishery		No fishery		No fishery		No fishery		No fishery		NO Fishery	
July 9-25	50%	50%	50%	50%	No fishery		100%	0%	50%	50%	63%	38%

Source: ADF&G Fish Ticket Data Run, Kodiak, 11/20/13.

Table 3. A comparison of the number of boats making landings on the first and last fishing day of an opening by period irrespective of the duration of each opening, Cape Igvak Section, 2009-2013.

PERIOD	YEAR														
	2009			2010			2011			2012			2013		
	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)
June 8-30	No fishery			37	32	-5	33	31	-2	32	27	-5	34	34	0
				30	29	-1	37	40	3	41	21	-20	64	57	-7
July 1-8	No fishery			No fishery			No fishery			No fishery			No fishery		
July 9-25	20	15	-5	22	17	-5	No fishery			8	15	7	15	21	6
	5	6	1	3	7	4				12	14	2	21	6	-15

Source: ADF&G Fish Ticket Data Run, Kodiak, 11/20/13.

Table 4. A comparison of the numbers of boats making landings in the Cape Igvak Section where an opening was 48-hours and the daily sockeye harvest was 750 or more sockeye salmon, 2009-2013.

PERIOD	YEAR														
	2009			2010			2011			2012			2013		
	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)	1st. Day	Last Day	Diff. (last-1st day)
June 8-30	No fishery			37	32	-5	37	40	3				64	57	-7
				30	29	-1									
July 1-8	No fishery			No fishery			No fishery			No fishery			No fishery		
July 9-25	5	6	1				No fishery						15	21	6

Source: ADF&G Fish Ticket Data Run, Kodiak, 11/20/13.