

MEMORANDUM

State Of Alaska Department of Fish and Game

TO: Kevin Duffy
Deputy Commissioner
Juneau

DATE: September 21, 2001

THRU: Rob Bentz
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SUBJECT: Initial evaluation of the Alaska
Department of Fish and Game Saltwater
Sportfishing Charter Vessel Logbook
Program 1998-2000

In February 1998 the Alaska Board of Fisheries (BOF) adopted regulations requiring logbooks for saltwater charter vessels statewide. The BOF took this action to meet several information needs including: 1) inseason estimates of Southeast sport charter harvest of chinook salmon, 2) individual vessel-based sport charter information, 3) effort and harvest information beyond that obtained through the angler-based statewide sport fish postal survey and on-site creel surveys, 4) North Pacific Fishery Management Council (Council) needs in relation to allocation of Pacific halibut, and 5) BOF needs in deliberation of regulatory and local management plan proposals.

This memo summarizes the results of our initial evaluation of the logbook program in regards to the reliability of reported harvest of Pacific halibut taken by guided sport anglers in IPHC areas 2C and 3A for the first three years of the program (1998-2000). The final results of our evaluation will eventually be published in one of our Division's peer reviewed publications (most likely the Fishery Manuscript series). The results presented in this memo are final (i.e., not expected to change with further analyses). However, the final results will include the results some additional analyses we plan on conducting over the next few months. We will provide the results of some of these additional analyses prior to the October meeting of the Council.

Feel free to call me and/or Rob regarding any questions you might have in regards to the results summarized in this memorandum.

Attachments

cc (via email): Bob Clark
Rocky Holmes
Dave Bernard
Doug Vincent-Lang
Kelly Hepler

INTRODUCTION

Each harvest assessment program has its strengths and limitations. Creel surveys provide valuable first hand observations of the fishery but they are very expensive and lack full geographical coverage. Port sampling (catch sampling) provides biological information and important fishery statistics including areas of landings and fishing effort, but is expensive and does little to help assess total area harvest. The Department's charter logbook program was initiated in 1998 and as with any new program, it needs to be "ground truthed" to evaluate the accuracy of the data. The Statewide Postal Survey (SWHS), a postseason survey, is a long time series data set that provides excellent geographical coverage, is reasonably accurate and cost effective but the estimates of harvest are not available for up to one year after the fishing season in question.

This document provides a summary of the results of our initial evaluation ("ground truthing") of the logbook program with regards to the reliability of reported harvest of Pacific halibut taken by guided sport anglers in International Pacific Halibut Commission (IPHC) areas 2C and 3A for the first three years of the logbook program (1998-2000).

OBJECTIVES

1. The primary objective was to compare and contrast the harvest of Pacific halibut as estimated by the Statewide Harvest Survey with the reported harvest from the logbook program for 1998-2000.
2. A secondary objective was to compare the harvest of other species (i.e., chinook and coho salmon, rockfish, and lingcod).
3. Finally, logbook data was compared with on-site sampling projects (i.e., the groundfish catch sampling project in Southcentral Alaska, and the creel/catch sampling projects in Southeast Alaska).

SUMMARY OF RESULTS

Comparison with SWHS Estimates-Pacific halibut Harvests

Harvest of Pacific halibut as reported in the logbook program are generally larger (and in some cases) much larger than the estimated harvest in IPHC area 2C as measured by the SWHS (Figure 1). Most of the discrepancy for Pacific halibut in 2C is related to the discrepancy between estimates for SWHS Area B (Prince of Wales Island) and Area D (Sitka). Differences for Pacific halibut are minimal for the other SWHS areas in 2C (i.e., A, C, D-G). The discrepancy appears to have an increasing trend over the years of comparison (i.e., greater in 2000 than 1999 and greater than 1998).

Similarly for IPHC area 3A (SWHS areas H-Q) the Pacific halibut harvest reported in logbooks is substantially greater than the estimated charter/guided harvest from the SWHS, again with an increasing trend in the size of the discrepancy. Nearly all of the discrepancy for IPHC area 3A is due to the discrepancy for SWHS Area P (saltwater surrounding Kenai Peninsula).

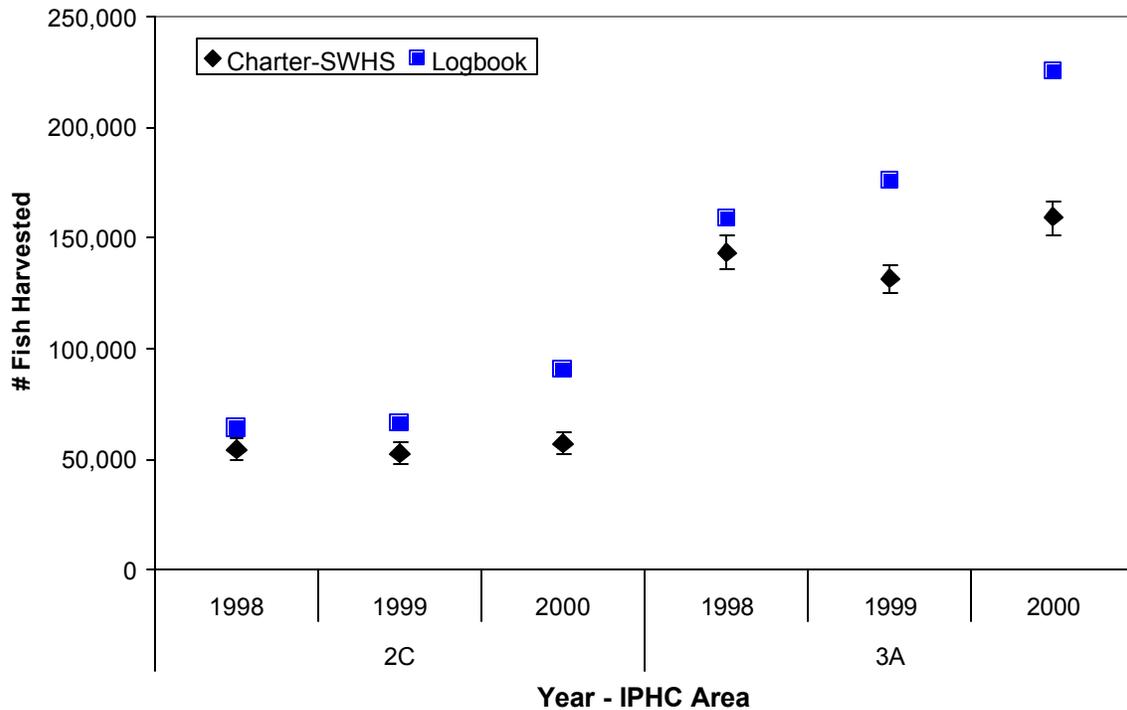


Figure 1.-Comparison of Statewide Annual Mail Survey estimates versus Saltwater Charter Logbook Reported Harvest of Pacific halibut by chartered/guided anglers for the International Pacific Halibut Commission (IPHC) Areas 2C and 3A, 1998-2000.

Comparison with SWHS Estimates-Other Species Harvests

Harvest of chinook and coho salmon, and rockfish as reported in the logbook program are generally somewhat larger than the estimated harvest in IPHC area 2C (Figures 2-5). The logbook reported harvest for lingcod matches with the SWHS estimates for IPHC area 2C (Figure 6).

The reported harvest for each of these species generally matches quite closely with the estimates from the SWHS for IPHC area 3A (Figures 2-6). Accordingly, the discrepancy noted above for Pacific halibut for IPHC area 3A (i.e., higher reported harvest for the logbook program in comparison to the SWHS estimate, see Figure 1) is not repeated for these other species.

Comparison with On-site Creel and Catch Sampling Programs.

Comparison of individual records from on-site creel and catch sampling projects with matching records from the logbook program were made that essentially involves a one-to-one comparison of vessel-trip information. The comparison was conducted to evaluate (1) the degree of compliance with the program, i.e., do charter operators complete a logbook report for each active chartered/guided sport fishing trip; and (2) measure the degree of agreement or disagreement between reported harvests by species as well as effort statistics. Note that non-matching may be due to true non-reporting or due to inefficient matching (due for example to incorrectly recorded dates of activity). Accordingly the non-matching rates reported here are assumed to be estimates of the maximum non-reporting rate.

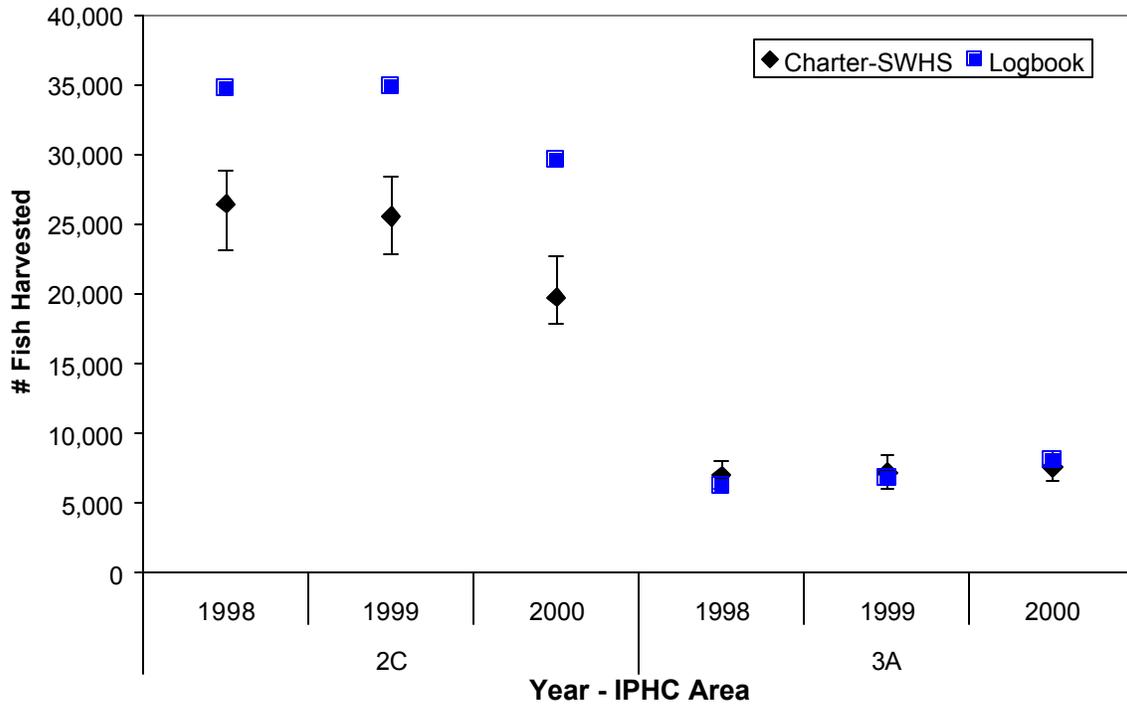


Figure 2.-Comparison of Statewide Annual Mail Survey estimates versus Saltwater Charter Logbook Reported Harvest of chinook salmon by chartered/guided anglers for the International Pacific Halibut Commission (IPHC) Areas 2C and 3A, 1998-2000.

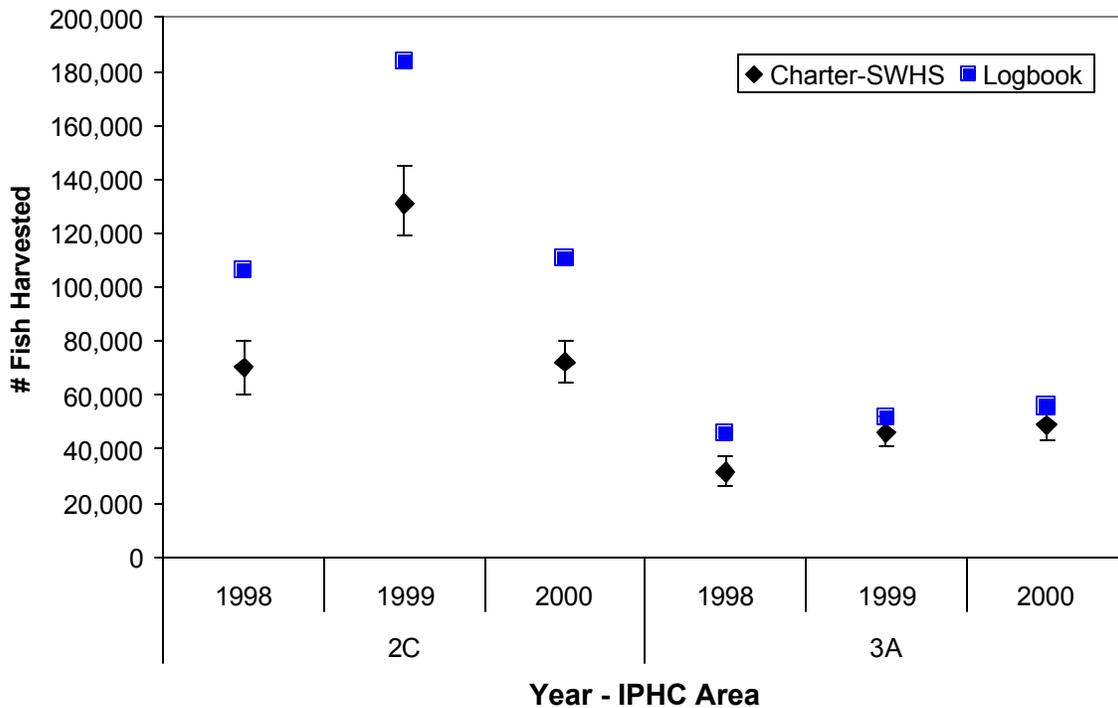


Figure 3.-Comparison of Statewide Annual Mail Survey estimates versus Saltwater Charter Logbook Reported Harvest of coho salmon by chartered/guided anglers for the International Pacific Halibut Commission (IPHC) Areas 2C and 3A, 1998-2000.

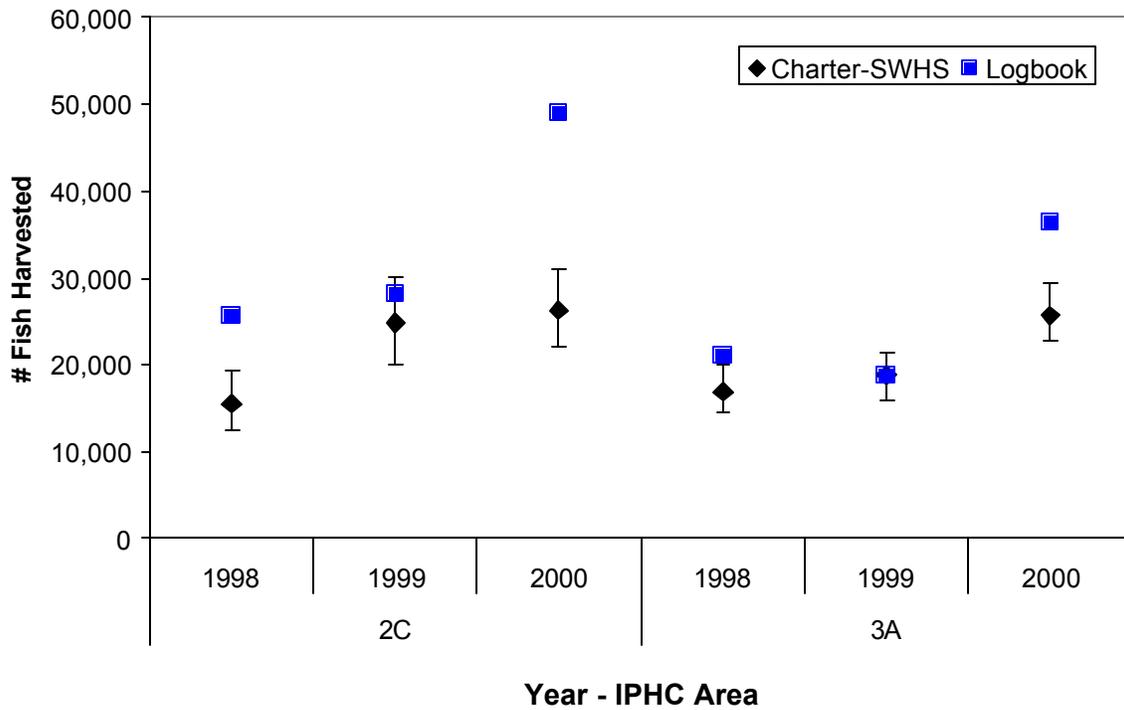


Figure 5.-Comparison of Statewide Annual Mail Survey estimates versus Saltwater Charter Logbook Reported Harvest of rockfish by chartered/guided anglers for the International Pacific Halibut Commission (IPHC) Areas 2C and 3A, 1998-2000.

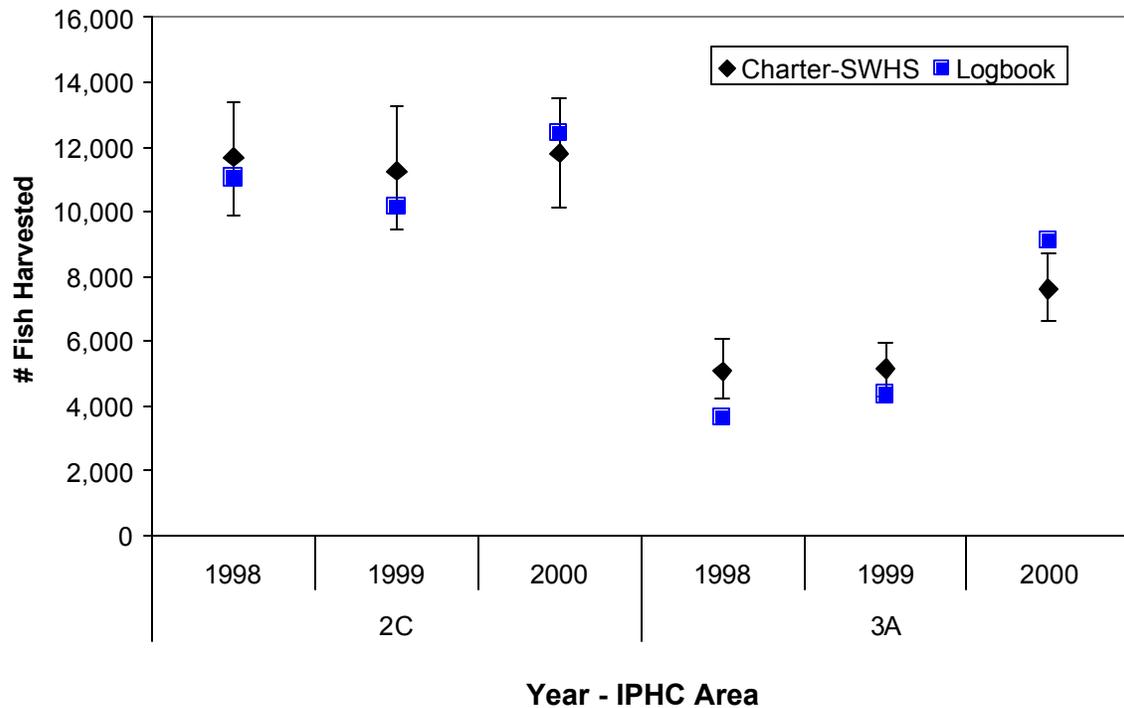


Figure 6.-Comparison of Statewide Annual Mail Survey estimates versus Saltwater Charter Logbook Reported Harvest of lingcod by chartered/guided anglers for the International Pacific Halibut Commission (IPHC) Areas 2C and 3A, 1998-2000.

Comparisons were made to the information collected by the ongoing creel surveys conducted for the Juneau, Ketchikan, and Sitka saltwater sport fisheries, as well as the catch sampling projects conducted in Craig/Klawock, Petersburg, Wrangell, and Yakutat. Both the creel and the catch sampling programs are designed primarily to estimate parameters associated with the chinook salmon fishery. Comparisons were also made to the information collected by the ongoing groundfish catch sampling conducted in Southcentral Alaska.

Non-matching/Non-reporting Rates. The matching rate between logbook and onsite interview data in Southeast Alaska was incomplete though relatively high, increasing from 83% in 1998 to 87% in 1999 to 92% in 2000 (Table 1). A portion of the records that were classified as “non-matching” were due to trips for which the charter operator recorded being “inactive” for the day in the logbooks, yet the creel survey indicated that an active trip occurred: 4% of trips in 1998 and 1999, and 2.4% in 2000,.

The matching rate in Southcentral Alaska was similar to those observed in Southeast Alaska: 84% in 1998, 80% in 1999, and 93% in 2000 (Table 1). Again a number of records that the charter operator recorded as being “inactive” for the day matched against interview data that indicated that the vessel was active (ranging from 2.5% to 7.6%).

Table 1.-Logbook non-matching rates in comparison with on-site creel and catch sampling programs. Comparisons made on a one-to-one basis matching individual vessel-trip records. Non-matching may be due to true non-reporting or due to inefficient matching (due for example incorrectly recorded dates of activity).

Parameter	Year	Compared to SE Alaska Creel and catch Sampling Projects	Compared to SC Alaska Groundfish Catch Sampling Project
Records in logbook database	1998	100,437	
	1999	111,758	
	2000	126,986	
Records in interview database	1998	1,934	1,100
	1999	2,327	1,409
	2000	2,668	1,601
Estimated Matching rate ^a	1998	83%	84%
	1999	87%	80%
	2000	92%	93%
% of interviews classified as "inactive" ^b	1998	4.0%	3.4%
	1999	4.0%	7.6%
	2000	2.4%	2.5%

^a Matching rate does not include matching records in which the charter operator reported an inactive day.

^b There were several matching records where there was interview data but the logbook database classified the vessel as "inactive" for that day.

Pacific halibut Harvest Comparison. The degree of agreement in reported harvest of Pacific halibut in Southeast Alaska indicated that 85-87% of records agreed exactly and 90-91% were

within one fish. Comparatively, the reported harvest in Southcentral Alaska indicated that substantially fewer records matched exactly (Table 2), with some indication that agreement improved from 1998 to 2000.

Table 2.-Agreement of logbook data with onsite interview data for Pacific halibut harvest in Southcentral Alaska.

Maximum Error (number of fish)	Halibut Harvested (Year)		
	1998	1999	2000
0	47%	54%	66%
± 1	58%	62%	74%
± 2	76%	73%	84%
± 5	90%	84%	90%

Average harvest per vessel-trip were nearly equal for matching records for the Southeast Alaska on-site comparisons. Conversely, average harvest per vessel-trip for the matching Southcentral Alaska records were comparatively larger for the on-site versus the logbook data (Table 3).

Table 3.-Average harvest per vessel trip as reported from on-site interview data minus the matching harvest reported on the logbook, in Southcentral Alaska.

Mean Difference (interview - logbook)	Halibut Harvested		
	1998	1999	2000
	0.79	0.87	0.17

DISCUSSION

Pacific halibut harvested by guided anglers as reported in the logbook program are in general substantially larger than independent estimates of the harvest as provided by the SWHS. The discrepancy increased over time for both IPHC areas 2C and 3A (Figure 1). A partial explanation for the increasing size of the discrepancy could include the decreasing maximum non-reporting rate (Table 1). Conversely, matching on-site data for IPHC Area 3A indicates that (at least for matching data) charter operators are underreporting their harvest of Pacific halibut in their logbook entries in comparison to what they are reporting to on-site survey staff (Table 3). The increasing discrepancy between the logbook reported harvest for Pacific halibut and SWHS estimates was not observed for other fish species in IPHC Area 3A, and was somewhat less in magnitude for the Area 2C fisheries (Figures 2-6).

The halibut harvest data collected from 1998 and 1999 logbooks in IPHC area 2C appears to be reasonable when compared with the SWHS and on-site creel survey estimates. However, we believe the halibut harvest reported in the 2000 logbooks from 2C is artificially inflated. For example, the reported logbook harvest for charter vessels located in Sitka during 2000 is approximately 3,000 fish higher than the Sitka creel survey estimate for both charter and private anglers. We do not believe the 2000 logbook data should be used in any management decision making process.

In IPHC area 3A the 1998 logbook data on halibut harvested on charter vessels appears to be reasonable when compared with SWHS estimates, but data from the 1999 and 2000 logbook programs are believed to be artificially inflated and should not be used in any management decision making process.

Additional analyses are planned to more fully evaluate the reliability and accuracy of the logbook data that may identify possible explanations to the discrepancies summarized above. All results of this 3-year comparison will be published in a Department of Fish and Game Fisheries Manuscript Report.