

## **Development of Logbook to support EM for Catch Estimation** ***DRAFT Project Plan***

### **Background**

This project is part of the cooperative research that is being undertaken to assess the efficacy of using EM to complete catch accounting of retained and discarded catch in fixed gear fisheries off Alaska. A critical component this research is determining what data are necessary for catch estimation and the best source for each of these data elements.

An effective EM program to enable catch estimation will require timely and accurate data. The primary source for these data will be EM systems (video and sensors). However, there are likely to be some data elements required for catch estimation that will not be able to be collected via EM or may be more efficient to collect directly from the vessel operator. These data will need to be collected through a logbook, either electronically or on paper.

Data collected using paper and electronic logbooks (elogbooks) plays an important role in groundfish and halibut fisheries management in Alaska. Logbooks are important for: Alaska Fishery Science Center (AFSC) Fishery Management and Analysis Division observer data collection, which feed into catch estimation and stock assessment; NOAA Office of Law Enforcement, and US Coast Guard, enforcement efforts; management and stock assessment of the halibut stocks by International Pacific Halibut Commission (IPHC); stock assessment of the sablefish stocks by NMFS Auke Bay staff, and fisheries research by scientists at the IPHC, AFSC, and in other institutions.

There are a number of issues that can impact the usefulness of logbook data including: delays in compilation of logbook data due to collection of paper and data entry; data gaps, either because of incomplete or inaccurate data elements, or because some vessels are not required to submit logbooks.

Logbook data are required in some fisheries, and to move forward industry input is important. To the extent possible, logbooks should be designed to be flexible to different operating patterns and logistical capabilities of the different sectors, and should be structured so as to minimize the burden on fishing operations, while also meeting data needs.

### **Project Goals**

To goals of this project is to: 1) determine the type and quality of logbook information is needed to support implementation of EM to estimate catch in the small boat fixed gear in Alaska; 2) develop an efficient means of collecting those data, either through an elogbook and/or via a paper logbook that is key-punched after the trip.

### **Summary of current logbook requirements**

Paper logbooks are required to be completed and submitted to NMFS for Federally permitted vessels over 60 feet in length that are fishing for groundfish and IPHC regulations require vessels that are 26 feet and over in length fishing for IFQ halibut to complete an

IPHC defined logbook. In addition, some vessels less than 60 feet that fish for sablefish voluntarily complete paper logbooks, which are collected and data are provided to Auke Bay Scientists. Vessels that are over 60 feet that participate in both the groundfish fishery and sablefish or halibut IFQ fishery during the same fishing year are required to complete the NMFS provided logbook with pages for multiple agencies.

### **elogbook requirements**

The use of the electronic logbook (elogbooks) on catcher/processors (CP) vessels has expanded in recent years. Starting in 2011, trawl CPs participating in the BSAI pollock fishery were required to submit elogbooks and have the additional requirement of entering their haul-specific catch of salmon in the elogbook. The elogbook requirement has also expanded to other CPs: trawl CPs participating in the Central GOA Rockfish fishery began using electronic logbooks in 2012 and longline CPs fishing for Pacific cod began using the electronic logbooks in 2013. There are also other CPs and some CVs that are using the electronic logbook voluntarily instead of submitting a paper logbook. In total, there are about 50 boats using the electronic logbook in 2014.

Starting in 2015, the elogbook requirements are expected to expand to all CPs and motherships that are required to use a flow scale. This will result in about 10 new vessels that will be required to use an elogbook.

### **Data currently collected on logbooks**

Attachments 1 and 2 provides examples of the current NMFS and IPHC fixed gear logbook for CVs. In general, vessels record haul-specific information in logbooks. This information includes vessel-specific information, management program, date and time of haul deployment and retrieval, spatial coordinates of haul deployment and retrieval, fishing depth, the type and amount of gear used, vessel estimates of total catch and species-specific catch, and species-specific discard.

There is currently a beta-version of the elogbook for CVs that is under development as part of the elandings project. The data collected in the elogbook mirrors the data elements on the paper logbooks and the current CV elogbook has been developed as a replacement for the paper logbook. It may be that all of the data currently being collected on the paper logbook are not necessary to support EM, and in which case, there could be a simplified version of the CV elog that would be used in conjunction with and EM system.

### **How logbook data are used for fisheries management**

Data collected using paper and electronic logbooks plays an important role in groundfish and halibut fisheries management. Logbook data are not directly used in by NMFS for catch estimation at this time. However, logbooks are accessed by observers while they are onboard a vessel to obtain data – and these data are incorporated into observer data and used in catch estimation and stock assessment. In particular, the logbooks provide information on effort (number of hooks and hook spacing), set location, and timing of fishing. The IPHC has had port samplers in the field collect halibut logbook information since the 1930s and has collected sablefish logbook for NMFS Auke Bay lab since the mid-2000. The weight per unit effort, gear, and location information from the logbook is essential for the annual halibut stock assessment. Logbooks are also an important data source for NOAA OLE and US Coast Guard in their enforcement efforts.

## Project Tasks

- Identify the minimum fields that are needed from logbooks to complement EM catch estimation.
  - Hold logbook sub-group meeting (including, at minimum, IPHC, NMFS, and OLE) to evaluate data currently collected on paper logbooks (Attachments 1 & 2).
  - Evaluate which data elements are required in logbook to support catch estimation
  
- Evaluate the efficiency of collecting the fields via EM versus using a logbook.
  - Using the list generated by the logbook sub-group meeting, evaluate which data elements could be collected via EM and which are necessary from the logbook.
  - For those fields to be collected via EM, design comparison tests with EM and logbook to evaluate the differences.
  
- Evaluate the efficiency gains of e-logbooks versus paper logbooks.
  - Cost and accuracy comparisons of e-logbook versus paper logbook and post-hoc data entry
  
- Identify Quality Control procedures and automation methods to improve data accuracy.
  - E-logbook
    - Verify the business rules that generate errors are appropriate (for example, might need to adjust business rules with gear)
    - what data elements could be collected with automation to reduce data entry errors (e.g. lat/lon from GPS instead of data entry)
    - what fields could be auto filled
  - Paper logbooks
    - how could the logbooks be designed to minimize errors and increase accuracy
    - Incorporate QC procedures into entry of paper logbooks
  
- Incorporate user feedback and testing into e-logbook
  - Provide test versions of the e-logbook to vessels from multiple fisheries and parts of the state to incorporate broad input on EM development
  - Incorporate more 'fishermen friendly' features to the extent possible
  - Provide training, user manuals, and outreach on e-logbooks

# IPHC HALIBUT LOGBOOK

Example

Complete this box for each page → TRIP# 2 PAGE: 1 of 1 VESSEL NAME: FLÉTAN STATE VESSEL#: 12345



Complete these boxes once for each trip

Captain's IFQ#: <b>1234</b> Captain's Name: <b>JOHN JONES</b>		IPHC Initials/#:	
Crew Size (including Captain): <b>3</b>		Date:	
IFQ# <b>1235</b> Name: <input checked="" type="checkbox"/> if same name as above	Sample Number:		
IFQ# <b>2345</b> Name: <b>MARY JONES</b>	AREA 4 CLEARANCE NUMBER		
IFQ# Name:	TO OFFLOAD		
CDQ (check one) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> CDQ#:	<b>2013-0084 2013-0197</b>		

CATCH DATE Year <b>2013</b>	TIME SET/HAULED (optional)	LOCATION				IPHC-Office Use Only	GEAR ID	Hauled (IPHC-office only)	NUMBER OF SKATES		TARGET SPECIES	Reason Code	LEGAL-SIZED HALIBUT CATCH Net Lbs. or Numbers	SABLEFISH SOLD (check one) Round Wt. <input type="checkbox"/> Western cut <input type="checkbox"/> Eastern cut <input checked="" type="checkbox"/> (IPHC use)	SABLEFISH SET NUMBER
		BEGINNING OF STRING Lat Long	END OF STRING Lat Long	Beg/End DEPTH (Fath.)	Set				Lost (Leave blank if zero)						
5 11		50°30.90' 179°56.21'E	50°32.55' 179°55.24'E	40-50		A	12.5	1.5	hal		6020	0			
5 11		50°31.76' 179°55.81'E	50°32.63' 179°53.48'E	115-139		A	20	0	hal		10840	0			
5 12		50°30.22' 179°53.19'W	50°33.47' 179°52.93'W	209-220		B	10	0	BC		850	4200			
5 12		50°29.10' 179°55.73'W	50°32.18' 179°55.46'W	220-282		B	10	0	BC		1200	3950			
5 13		no fishing													
5 14		50°32.39' 179°56.03'E	50°31.51' 179°58.86'E	58-90		A	12	0	hal		7550	150	0		

Date of Sale month   day 5   16		Dealer Island Cold Storage	Unloading Port Adak	Port Code	Weight Sold 26543
Retained for Personal Use 28		Retained for IPHC Use (Code 87)		Retained for IPHC Use (Code 87)	

Include if available

**COMMENTS:**

IPHC will forward AK Sablefish information to Sablefish Assessment, Anke Bay Lab

*[Signature]*  
Capt. signature

Complete at trip end

<b>CATCHER VESSEL DFL LONGLINE AND POT GEAR</b>	VESSEL NAME	FEDERAL CRAB VESSEL PERMIT NO.	IPHC USE ONLY	PAGE
	OPERATOR NAME AND SIGNATURE		ADF&G VESSEL NO.	
			FEDERAL FISHERIES PERMIT NO.	

<b>IDENTIFICATION</b>	INACTIVE	START	END	REASON	FEDERAL REPORTING AREA
	<b>IFQ</b>		<b>CDQ</b>		<b>OBSERVER INFORMATION</b>
	Operator IFQ Permit #		IFQ Permit #		CDQ Group #
	IFQ Permit #		IFQ Permit #		Halibut CDQ Permit #
	IFQ Permit #		IFQ Permit #		IFQ Permit #
<b>MANAGEMENT PROGRAM</b> <small>(Check if applicable and enter number)</small> <input type="checkbox"/> CDQ <input type="checkbox"/> Exempted <input type="checkbox"/> Research <input type="checkbox"/> AIP No. _____					

CREW SIZE	<b>GEAR TYPE (check one)</b> <input type="checkbox"/> Pot <input type="checkbox"/> Jig <input type="checkbox"/> Troll <input type="checkbox"/> Handline <input type="checkbox"/> Hook & Line <input type="checkbox"/> Other <small>If Hook &amp; Line, complete boxes immediately below.</small>								
<i>If same as previous page check</i>	<b>GEAR ID</b>	<input checked="" type="checkbox"/> <b>GEAR TYPE</b>				LENGTH OF SKATE (feet)	<b>HOOK</b>		No. Per Skate
		FIXED HOOK	TUB	AUTOLINE	SNAP		Size	Spacing (feet)	
	A								
	B								
	C								
D									

**Complete these boxes once per delivery**

<b>CATCH BY SET</b>	SET #	DATE SET		DATE HAULED		LOCATION OF SET				BEGIN & END DEPTH (Fath.)	IPHC OFFICE USE ONLY	
		TIME SET	TIME HAULED	Buoy or Bag #	BEGIN POSITION		END POSITION					
					LATITUDE	LONGITUDE	LATITUDE	LONGITUDE				

GEAR ID	NUMBER OF SKATES OR POTS		TARGET SPECIES CODE	CDQ/IFQ HALIBUT (Pounds)	IFQ SABL (Pounds) <small>RD Round wt. WC Western cut EG Eastern cut</small>	CR CRAB	HAIL WEIGHT (lbs. or mt.)	BIRD AVOID GEAR
	Set	Lost						
					Wt.	Wt.		
					No.	No.		
					Wt.	Wt.		
					No.	No.		
					Wt.	Wt.		
					No.	No.		
					Wt.	Wt.		
					No.	No.		
					Wt.	Wt.		
					No.	No.		
					Wt.	Wt.		
					No.	No.		

<b>DISCARD/DISPOSITION</b>	For groundfish and Pacific herring, circle: lbs. or nearest 0.001 mt. For Pacific halibut, Pacific salmon, king crab, and Tanner crab, record in numbers											
	DATE											
	SPECIES CODE											
	PRODUCT CODE											
	BALANCE FORWARD											
	DAILY TOTAL											
CUMULATIVE TOTAL SINCE LAST DELIVERY												

COMMENTS:

<b>DELIVERY</b>	DATE	ADF&G FISH TICKET NO.	RECIPIENT'S NAME or IFQ REGISTERED BUYER	UNLOADING PORT	IPHC USE ONLY