

OVERVIEW OF THE 2010-2011 GROUND FISH HOOK AND LINE/TRAP CATCH MONITORING PROGRAM AUDIT

1. INTRODUCTION

After a Groundfish Hook and Line/Trap Catch Monitoring Program (GHLCMP) trip is completed, the weight of landed and discarded catch has to be deducted from the vessel's current quota holdings for each quota-managed species. This information is summarized on a Quota Status Report (QSR) issued to the vessel. The QSR also shows how much quota the vessel holds for each quota-managed species by Species Area Group (SAG) and the allowable overage for each.

QSRs are generated using DMP landed catch data which are allocated to quota areas using the catch area percentages. For the GHLCMP, the default data source for the catch area percentages and any relevant released catch information is the fisher-completed Fishing Log. In order to assess whether or not the Fishing Log is complete and accurate enough to be used for catch management purposes, the CIC Monitoring Subcommittee and DFO designed a number of tests of the fishing log data. This set of tests is what is referred to as the GHLCMP Audit: a technical assessment of the data quality of the Fishing Log.

2. THE AUDIT

The Audit's primary purpose is to test the accuracy of the Fishing Log data against the DMP Data, EM Imagery Data, and EM Sensor Data. If the data match within certain standards, the Fishing Log is used for the catch allocation and represents the at-sea catch reporting for that trip. If the Fishing Log does not meet the current standards, the Trip is reviewed by the DFO Review Board which may choose to use the Fishing Log Data as is, require further testing, or require further Imagery Viewing, up to and including 100% if it is to be used in lieu of the Fishing Log for the QSR catch allocation.

2.1 SPECIES TESTED

For the purposes of the Audit, only a subset of species (or species groups in the case of rockfish) are considered for testing. These are:

- Total Rockfish (all rockfish species combined)
- Sablefish
- Dogfish
- Halibut
- Lingcod

In some cases only directed species for a trip are included in the tests for that trip.

2.2 CATCH DATA SCORING FOR THE AUDIT

A scoring process is applied for the testing of catch data. For this process, the number of pieces in the logbook are compared against the other data sources and scored based on the difference between the two. The following table outlines the current scoring criteria and results.

Scoring Methodology

Score	Difference when Pieces < 30 ^{*1}	Difference when Pieces ≥ 30 ^{*1}
10	0 Pieces	0 - 2%
9	1 - 3 Pieces	>2% - 10%
8	4 - 6 Pieces	>10% - 20%
7	7 - 9 Pieces	>20% - 30%
5	10 - 12 Pieces	>30% - 40%
3	13 - 15 Pieces	>40% - 50%
0	Over 15 Pieces	Over 50%

^{*1} Where the number pieces is determined by the data source being compared to (i.e. DMP or EM Imagery).

3. AUDIT TESTING

3.1 DMP TO FISHING LOG TESTS

In this test, the retained pieces from the fishing log are compared to the DMP piece counts for non-directed species and rockfish. For each species or group subject to testing, the total pieces for the trip are compared between the fishing log estimates of retained and the DMP piece count for that species.

Fishing Log to DMP comparisons by fishery

Fishery	Species or Species Group Subject To Testing				
	Dogfish	Halibut	Lingcod	Rockfish	Sablefish
Halibut	TP		TP	TP	TP
Halibut/Sablefish Combo	TP		TP	TP	
Lingcod	TP	TP		TP	TP
Rockfish	TP	TP	TP	TP	TP
Sablefish	TP	TP	TP	TP	
Dogfish		TP	TP	TP	TP

TP = Test Performed

3.2 IMAGERY TO FISHING LOG TESTS

This test compares the catch as determined through EM Imagery Review to that documented in the fishing log. For standard trips, this is completed for a random selection of 10% of fishing events with a minimum of one. Fishing Events are defined as recorded in the Fishing Logbook. For set-line gear, viewing is done from start of hauling until the final anchor is retrieved.

Each species or group is subject to comparison by catch type for each reviewed set. The catch types include: Retained, Total Released, and Legal/Marketable Releases.

Testing Matrix by Fishery and Species

Fishery	Species or Species Group Subject To Testing													
	Dogfish			Halibut			Lingcod			Rockfish		Sablefish		
	RT	RL ^T	RL ^M	RT	RL ^T	RL ^M	RT	RL ^T	RL ^M	RT	RL ^T	RT	RL ^T	RL ^M
Halibut	TP	TP	TP		TP		TP	TP	TP	TP	TP	TP	TP	TP
Halibut/Sablefish Combo	TP	TP	TP		TP		TP	TP	TP	TP	TP		TP	
Lingcod	TP	TP	TP	TP	TP	TP	TP	TP		TP	TP	TP	TP	TP
Rockfish	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP
Sablefish	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP		TP	
Dogfish				TP	TP	TP	TP	TP	TP	TP	TP	TP	TP	TP

RT = Retained; RL^T = Total Releases; RL^M = Legal/Marketable Releases; TP = Test Performed

3.3 SENSOR TO FISHING LOG TESTS

There are four tests currently performed comparing the EM Sensor Data to the Fishing Log for each fishing event. These are based on the events' location (latitude/longitude and Major Area), date and time:

- Test 1: All Event Start Times within 60 min
- Test 2: All Event Start Locations within 1 nautical mile
- Test 3: Fishing Area (Major Area) declared in Fishing Log match those as determined through EM Sensor data
- Test 4: Fishing Area (major Area) declared in Fishing Log matches the latitude and longitude recorded for that event (i.e. based on the skipper's lat/long, is the Major Area recorded in the fishing log correct)

4. AUDIT RESULTS

4.1 CURRENT TESTING STANDARDS AND RESULTS

Test	Standard	Results	
DMP to Fishing Log	All Scores >= 9	Meets Standard	
	Any Score < 9	See Trip and Annual Score details	
EM Imagery to Fishing Log	All Species (Including Rockfish)	Average Score >= 8	Meets Standard
		Any Score < 9	Extra Feedback
		Average Score <= 8	See Trip and Annual Score details
	Rockfish Tests	Rockfish Scores >= 7	Meets Standard
		Rockfish Scores < 7	See Trip and Annual Score details
EM Sensor to Fishing Log	All F-Log-Sensor Set Start Times within 60 min	Met	Meets Standard
		Not Met	Extra Feedback
	All F-Log-Sensor Set Start Locations within 1 nautical mile	Met	Meets Standard
		Not Met	Extra Feedback
	All F-Log Set Start Locations match FLog GMA	Met	Meets Standard
		Not Met	Catch Allocation Uses EM Areas
	All F-Log Set Start Locations match EM GMA	Met	Meets Standard
		Not Met	Catch Allocation Uses EM Areas

4.2 TRIP AND ANNUAL SCORING

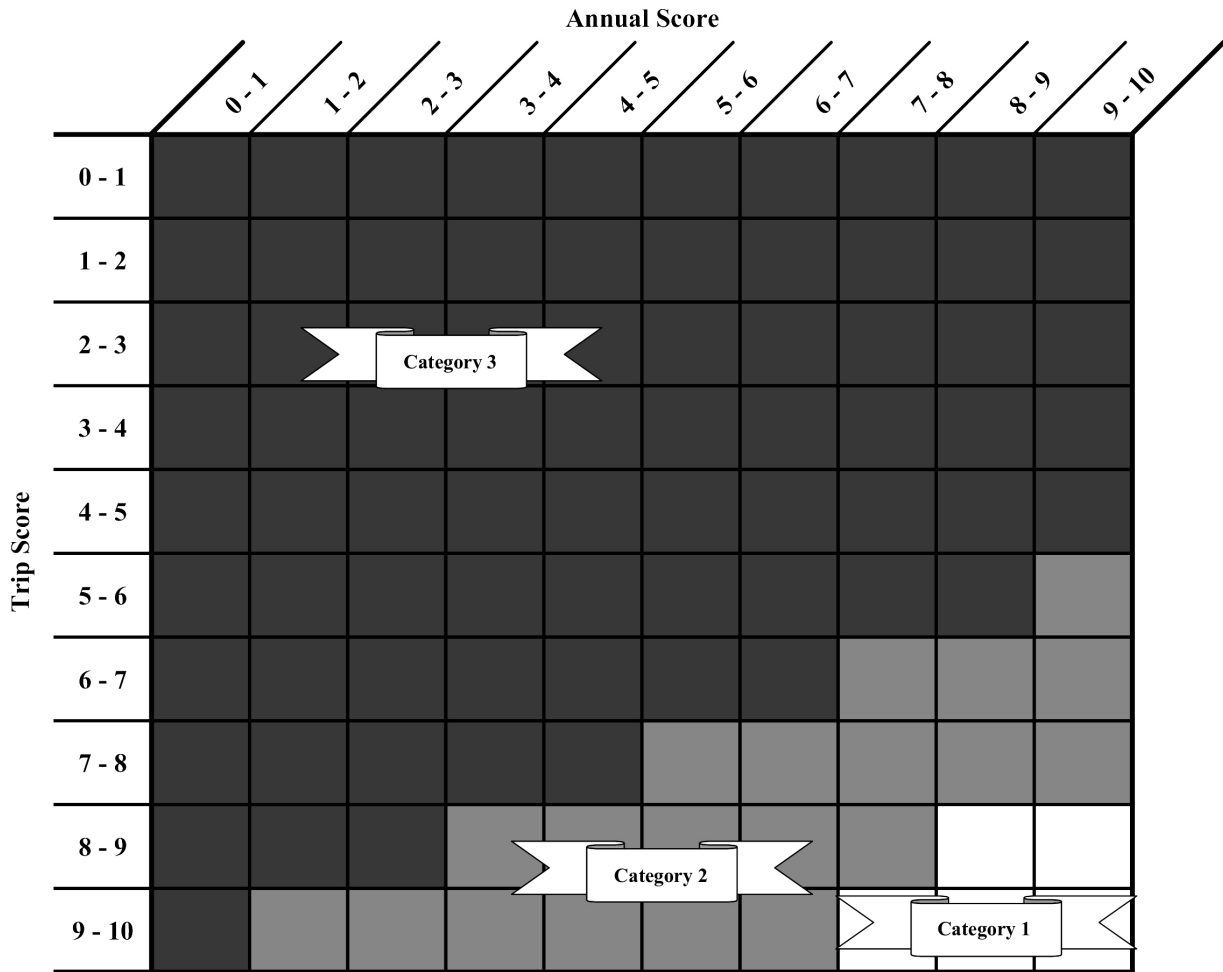
Trip and Annual Scores were added to the Audit results evaluation process in order to provide a simpler measure of the overall results of a trip (detailed scoring emphasizes the tests not meeting the criteria, regardless of magnitude or number).

Trip scores are calculated using all of the tests performed on the trip with weighting based on the number of pieces tested. The intent is to have the higher magnitude (pieces) tests count more heavily towards the overall score. That is, small incidental catch with lower scores would not overwhelm the overall score.

The Annual Score is intended to be an assessment of the Vessel’s Audit history. The Vessel’s Annual Score is simply the average of all trip scores for trips occurring in the previous 365 days (not including the current trip) for any trip conducted by the vessel (across all fisheries).

The combination of Trip and Annual Scores creates a measure of the vessel and the current trips “rating” (Category) and will be used by the review board to determine the appropriate action for trips not meeting the standard for the Catch portion (DMP and Imagery Tests) of the Audit.

The current ranking of trip and annual scores result in the Categories as seen below.



4.3 DFO REVIEW BOARD REPORTING

For trips not meeting the catch portion of the Audit, the Category of Trip/Annual scores determines the action taken by the DFO Review Board.

Audit Category	Action
Category 1	No trip-level action, but all trips in this category will be reviewed by the Review board for assessment.
Category 2	10% of the trips in this category will be randomly selected for 100% review. All trips in this category will be billed a flat rate per set to recover the cost of the additional viewing (i.e. all vessels with trips in this category share the cost). There are no additional charges for those vessels which have trips selected for the 100% review process. Likewise, results of the additional viewing are not used for QSR purposes.
Category 3	Subject to 100% Review. DFO Audit Review Board will contact the vessel to review the trip prior to any additional work being performed. If 100% review is deemed appropriate after discussion with the vessel, DFO will direct Archipelago to view 100% of the video for the trip. In these cases, the licence holder will be billed for the additional viewing. The catch data for these trips will be used in the generation of the trip's QSR.