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MEMORANDUM **NOTE DE SERVICE**

To / À: Sandra Davies,
Area F Harvest Committee,
IHHPC

From / De: Peter Katinic
Area F Troll Manager
North Coast Fisheries Management

Security Classification - Classification de sécurité
UNCLASSIFIED

Our file - Notre référence

Your File - Votre référence

Date
April 25, 2013

Subject / Object: **2013 EFFORT HARVEST RATE MANAGEMENT TOOL PERFORMANCE**

Description

The Harvest Rate Management Tool estimates the stock specific daily harvest rate (HR) on the WCVI Chinook return to Canada by the Area F Troll fishery. This tool was developed from 11 years of WCVI stock specific catch generated from DNA analysis. This data was used to generate a relationship of the average daily HR per boat day for each day of the fishing season. The pattern of the average daily HR of WCVI per boat day is depticted in Figure 1.

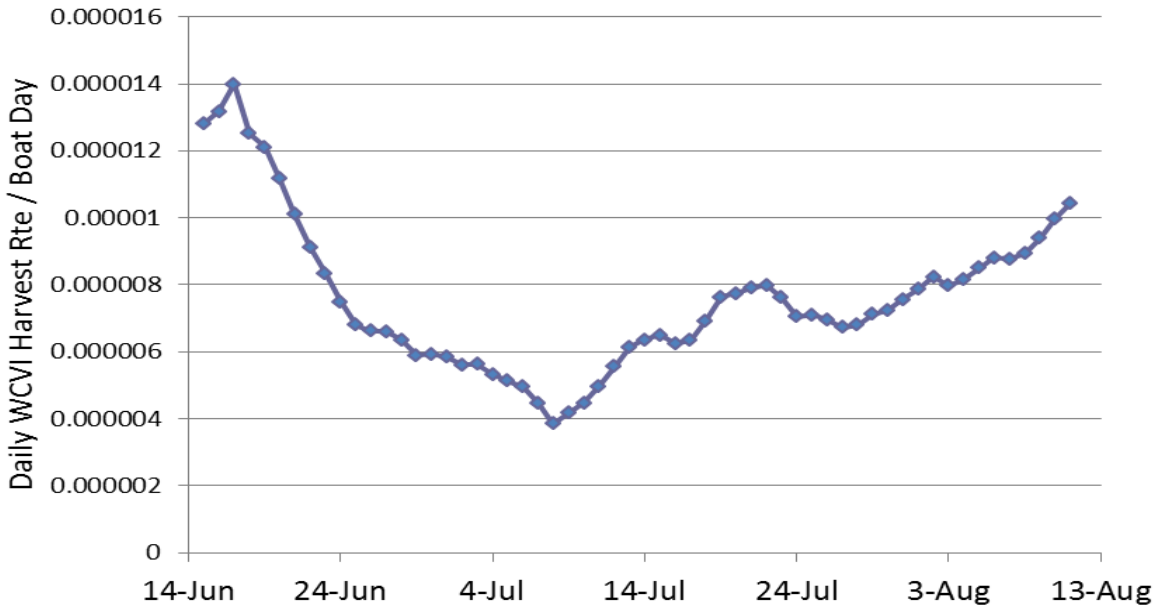

Figure 1. The average daily HR of WCVI Chinook salmon per individual boat day in the Area F Troll fishery.

Canada

To estimate the total daily WCVI HR, the number of vessels (effort) fishing in the Area F Troll fishery each day is multiplied by the average daily WCVI HR per boat day for the particular date of the season. The total daily WCVI HR is then cumulated through the season to estimate the total HR. An example of how this works is provided below in the review of the 2013 season. This daily estimation of HR along with further constraints in fishing area and fishing time (e.g. August closures) is used to manage the troll fishery to the objective that limits the Area F Troll to a 3.2% exploitation rate on WCVI Chinook.

2013 WCVI Management in Area F Troll

In the 2013 troll season, the department managed to the 3.2% exploitation rate limit on WCVI Chinook based on the preseason forecast. Table 1 provides a summary of WCVI catch and estimated HR by day of the fishery. Note that DNA data has a 2 week lag in-season. Therefore in-season management decisions are made on incomplete data. Table 2 provides a comparison of the pre-season WCVI Chinook salmon forecast and catch versus actual returns. Table 3 show the performance of managing WCVI Chinook in the Area F troll using the pre-season forecast versus the EHR management tool.

Table 1. Review of 2013 in-season Area F Troll management for WCVI Chinook salmon.

		Cumulative		Inseason DNA		Effort Harvest Rate Mangement Tool (2013 version)		
	Effort	Chinook		DNA	Cumulative	WCVI HR	Daily	Cumulative
Date	(# Vessels)	Catch		% WCVI	WCVI	per Boat Day	WCVI HR	WCVI HR
21-Jun	116	13,442		3.4%	461	0.00101%	0.117%	0.12%
22-Jun	114	19,900		3.4%	683	0.00091%	0.104%	0.22%
23-Jun	115	25,648		3.4%	880	0.00083%	0.096%	0.32%
24-Jun	113	29,275		3.4%	1,005	0.00075%	0.085%	0.40%
25-Jun	102	32,223		3.4%	1,106	0.00068%	0.069%	0.47%
26-Jun	90	34,974		4.1%	1,219	0.00066%	0.060%	0.53%
27-Jun	92	38,540		4.4%	1,374	0.00066%	0.061%	0.59%
28-Jun	101	42,211		4.4%	1,534	0.00064%	0.064%	0.66%
29-Jun	107	45,387		4.4%	1,672	0.00059%	0.063%	0.72%
30-Jun	103	49,378		4.4%	1,846	0.00059%	0.061%	0.78%
1-Jul	105	52,886		4.4%	1,999	0.00058%	0.061%	0.84%
2-Jul	97	56,463		4.4%	2,155	0.00056%	0.054%	0.90%
3-Jul	90	59,453		4.4%	2,285	0.00056%	0.051%	0.95%
4-Jul	79	60,907		4.4%	2,349	0.00053%	0.042%	0.99%
5-Jul	73	62,456		4.4%	2,417	0.00051%	0.037%	1.03%
6-Jul	79	65,507		4.4%	2,552	0.00050%	0.039%	1.06%
7-Jul	79	68,584		4.4%	2,687	0.00045%	0.035%	1.10%
			TOTAL WCVI IN			TOTAL HR ON WVCI		
VALIDATED CATCH:		69,262	VALIDATED CATCH:		2,897	BASED ON EHR TOOL:		1.10%

Table 2. Review of 2013 WCVI Chinook forecast and catch versus actual returns.

Area F Troll		TAC	103,000
		Total Chinook Catch	69,262
WCVI			
	Pre-season	forecast RTC	56,000
	In-season	WCVI in Catch (w/DNA)	2,897
	Post-season	actual WCVI RTC	215,342
		3.2% HR	6,891

Table 3. Comparison of 2013 Area F Troll WCVI Chinook management performance using the pre-season forecast versus the EHR management tool in the 2013 fishery.

WCVI Exploitation Rate Management Objective	3.2%
In-season HR Estimate	
- based on forecast (DNA/forecast)	5.2%
- as estimated by EHR relationship	1.1%
Post-Season	
-CWT estimate	1.1%
-DNA estimate (DNA/actual WCVI RTC)	1.3%