

Northwest Atlantic Fisheries Organization



Report of the Fisheries Commission and Scientific Council
Ad hoc Working Group on Catch Reporting

3-4 February 2014
Halifax, Nova Scotia, Canada

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Dartmouth, Nova Scotia, Canada
2014

**Report of the Fisheries Commission and Scientific Council
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1. Opening

The Scientific Council (SC) Chair Don Stansbury (Canada), opened the meeting at 1000 hrs on Monday, 3 February 2014 at Prince George Hotel in Halifax, Nova Scotia, Canada. The Fisheries Commission (FC) Chair, co-Chair of this ad hoc working group (WG), could not attend. It was determined that for this inaugural meeting an election of a substitute co-Chair would not be necessary.

Representatives from Canada, Denmark (in respect of the Faroe Islands and Greenland), European Union, Japan, Norway, and USA were in attendance. The presence of the newly appointed Executive Secretary of NAFO, Fred Kingston was acknowledged (Annex 1).

2. Appointment of Rapporteur

Neil Campbell and Ricardo Federizon of the NAFO Secretariat were appointed co-Rapporteurs.

3. Adoption of Agenda

The agenda as previously circulated was adopted. Under item 10 - Other matters, discussion on the roles and responsibilities of national scientific observers compared to the current NAFO observer programs was proposed (Annex 2).

4. Review of Terms of Reference

The terms of reference (ToR) of this ad hoc WG as stipulated in FC Doc 13/24 were reviewed. There was no need to revise the ToR. Concerning ToR 4 it was clarified by the representatives of the Scientific Council (SC) and the presiding Chair that this WG shall report to SC during the June meeting and not necessarily only during September Annual Meeting.

5. Review and follow-up to the Peer Review Expert Panel 2013 Recommendations

A review of the Peer Review Expert Panel 2013 Recommendations, which are documented in GC Doc 13/04 Rev, was conducted. In FC-SC CR WP 14/6 Rev which is presented in Annex 3, the NAFO bodies responsible to follow-up, the actions to date and further actions to consider are presented. The reference to SC documents in Annex 3 indicates that specific recommendations addressed to SC have already been addressed. Further responses and details are expected from SC following from its meeting in June 2014.

Some CPs felt that more in-depth discussions on the substance of Annex 3 were required. However, this did not occur due to time constraints. The working paper presented in Annex 3 therefore should be considered preliminary and will be finalized by the WG at a later time.

6. Evaluation of potential approaches and data sources (e.g. daily catch data, tow by tow data, log books, etc.) to validate STATLANT 21 data and/or provide catch estimates

The Secretariat described the different catch databases housed at the Secretariat: Monthly Provisional Nominal Catches, at-sea inspection reports, port inspection reports, observer reports, vessel transmitted information (VTI), and STATLANT 21.

The WG evaluated the data sources and discussed their individual limitations and potentials for utility to validate catch data and/or generate catch estimates. It was noted that these data sources are currently collected for fishing compliance purposes and with the exemption of daily catch reports (CAT) as part of VTI, are not available for scientific purposes. Under Article 28.9 of the NCEM, the SC could request such data from the Executive Secretary. Future discussion on possible utilization of the various data sources requires consideration of issues such as accessibility and confidentiality.

Notable in the discussions was how these data can be used in the cross validation of the catch estimates. It was highlighted that for scientific purposes, fishing related data for the whole geographical distribution of the straddling stocks managed by NAFO is desirable. It was subsequently noted that in some cases NAFO data can be complemented by coastal States which can provide information related to fishing in their EEZ. Issues of tow-by-tow logbook data and data from NAFO observers as well as scientific observers were also extensively discussed. Regarding tow by tow logbook data, fishing masters are required to record the entries but are not required to forward them to the Secretariat. There was general agreement among participants on the potential usefulness of tow-by-tow data for catch estimation, however, some CPs have indicated that there are some practical reasons why these logbooks are not forwarded (e.g. paper submissions are in practice very difficult and for CPs having an Electronic Recording System in place the electronic standards are not defined/compatible with the system at the NAFO Secretariat). It was recognized that future discussions of tow-by-tow data would need to consider practical approaches to make the data available recognizing that it needs to be anonymized and does not necessarily need to be transmitted in real-time to the Secretariat. Regarding the observers data, it was acknowledged that the current NAFO observer program was established primarily for compliance purposes, although there is no formal distinction between “scientific” and “compliance” observers recognized in the NAFO Conservation and Enforcement Measures (NCEM). The level of details in the historical observer’s reports is not consistent. Even if there were complete compliance in submitting the reports, the observer data might be of limited utility to the SC.

In 2013, an observer template was adopted by the Fisheries Commission and it was made as a requirement beginning 2014 for the observers to use in reporting. It is hoped that this will considerably improve the quality of the observer reports in terms of utility of the SC. The new observer template includes the collection of length frequencies. However, SC representatives noted that without concurrent age samples, length frequencies collected are of limited utility for stock assessments. Some also reported issues with the use of this new template by compliance observers. On some vessels, scientific observers and compliance observers are now doing the same task. It was noted that the evaluation of the observer template is in the purview of the Standing Committee on International Control (STACTIC) and not this WG. It was also noted that Article 30 of the NCEM currently allows SC to request additional scientific work, e.g. length frequency data collection, be conducted by observers deployed in the NAFO Regulatory Area. All CPs which deploy scientific observers were encouraged to analyze and provide their information as a source of data.

A summary of discussions on the catch databases are also contained in the working paper FCSC CR WP 14/1 Rev presented in Annex 4. Some CPs felt that more in-depth discussions were still required. The working paper therefore should be considered preliminary and will be finalized by the WG at a later time.

The Secretariat made two presentations concerning approach in usage of the STACTIC data in complementing STATLANT 21: 1) methods to compare catch estimates --- STATLANT 21 vs STACTIC, and 2) analysis of Vessel Monitoring System (VMS) and VTI (daily CATch reports) data (Annex 5). In the former, it is recognized that in their respective current form, VTI data is the most useful because of the high level of compliance of the fishing vessels in submitting the daily catch reports and the level of detail which they provide – daily catch by species and by Division (CATs). The latter presentation is a more detailed approach in making quantitative analysis using the VTI-CAT reports. The WG recognized the utility of the STACTIC data and the usefulness of the proposed approach. The SC was encouraged to pursue this further in the stock assessment work, in particular, as a pilot for catch estimation of 3M Cod.

7. Prioritization of stocks for initial consideration

In consideration of the importance of the stock to the fishing industry, of the development or update of Conservation Plan and Rebuilding Strategy (CPRS) of certain stocks, and the need for scientific data for stock assessment, the following stocks were identified as priorities: 3M cod, 2 + 3KLMNO Greenland halibut, and 3LNO American plaice (see item 9).

8. Consideration of terms of reference (governance, participation) if it is advised that this ad hoc WG continues

This WG would operate at least for another year under the same goals and objective as stipulated in FC Doc 13/24. A recommendation to this effect will be forwarded to FC and SC for consideration (see item 9).

9. Recommendations to forward to the Fisheries Commission and Scientific Council

It is recommended

1. that this WG continues, with the same goals and objectives, for another year. At the 2015 Annual Meeting FC and SC give consideration to prolonging this joint working group
2. that this WG should meet, either by correspondence or at another meeting preceding the 2014 Annual Meeting, to continue moving towards a transparent and robust method for producing estimates of catch
3. that if agreed by FC and SC the work would continue on priority stocks for the June 2015 SC meeting, and again report at the 2015 Annual Meeting.
4. that a process for catch estimation be constructed by continuing dialogue within this working group, using a suite of available data considered in Annex 4, and any other data, such as scientific observer reports. The process should be fully documented and transparent, including documentation of data selection and validation and tools for data synthesis.
5. that in a timely manner, SC, with assistance from the Secretariat, conducts a pilot exercise to explore and document the use of all available data, focusing on VMS & VTI for all flag states operating in this fishery, for catch estimation of Div. 3M Cod.

Results of this exercise may guide the work of this group in the future, especially on other priority stocks, e.g. 2 + 3KLNMO Greenland halibut and Div. 3LNO American plaice.

6. to encourage Contracting Parties to reflect upon the discussions of this working group and be prepared to offer revisions to the existing CEM to improve catch reporting at future FC meetings.

The WG recommends FC give further consideration to:

1. the need for development of best practice/guidelines for data collection and clarification of roles/responsibilities for observers
2. make NAFO Observer catch and biological sampling information, in anonymized form, available to Scientific Council and working groups of FC and SC to support catch validation and development of catch estimates for stock assessment.

3. the provision of NAFO logbook data (NCEM Annex II.A) to the Secretariat by electronic means, and to making it available to Scientific Council and working groups of FC and SC for the purpose of supporting catch validation and development of catch estimates for stock assessment.
4. the available data for straddling stocks which may contribute to the assessment of catch estimates.
5. exchange of catch on entry and exit information with NEAFC to improve reliability, noting the specific role of Joint NEAFC-NAFO Advisory Group on Data Management in this matter.

10. Other Matters

The discussion on the overlap of duties between NAFO and Scientific Observer Programmes is reflected in item 6 and in Annex 4.

11. Adoption of the Report

This report was adopted through correspondence after the meeting.

12. Adjournment

The meeting was adjourned at 1830 hrs, Tuesday 4 February. The presiding Chair thanked the Secretariat for the support and the meeting participants for their cooperation and input. The participants likewise expressed their thanks and appreciation to the presiding Chair for his leadership.

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Annex 2. Agenda

1. Opening
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of Terms of Reference
5. Review and follow-up to the Peer Review Expert Panel 2013 Recommendations
6. Evaluation of potential approaches and data sources (e.g. daily catch data, tow by tow data, log books, etc) to validate STATLANT 21 data and/or provide catch estimates
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Annex 3. PREP 2013 Recommendations

(FC-SC CR WP 14/6 Rev)

At the 35th NAFO Annual Meeting, the Peer Review Expert Panel (PREP) presented its 2013 Final Report (identified by PREP as “2013 Progress Report”) and NAFO recommendations at the General Council (GC Doc 13-4 Revised). The table below identifies the NAFO bodies responsible to follow-up the recommendations, the actions taken so far, and further actions for consideration.

PREP recommendations	NAFO body to follow-up	Actions to date	State of play or further actions to consider	WG follow-up
1a) The Panel recommends that NAFO work collectively across constituent bodies to ensure that STATLANT 21A data are received by the Secretariat within the timeframes currently established, and	GC, SC, CPs	There is a continuing effort by the Secretariat to ensure that accurate STATLANT data are received accurately and in a timely manner. CPs are duly reminded of their reporting obligations. SC routinely evaluates, inter alia, the timeliness of submissions. It is not only of the interest of SC, but also of GC as STATLANT data is used in the calculation of the CPs contribution to the NAFO organization.	Although there has been improvement in reporting timeliness, some CPs still have institutional barriers in meeting the May 1 deadline.	
1b) The Panel recommends that NAFO work collectively across constituent bodies to ensure that the reporting of effort in hours fished as part of the STATLANT 21B submissions is done as per current requirements	SC, FC, CPs	(see above)	(see above)	

<p>2) The Panel recommends continued exploration of the VMS database and innovative approaches to allowing broader availability while meeting all the necessary confidentiality requirements</p>	<p>FC, SC, Secretariat</p>	<p>VMS data (position reports) have been made available to SC as guaranteed in NCEM Article 29.10.d. In 2013 Annual Meeting, FC adopted a proposal for making VTI data (Vessel-transmitted information, like the daily catch reports (CATs), transmitted by vessels using the same communication channel and technology in transmitting position reports) more readily accessible to SC and FC/SC joint WGs (FC Doc 13/8). This provision is now embodied in 2014 NCEM Article 28.9.e.</p>	<p>Campbell and Federizon (2013) describe a method of estimating fishing effort in the NAFO RA using VMS (SCR Doc 13/001). In STACTIC WP 13/30 and FC-SC CR WP 14/2, STACTIC demonstrated a way of utilizing VTI data in comparing catches with STATLANT data. FC and SC and this WG may further consider these methodologies in evaluating the reliability of STATLANT 21.</p>	
<p>3) The Panel again recommends it should be clarified whether Scientific Council adjusts its estimates in subsequent years based on updated STATLANT 21 information. If this is not currently done then procedures should be changed so as to ensure it is done in the future.</p>	<p>SC</p>	<p>[see: Report of the SC Ad hoc WG on Catch Estimation 19 March 2013, SCS Doc. 13/02]</p>		<p>The WG noted that the SC has adjusted some STATLANT data in the past, based on updated data, but that it is not done routinely for most stocks. For most cases, the adjustments would not have been large, and would not have resulted in STATLANT data replacing an SC estimate from a different source.</p> <p>Possible future action: If significant changes (updates) in STATLANT data occur, SC should consider updating its relevant catch estimate(s) accordingly.</p>

<p>4) The Panel again recommends that flag states with scientific observer information that have not, to date, derived alternate estimates of catch should do so such that Scientific Council can compare those estimates with the STATLANT 21 information. The methodology(ies) used should be fully documented. The Panel notes that Scientific Council has already given consideration to methodological issues during its March 2013 WebEx meeting (NAFO 2013b)</p>	CPS, SC	<p>[see: Morgan et al. 2013. Estimates of catch from the Canadian otter trawl fishery for yellowtail flounder based on observer data. NAFO SCR 13/023. Ser. No. N6176]</p>	.	<p>SC reviewed methodologies for catch estimation from observer data in June 2013. This included existing analyses of scientific observer data, as well as some new methodologies (e.g. SCR 13/023, Morgan et al).</p> <p>Possible future action: In consideration that observers data is now being reported in a standard format to the Secretariat starting in 2014, SC continues this work. CPs with scientific observer data are encouraged to provide these data where possible for use in catch estimation/validation.</p>
<p>5) The Panel recommends that Scientific Council prepare a document detailing, to the extent possible, the reasons they lack faith in the STATLANT catch information. Such a document could then form the basis for meaningful dialogue between Scientific Council and Fisheries Commission. The Panel notes that Scientific Council has already given consideration to this during its March 2013 WebEx meeting (NAFO 2013b).</p>	SC	<p>The documents listed in FCSC CR WP 14/3 may be mentioned here. [see: Excerpts from the June SC Report. p. 67-69.]</p>	<p>Such a document could be prepared for review by SC in June 2014, however much of the relevant information was reviewed by SC in June 2013 (e.g. SCR 13/51, by Brodie).</p>	<p>This was largely covered in SC in SCR 13/051, which provided a history of the catch estimation in NAFO. The difference between CPUE estimates from scientific observer data vs STATLANT 21 data was the key problem in many fisheries.</p> <p>Possible future action – SC could prepare additional documentation on this issue in June 2014.</p>

<p>6) The Panel recommends that Scientific Council prepare a document that describes, at least in general terms, the rationale followed in selecting what is considered the best estimate of catch when different estimates are available.</p>	SC	<p>In general, if discrepancies between unofficial estimates and S21 data are relatively small, or if the amount of scientific observer data was very low, SC has used S21 data. SC continued to use the scientific observer-based estimates until 2011, after which time they have not been available to SC. Occasionally, an estimate from scientific observers has been rejected in favour of an estimate by NAFO observers, or by S21 data, usually for reasons of lower levels of scientific observer coverage within a fleet or fishery.</p>	<p>Such a document could be prepared for review by SC in June 2014.</p>	<p>In general, if discrepancies between unofficial estimates and S21 data were relatively small, or if the amount of scientific observer data was very low, SC has used S21 data. When scientific observer estimates were made available in the early 2000s, they often agreed with the surveillance-based estimates. SC continued to use the scientific observer-based estimates until 2011, after which time they have not been available to SC.</p> <p>Possible future action – SC could prepare additional documentation on this issue in June 2014.</p>
<p>7) The Panel recommends that NAFO (Scientific Council and Fisheries Commission working together) and Flag States document and test (for accuracy) methods used by scientific observers AND NAFO observers for estimating catch on a tow-by-tow basis. Discrepancies between tow-by-tow estimates represent the leading candidate for explaining the discrepancy between scientific estimates and STATLANT reports. In examining the accuracy of tow-by-tow</p>	CPs, FC, SC	<p>FC: NAFO Observers Scheme is described in Chapter V of the NCEM. The scheme was established for compliance purposes. Observers are required for each haul, to record, among others, the catch and effort data. The recording of observer data did not follow a protocol until standard forms were developed and were required for use by observers in 2014 (Annex I.I.M, 2014 NCEM). In 2013, it has become a requirement for each vessel to</p>	<p>FC: To date, appropriate observer data are inadequate for tow-by-tow analysis since the requirement to use standard observer forms is just recently in place. Tow-by-tow analysis of fishing logbooks can not be performed because the Secretariat does not have access to the fishing logbooks. FC/STACTIC may consider requiring fishing vessels to forward the fishing logbook data to the Secretariat and SC to be able to perform the analysis.</p>	

<p>estimates by NAFO observers, it is important to understand the relationship of these estimates to vessel logs and the accuracy of vessel logs. In addition to discrepancies between scientific observer and NAFO observer tow-by-tow estimates, it is also important to consider the possibility that fishing behavior and vessel reporting is influenced by the presence or absence of an observer (i.e., a possible observer effect when there is less than 100% coverage of vessel tows either due to the absence of an observer or their unavailability during certain times of the day).</p>		<p>accurately record the catch of each tow/set and complete fishing logbooks entries (Art. 28.2.a). However, it is not required for the CPs to forward the fishing logbooks to the Secretariat or to make available the logbook data to SC.</p> <p>Tow by tow data from NAFO observers should be available from 2014 onwards.</p>	<p>Analysis of detailed NAFO observer data could be undertaken at the secretariat and compared against CAT reports and other data sources.</p>	
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Annex 4. List of Catch databases housed at the NAFO Secretariat

(FC-SC CR WP 14/1 Rev)

Database	Description	WG discussions and considerations for catch data validation
Monthly Provisional Nominal Catches (NCEM Articles 28.8 and 28.9.d)	Submitted by CPs (not flag States) within 30 days of the end of the reporting month. The Secretariat collates the submissions and transmits the information to CPs within 10 days after the end of each month. MPNC reports are used to monitor the quota and TAC uptakes of CPs. MPNC reports contain the year-to- date catches of regulated and also of un-regulated stocks. (since 2004)	Concerns were raised regarding the submission of this data and its ongoing utility, in light of the limited uses to which it is now put. It was also highlighted that catches need to be submitted at a flag state- rather than contracting party- level of aggregation if they are to be any use for stock assessment.
At-Sea Inspection Reports (NCEM Article 36)	Inspection Reports are prepared by at-sea inspectors who board fishing boats. Inspectors are required to indicate in their reports the summary of catches derived from fishing logbook entries for the current fishing trip. Catch information from at-sea inspection reports are incomplete as they provide only a “snapshot” during the time of inspection. The main substance of an inspection report is the “apparent infringements” of the NCEM provisions detected by inspectors. The copies of inspection reports are forwarded to the Secretariat and are treated as confidential. The data is compiled in a database is used for compliance purposes. (since 2004)	At sea inspections were considered to be a snapshot of catch data at a particular point in a trip, and provide limited information on observed hauls. The relatively short time allowed for inspections, and the absence of segregation of catch by division in the hold of vessels limits the scope of inspection data to inform the catch validation process.
Port Inspection Reports (NCEM Articles 43-46)	This report (called PSC 3) is transmitted to the Secretariat by the port States. The report contains the quantities landed by species and catches retained onboard if any. They also contain the logbook catches during the fishing trip. Landed catches and logbook catches are not consistently reported by stock or Division, e.g. some entries indicate Redfish in Division 3LMNO.	The view was expressed that the consistency of reporting is variable, particularly due to catch being offloaded by species, rather than, for example, by stock or assessment unit. For compliance purposes this may be fine but again, limits the usefulness of the data for performing catch validation for stock assessment purposes. While the coverage of Greenland halibut is 100%, for other species it is less.

	<p>Since 2011, 100% port inspection coverage is not required, except when vessels are landing fish stocks under CPRS, e.g. Greenland halibut. Port Inspection Reports are treated with confidence. They are used for compliance purposes. (Confidential to Secretariat)</p>	
<p>Observer Reports (NCEM Articles 30.A)</p>	<p>The observer onboard a vessel shall submit a report to the Executive Secretary. This report is required for every trip except for vessels participating under the electronic scheme as described in Article 30.B).</p> <p>These reports are received in a non-standardized format. All contain total catches by subareas. Some include daily catch reports by species and subarea, and others include haul-by-haul information. Degree of compliance to Article 30.A.2, specifically on paragraphs b and c has been very low, probably because no standard form for observer reports existed.</p> <p>In 2014, it has become a requirement for observers to report using the standardized form as prescribe in Annex II.M of the NCEM.</p>	<p>It was felt that sharing training manuals and beginning to draw up best practices around estimating tows would be beneficial. The respective tasks of Scientific and Compliance observers was raised and it was noted that there are some philosophical differences in what each scheme is designed for. Scientific observers are only fielded by a small subset of Contracting Parties, and data confidentiality issues prevents robust external review. The current NAFO Observer form, developed in 2007 and used by a number of contracting parties, is felt to be helpful, and although there has been no compulsion to report data to the Secretariat along these lines, from 2014 this form is mandatory and it may be helpful for the Secretariat to do some in-year analysis.</p>
<p>Vessel Transmitted Information (VTI) (NCEM 28.6)</p>	<p>Since 2011, it has been a requirement for fishing vessels to transmit daily catch report (CAT) by species and by Division. CAT reports are transmitted using the same technology and communication channel as the VMS. Except in the first few months of 2011 (when fishing vessels were still in the learning curve in fulfilling the daily CAT requirement), there is a generally very good compliance among the vessels in transmitting the CAT report. Currently, the Secretariat considers CAT reports more reliable in monitoring quota uptakes than the Month Provisional Catch Reports. (since 2011)</p>	<p>Discussion was focused on the development and reporting of haul-by-haul data and the implementation of e-logbooks. A number of Contracting Parties already have such systems. Data is available at a flag-state level, in near real-time. It was highlighted that this data comes from a compliance perspective and it should be borne in mind that this would only be fully available for fisheries in the NRA.</p> <p>There was a general consensus that haul-by-haul logbook data would be extremely useful if submitted to the Secretariat. It was noted that while the roll-out of a standardized e-logbook scheme might be difficult and costly, it could be possible to</p>

		<p>repurpose the CAT report format to create a rudimentary system for reporting haul-by-haul data. In moving towards a recommendation from this group, it may be more helpful to say “in an electronic format” and then move towards a standard system.</p> <p>It was also noted that in some situations there can be a discrepancy allowed between catch reported in the logbook and the actual quantity landed, i.e. discards. While access to haul-by-haul data may not improve the precision of at sea estimates, it would provide another source of data that could be compared against VMS to at the very least verify depth fished, target species, and so on.</p> <p>While NAFO Observer reports should already be in a haul-by-haul format, the degree of independence of these figures from the logbook data was discussed. It was suggested that the current observer form be modified to allow recording of whether a catch was observed in full or taken from a logbook.</p>
<p>STATLANT 21</p>	<p>STATLANT 21 is official nominal catch and effort statistics in FAO Statistical Area 21. They are submitted to the NAFO Secretariat, the repository of STATLANT 21, by flag States fishing in Area 21, which is geographically identical to the NAFO Convention Area. (from 1960 to current)</p> <p>STATLANT 21A, considered provisional, contains summary on total catches by species by NAFO Divisions. Submissions of 21A are expected to be received no later than May 1st for the reporting year.</p> <p>STATLANT 21B, considered final, contains more detailed catch and effort information grouped according to gear</p>	<p>STATLANT 21 is the longest standing data source available to NAFO, is comprehensive and includes all stocks. However, some removal data is not captured by STATLANT 21, e.g. data on discards is excluded from STATLANT 21 submissions. The issues around completeness, timeliness and institutional barriers to reporting are well known to all parties.</p>

	used, vessel size (tonnage), target species, and NAFO Division. Submissions of STATLANT 21B are expected to be received no later than August 31 st for the reporting year.	
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Annex 5. Approaches in comparing a STACTIC catch data and STATLANT 21 data and in analyzing VMS and VTI data

(FC-SC CR WP 14/2 and FC-SC WP 14/9)

1. Comparing STACTIC catch data and STATLANT 21

**Catch estimates comparison:
STATLANT 21 vs STACTIC Data**
(previously presented at STACTIC September 2013 Annual Meeting)

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STATLANT 21 column

Comparison of STACTIC catch data has been a routine exercise in the Compliance Review --- Table 3 of the Compliance Compilation.

STATLANT 21 column is inserted in Table 3.

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Issue: PRP Recomm # 24 - Resolve STALANT 21A and SC-STACTIS catch estimates discrepancies. (NAFO PRP Report (2011), GC Doc 12/1, Annex 3)

NAFO Response : *inter alia*, CPs instructed STACTIC to reflect on ways to use STACTIC data in examining the reliability of STATLANT 21. (GFS 13-124)

STACTIC Response: STACTIC would create tables to compare STATLANT vs STACTIC data. (FC Doc 13/4)

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Discrepancies possibly due to one or more of the following:

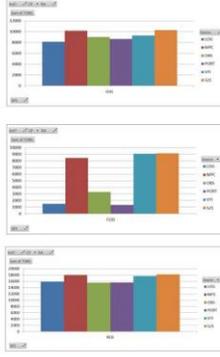
- STATLANT: Convention Area
- MPC: Convention Area, grouped by CPs
- Port: NRA, <15% coverage, partial landings, product landings (CFs may be inaccurate), divisions sometimes combined (e.g. Red in 3LMNO); charter catches unaccounted; transshipments
- Logbook: NRA; *dependent on port inspection reports*
- Observer: NRA; 2 schemes: "traditional" and "electronic"; inconsistency in level of details in catch reporting;
- Daily Catch Report (CAT): NRA,

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STACTIC catch data:

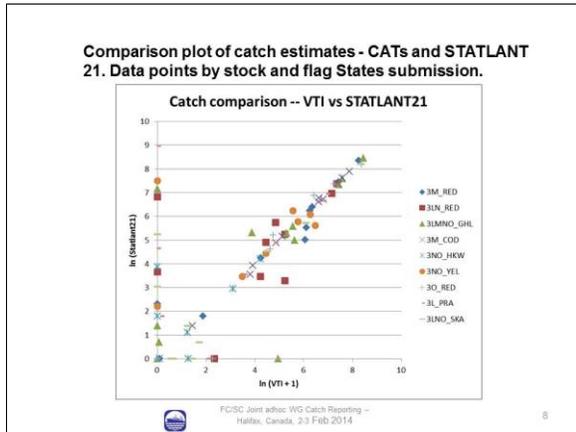
- Port Inspection Reports (PSC 3) (Art. 43, Annex IV.C)
- Logbooks (from PSC 3) (Annex IV.C)
- Observer Reports (Art. 30.A.2.g)
- Daily CATCH Reports (CATs) (Art. 28.2.4)
- Monthly Provisional Catch Reports (Art. 28.4)

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- 2012 GHL 3LMNO**
 - All CPs
 - 26.4% max diff. (due to some non-NRA catches may still included).
- 2012 Cod 3M**
 - All CPs
 - 507 % max diff. (due to incomplete reports from Ports and Observers).
- 2012 RED 3LMNO**
 - All CPs
 - Comprising 3 stocks
 - 17.6 % max diff. (due to some non-NRA catches may still included)

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2. Analyzing VMS and VTI data

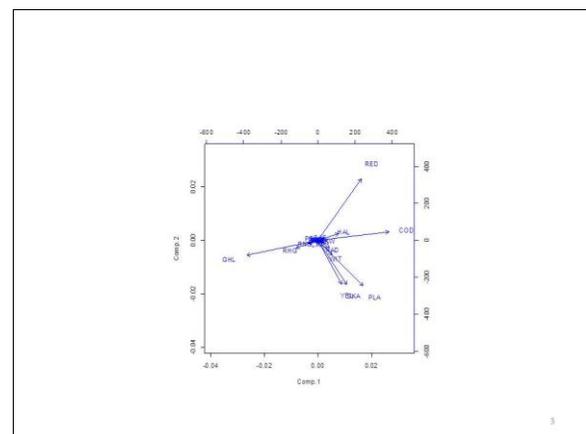
Analysis of VMS and CAT Data

NAFO Secretariat

- Conclusions:**
- **Ways to use STACTIC data in examining the reliability of STATLANT 21:** comparison of reported catches by Species/Stock by Division. Tables and graphs – filtering mechanism to examine individual flag States submissions.
 - Usefulness of STACTIC data:
 - CAT reports are the very useful and effective because of the level of detail, and compliance of vessels in reporting CATs.
 - In current form, port and logbook data are useful in comparing catch estimations of stocks under recovery plan, e.g. GHL 3LMNO. 100% coverage of port inspections, not 15%, is required when vessels land stocks under recovery plan (Art. 43.10)
 - Usefulness can be enhanced...
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- ## CAT Data Clustering
- Requested as part of “fishery assessment” by WGEAFM
 - PCA on daily CAT reports (4515 fishing days)
 - Vessel, flag state, division, position, not included
 - Includes 21 species which are reported as largest bulk in at least 1 days fishing

- Making STACTIC data more useful in accessing STATLANT 21 reliability**
- STATLANT 21 and MPC: Coastal states submissions distinguish catches in EZZ and NRA.
 - Monthly provisional catch reports: Report by flag States, not by CPs.
 - Port Inspections: Landings by stock or species and by division. e.g. Cod or Redfish in Div. 3LMNO would not be acceptable; GHL in Div. 3LMNO would be acceptable.
 - Logbook (as reported in Port Inspections): *same as in Port Inspection Reports*; make available directly to Secretariat.
 - Observer reports: At least report catch by species by division. Compliance to recording of haul-by-haul.
 - CAT reports: continuing compliance to daily transmission of catch reports by each fishing vessel, by species and by Division.
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No surprises...

- Identifies 4 fisheries
 - Cod
 - Redfish
 - Greenland halibut
 - Skate/Plaice/Yellowtail
- However...

4

