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Northwest Atlantic Fisheries Organization

Report of the NAFO Joint Fisheries Commission—Scientific Council Catch Data Advisory Group (CDAG)

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The Catch Data Advisory Group (CDAG) was established jointly by the Fisheries Commission and Scientific Council at the 37th NAFO Annual Meeting on the recommendation of the NAFO Joint Fisheries Commission-Scientific Council Ad Hoc Working Group on Catch Reporting (WG-CR) (Annex 1). The inaugural meeting was held face-to-face on 16 November 2015 at the NAFO Secretariat Headquarters in Dartmouth, Nova Scotia, Canada.

The Group had follow-up meetings through video tele-conference (WebEx) on 25 February, 17 March, 27 April, 3 May 2016 and 7 July 2016, working intermittently between the WebEx meetings through the document sharing and discussion forum features of SharePoint. This report covers all the meetings.

1. Opening of the Meeting

The inaugural face-to-face meeting was opened by Katherine Sosebee (SC Chair) and Pat Moran (FC Vice-Chair) at 9:30 AM, 16 November 2015 at the NAFO Headquarters in Dartmouth, Nova Scotia, Canada. The subsequent WebEx meetings were presided by the SC and FC Chairs.

Representatives from Canada, European Union, the Russian Federation and the United States of America were in attendance (Annex 2).

2. Appointment of Rapporteur

The FC and SC Coordinators were appointed Co-rapporteurs.

3. Review of available data sources, including establishment of parameters for catch data review

As the first step in the establishment of parameters for catch data review and in the development of a methodology for catch estimation, a cursory review of the potential data sources was made.

The NAFO Secretariat made a presentation of data sources (metadata) it holds which can be potentially useful for catch estimation purposes. These sources are the Port Inspection Reports (PSC3), Observer Reports, Monthly Provisional Catches, VMS and Daily Catch Reports (CATs), and Logbook Haul by Haul (H x H) catch data. Collectively they are referred to as STACTIC catch data as the fishing vessels and Contracting Parties are required by the NAFO Conservation and Enforcement Measures (NCEM) to submit them to the Secretariat. The Secretariat noted that the presentation is a modified and updated version of a previous presentation at the WG-CR meeting in 2014 (see Annex 5 of FC-SC Doc. 14/01).

Intrinsic limitations for direct comparison between the different data sources were noted. For example, Monthly Provisional Catches are reported by Contracting Parties (in contrast to flag States) and cover the Convention Area. Port inspection coverage requires at least 15% coverage except when Greenland halibut is included as a landed species in which case the coverage is 100%. Also, a single fishing trip may cover two calendar years – those fishing trips that started in late in the year and landed its catch in the early part of the following year. The most detailed data sources are the Daily Catch Reports (CAT) and the Logbook Haul by Haul (H x H) data but the coverage is limited to the Regulatory Area. Therefore, initial data processing and adjustments may be required in order to determine whether a direct comparison of catch estimates is possible.

The review of the data sources was done in the context of the usefulness of the various data sources for catch estimates and the limitations to their usefulness, consistent with the review format specified in the Terms of Reference of this Group.

The conclusions and observations emanating from the review are captured in the updated table Data Sources Useful for Catch Validation (underlined text in Annex 3).

It was determined that the CATs and the H x H data are potentially best data sources for species/stock catch estimates because of the level of detail they provide. However, in 2015, the reporting requirement for H x H was limited to the top three species in every haul. Thus for 2015, the CAT reports were deemed more reliable because of their completeness. It was noted that the top-three requirement in the H x H data collection has been expanded to include all species caught beginning 2016.

The determination of the primary data sources of catch estimation was based on coverage, level of detail, and compliance to the reporting requirements.

The at-sea inspection reports can be very useful in cross-checking the reported catches from the CAT and H x H data in the time period in which the at-sea inspectors inspected the fishermen's logbooks. Actual comparisons were made between the logbook data, as recorded in Section 14 of the at-sea inspection reports, and the CATs. Generally there is an agreement between the CATs and the logbook data, except for a few outliers.

Regarding Observer Reports, the high level of compliance to the submission requirements was noted. However, many of these reports were received in .pdf format, and therefore were not fully processed for this meeting because of the time constraints of extracting the data.

Regarding the port inspections, as explained above at least 15% coverage is required when the flag State Contracting Party and port State Contracting Party are different. Inspections are not required when the flag and port State Contracting Parties are the same. However, an inspection is required, i.e. 100% coverage, when Greenland halibut is landed.

The information Equivalent Live Weight landed catches (nominal catches) as the product of Product Weight and Conversion Factor contained in the port inspection reports can be used to check the integrity of the catch information in the CATs and H x H data, especially in resolving the issue of outliers as a result of recording errors and/or mis-recording catches in CATs and H x H reports.

4. Development of a methodology for catch estimation to be used by Secretariat, including specific methodologies for priority stocks 2+3KLMNO Greenland halibut, 3LNO American plaice, and 3M cod

The analysis of the various data sources considered as part of the process to develop a methodology for catch estimation are illustrated by the three schematic tables presented in Annex 4. The schematic tables apply to any species or stock under consideration for catch estimation. The italic entries in the tables mean that they are derived information from other entries.

The first step is the identification of fishing trips. According to Article 1.7 of the NCEM: *Fishing trip* for a fishing vessels includes the time from its entry into until its departure from the Regulatory Area and continues until all catch on board from the Regulatory Area has been unloaded and transhipped.

Table 1 of Annex 4 presents catches of a particular species or stock from the STACTIC reports on a fishing trip basis. Vessel, gear, effort information are also provided as they are auxiliary information requirements in fish stock assessment studies. Table 1 allows a quick comparison of the CAT's and H x H as primary data sources with other STACTIC data sources. Such comparison would allow a preliminary identification of outliers which may suggest something about the integrity of some entries in the primary data source.

Table 2 of Annex 4 presents catches from primary sources (CAT and/or H x H) as compared to the logbook catches recorded in at-sea inspection reports. The recorded catches from primary sources represent the totals corresponding to the fishing duration as indicated in the at-sea inspection reports. Catch estimates are therefore not complete. The purpose of the table is to allow cross-checking a sample of catch totals with that of the logbook totals as copied into the at-sea inspection reports.

Table 3 of Annex 4 represents the general characterization of catch estimation methodology. Catch data of the species/stock under consideration are entered in the appropriate cells; subtotals are calculated by day, trip, vessel, NAFO Division, and flag State. Catch entries are distinguished between "retained" and "rejected" when possible. The distinction enables the comparison of the totals from primary source with the Equivalent Landed Weight from the Port Inspection Reports (PSC3).

During the data review, it was noted that entries from the primary sources and from the logbook entries are more prone to errors and/or mis-recording than the entries in the Port Inspection Reports, specifically on the entries of Conversion Factors and Landed Equivalent Weight. Thus the information on Conversion Factors and Landed Equivalent Weight can be used on an ad hoc basis to calculate a "correction factor" that be applied to outliers or erroneous entries in the primary data source.

The resultant Estimation Strategy represents a number of refinements in methodology developed over the course of all meetings. In an effort to summarize the methodology agreed upon by CDAG, Canada presented an outline of the approach (Annex 5) which utilizes the information from the Port Inspection Reports (PSC3).

It was noted that the estimates were not available during the June 2016 meeting of the Scientific Council. For the assessments conducted at that meeting, SC derived the catch estimates as described in the meeting report document SCS Doc. 16/14.

The methodology is applicable only to the STACTIC data which is limited to the NRA. To cover the straddling stocks, Canada provided the corresponding Canadian EEZ catch data to complement the STACTIC data. The Canadian Catch Data methodology is explained in Annex 6.

5. Next steps: Secretariat reporting to the WG-CR, Scientific Council and Fisheries Commission

In accordance with the Terms of Reference and the operational flow chart developed by the WG-CR for this Group (see FC-SC Doc. 15/01), the NAFO Secretariat shall validate the catch estimate with support from designated experts/resource persons after the Group reviewed the data sources and parameters for assessment established (see item 3).

The WG-CR shall provide guidance on the steps described above. It was noted that this Group and the WG-CR have the same Chairs and practically the same membership and thus the guidance was already being provided.

It was agreed that the Secretariat shall proceed with the derivation of catch estimates starting with priority stocks mentioned in item 4 using the methodology outlined in Annex 5. The estimates shall be forwarded to the Scientific Council for stock assessment purposes. The summary report of the catch estimates will also be provided to the Fisheries Commission for information and future consideration. The Group acknowledged that the methodology may be further developed once other identified sources of data can be utilized (e.g. H x H data) and to incorporate feedback from WG-CR, Scientific Council or Fisheries Commission.

6. Other matters

EU informed the Group that it is developing a project proposal *Study on Catch Estimates Methodologies.* The Group, as requested, considered the project proposal and provided comments and input:

- It was clarified that Sections *Standard protocol* and *Tolerance of catch estimates* will be done in tow-by-tow basis;
- STACTIC, specifically its Observer Program Review Working Group (WG-OPR) should be involved and its role defined.
- SC - Catch Estimation Group and STACTIC – WG-OPR should also be requested to provide comments and input to the draft proposal.

7. Adoption of Report

This report was adopted at the 7 July WebEx meeting.

8. Adjournment

The last WebEx meeting was adjourned at 9:00 AM on 7 July 2016. The next meeting will be held in February 2017 to evaluate the 2016 H x H data.

Annex 1. Terms of Reference of CDAG

Mindful that the availability of accurate catch data is critical for scientific assessment and the sustainable management of NAFO stocks;

Concerned that the reliability of catch data continues to be one of the most significant issues facing NAFO;

Recognizing the importance of communication between the Fisheries Commission and the Scientific Council and recent efforts to enhance this dialogue and information exchange through the establishment of joint working groups;

Recalling that the Peer-Review Expert Panel highlighted the need for a more coordinated analysis of data (GC Doc. 13/4);

Noting the positive steps taken by NAFO to improve data accuracy and data-sharing including sharing daily catch reports with the Scientific Council, as well as the establishment of the *Ad Hoc* Working Group on Catch Reporting

Further noting the positive steps taken by the *Ad hoc* Working Group on Catch Reporting during its initial meeting in February 2014, in particular, its review and evaluation of NAFO data sources which may be of utility for the validation of catch data;

Following on the instructions of the Fisheries Commission to the *Ad Hoc* Working Group on Catch Reporting to develop a framework for the validation of NAFO catch data and generation of catch estimates (FC Doc. 14/30)

Convinced of the need for a collaborative approach (Fisheries Commission and Scientific Council) to validate STATLANT data and where necessary, generate catch estimates for use in assessments and overall management of NAFO stocks;

It is **recommended** that:

A Catch Data Advisory Group is established subject to the following Terms of Reference:

Objectives:

1. to identify and provide guidance to the NAFO Secretariat on specific data inputs, gaps and parameters, in particular ensuring the representativeness of data for validating catch and/or developing catch estimates;
2. to provide oversight and endorsement of catch estimate methodology prepared by NAFO Secretariat;

Structure:

The Group shall be comprised of technical experts from Contracting Parties, with knowledge of data sources and reliability thereof and/or operational practices within the fishery, and the NAFO Secretariat.

Specific Duties:

In responding to requests from the Fisheries Commission or Scientific Council to undertake an assessment of catch for an individual stock(s), with initial priority given to SA2 + Div. 3KLMNO Greenland halibut, Div. 3LNO American plaice and Div. 3M cod, the Advisory Group shall:

- review available data sources with reference to Appendix 1 and establish parameters for catch data review; propose a methodology to be used by the Secretariat;
- Report to the Fisheries Commission and Scientific Council

The NAFO Secretariat shall:

- review the information and derive an estimate (possibly with support from designated experts or agreed upon resource persons), ensuring confidentially of data;

- provide estimates to the Scientific Council for stock assessment purposes

Meetings:

Meetings of the Catch Data Advisory Group may be held at the request of the Fisheries Commission or the Scientific Council, in consultation with Contracting Parties and the NAFO Secretariat. Timing should be decided on a case by case basis, recognizing the need to conduct catch validation in a time frame that will enable its use for stock assessments;

The Advisory Group shall communicate regularly through teleconferences and electronically (WebEx) as required.

Reporting

A summary report, highlighting data sources, parameters of analysis, and subsequent results shall be produced for broad dissemination. Such reports will be limited to aggregate and/or anonymized data/conclusions.

Detailed analytical data and assessments will remain with the NAFO Secretariat for internal use of the Advisory Group to ensure confidentiality.

Annex 2. List of Participants

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Annex 3. Review of the STACTIC Data

DATABASE	USEFUL FOR CATCH ESTIMATES?	LIMITATIONS TO USEFULNESS
Monthly Provisional Nominal Catches (MPNC) (NCEM Articles 28.8.a and 28.9.d)	Useful as a secondary tool to supplement CAT reports for straddling stocks. In cases where CAT reports are not available (e.g. in respect of Coastal States fishing within EEZ).	Data is provided monthly rather than in real-time. Potential for human error due to more people involved in manipulating data. Aggregated at CP level rather than flag state. Available by stock/management unit rather than by division. Post-hoc revision of STATLANT data not reflected by this source may complicate its use.
At-Sea Inspection Reports (NCEM Article 36)	Useful as a secondary tool in cases where there may be a problem with particular figures	Logbook catches between two inspections (or between date of entry and current inspections) are copied in the inspection reports. The logbook information can be very useful when comparing them with Logbook Haul by Haul, daily catch reports and observer reports, but only within the time frame indicated by the inspectors.
Port Inspection Reports (PSC-3) (NCEM Articles 43-46)	Useful as a verification tool to compare reported and observed landings.	Does not include discards and may not include all landings (other than for GHL). Again, data are not reported at a stock/management unit level, only by species and "area of capture" (FAO 21, 3LMNO, etc.).
Observer Reports (Article 30A)	Haul by haul observer data is potentially a very good tool for catch validation.	It was noted that the 2015 catches were recorded in H x H basis. However, further processing is required.
VMS and CAT reports (NCEM 28.6.c, 28.8.b, 29.9.e and 29.9.f)	A primary source of catch validation information.	VMS is a proxy for effort and not necessarily reflective of fishing activity, given weather, searching behaviour, etc.
Logbook Haul by Haul Data	The primary source of catch and effort information.	Data are only available from 2015. Work is required to achieve consistency in reporting formats across CPs. Trip duration and the 60-day reporting requirement creates a time lag in data availability.

DATABASE	USEFUL FOR CATCH ESTIMATES?	LIMITATIONS TO USEFULNESS
STATLANT 21	The official NAFO landings database – the baseline statistics which are being validated.	Issues remain around completeness and timeliness of reporting. STATLANT does not include discards.
Other sources of data (e.g. Scientific Observer data, dockside monitoring program, etc.)	Haul by haul observer data is potentially a very good tool for catch validation. Dockside monitoring data is a primary source of catch validation information.	Only covers a limited number of fleets. Data is available from coastal states only. A good source in conjunction with VMS.

Annex 4. Development of Methodology for Catch Estimation in Three Schematic Tables

Table 1. Reported catches of [species/stock] by fishing Trips in the NRA.

Trip #	Flag State	Vessel #	Vessel power (from NOTification)	Gear	Directed Species (from Daily Catch Reports)	Target Species (from AUThorizartion)	Catch-on Entry (COE) date	Catch on Exit (COX) date
[Arbitrary #. Trips are sorted by FS and Vessel# and Date]	[Flag State]	[Vessel name not disclosed]	[NCEM Article 25.1.a]	[NCEM Annex II.C1]	[NCEM Art. 28.6.c]	[NCEM Article 25.1.b, Annex II.C2]	[NCEM Article 28.6.a]	[NCEM Article 28.6.b]

Number of Fishing Days (EndDate-startDate+1)	Divisions visited	Effort - Fishing hours from VMS	Effort - Fishing hours from Haul x Haul data	Catches of [single species/stock] from Daily Catch Reports (CATs)	Catches of [single species/stock] from Logbook Haul x Haul Reports	Catches of [single species/stock] from Observer Reports	Nominal Catches from PSC 3 (Port Landings) or Port Inspection Reports
[NCEM Article 29.2.a]	[can be gleaned from the "Relevant Area" field of the CAT, or from the POSition reports]	[Speed for Position reports in the range of 1-5 knots is considered to be fishing. NCEM Article 29.2.a]	[NCEM Article 28.8.B, Annex II.N]	[NCEM Article 28.6.c]	[NCEM Article 28.8.B, Annex II.N]	[NCEM Article 30.A, Annex II.M]	[if available or derivable. Product Landed Weight x Conversion Factor. Section B.2. of NCEM Annex IV.C]

Table 2. Comparing CAT and H x H catches [of species/stock] with Logbook Catches as recorded in the At-sea inspection reports.

At Sea Inspection Report # and Date of Inspection	Inspection Report: Fishing Date Range	Corresponding Trip #	Flag State	Vessel #	Relevant Division	Logbook Catches (from Sect. 14 of At-Sea Inspections)	Catch from CAT's during the fishing date range	Catch from Logbook H x H during the fishing date range
[Assigned #, sorted flag State, Vessel, and date]	[days where actual fishing took place]	[Trips are sorted by FS and Vessel# and Date]	[Flag State]	[Vessel name not disclosed]	-data-	-data-	-data-	-data-

Table 3. Estimating [species/stock] catches in the NRA.

Trip #	Flag State	Vessel #	Relevant Date	Relevant Division	Catch from CAT - CA (retained)	Catch from CAT - RJ (rejected)	Catches from CATs (retained + rejected)	Catches from Logbook HxH (retained)
1	FS1	V1	01-Jan	data			-	data for Tow1
1	FS1	V1	01-Jan	data			-	data for Tow2
1	FS1	V1	01-Jan	data				data for Tow3
Daily Subtotal					Data	Data	*Data*	*Daily Subtotal*
1	FS1	V1	02-Jan	data			-	data for Tow4
1	FS1	V1	02-Jan	data			-	data for Tow5
Daily Subtotal	FS1	V1	02-Jan	data	Data	Data	*Data*	*Daily Subtotal*
…	…	…	…	…	…	…	…	…
Subtotal by Trips	-	-	-	-	*Subtotal Trip*	*Subtotal Trip*	*Subtotal Trip*	*Subtotal Trip*
…	…	…	…	…	…	…	…	…
Subtotal by Fishing Vessel	-	-	-	-	*Vessel Subtotal*	*Vessel Subtotal*	*Vessel Subtotal*	*Vessel Subtotal*
…	…	…	…	…	…	…	…	…
Subtotal by Flag State	-	-	-	-	*FS Subtotal*	*FS Subtotal*	*FS Subtotal*	*FS Subtotal*
…	…	…	…	…	…	…	…	…
NRA Total	-	-	-	-	***NRA Total***	***NRA Total***	***NRA Total***	***NRA Total***
Canadian EEZ	-	-	-	-			-	-

Table 3. (Cont.)

Trip #	Catches from Logbook HxH (rejected)	Catches from Logbook HxH (retained + rejected)	Catches from Observer Reports with reported HxH data	Product Landed Weight (from PSC3)	Conversion Factor (From PSC3)	Landed Equivalent Weight (from PSC3, PLW x CF)	Data from Canada on EEZ within the NCA	Total
1	data for Tow1	data for Tow1	data for Tow1	-	-	-	-	-
1	data for Tow2	data for Tow2	data for Tow2	-	-	-	-	-
1	data for Tow3	data for Tow3	data for Tow3	-	-	-	-	-
Daily Subtotal	*Daily Subtotal*	*Daily Subtotal*	*Daily Subtotal*				-	-
1	data for Tow4	data for Tow4	data for Tow4	-	-	-	-	-
1	data for Tow5	data for Tow5	data for Tow5	-	-	-	-	-
Daily Subtotal	*Daily Subtotal*	*Daily Subtotal*	*Daily Subtotal*	-	-	-	-	-
…	…	…	…	…	…	…	…	…
Subtotal by Trips	*Subtotal Trip*	*Subtotal Trip*	*Subtotal Trip*	Data - Subtotal Trip	Data - Applicable Conversation or "Correction" Factor	Data - Subtotal trip	-	-
…	…	…	…	…	…	…	…	…
Subtotal by Fishing Vessel	*Vessel Subtotal*	*Vessel Subtotal*	*Vessel Subtotal*	*Vessel Subtotal*	-	*Vessel Subtotal*	-	-
…	…	…	…	…	…	…	…	…
Subtotal by Flag State	*FS Subtotal*	*FS Subtotal*	*FS Subtotal*	*FS Subtotal*		*FS Subtotal*	-	-
…	…	…	…	…	…	…	…	…
NRA Total	***NRA Total***	***NRA Total***	***NRA Total***	***NRA Total***		***NRA Total***	-	-
Canadian EEZ	-	-	-	-	-	-	**Canadian Total**	-
Grand Total	-	-	-	-	-	-	-	***Grand Total***

Annex 5. Estimation Strategy

Available Data

In recent years, there have been many improvements in the data that vessel masters are required to provide when fishing in the NAFO Regulatory Area (NRA). To date, CDAG has assessed the utility of these data sources and concluded that some data sources, such as tow by tow data, are not in a usable condition for this year.

It is anticipated that with recent improvements to the NAFO Conservation and Enforcement Measures (NCEM), as well as the resolution of technical issues relating to the submission and utilization of tow by tow data that this data source will be ready for use for the validation/estimation of 2016 catch. In the case of observer data, further assessment is required of the availability and improvements required to make that data useful.

In evaluating the utility of the current sources of data, CDAG decided that the most complete and timely data available are the daily catch reports (CAT)[1] which are reported by vessel masters to the Secretariat.

Given the completeness and timeliness of the CAT data, it is suggested that this be used as the base data.

Catch weighed off and recorded by port inspection (PSC3) is considered the most accurate. Based on these two factors, the following estimation methodology is proposed:[2]

1) Where PSC3 data is available, this equivalent live weight (plus recorded discard weight from CATs) be used;
2) For trips where no PSC3 data is available, a correction factor be applied to the sum of the CATs for that trip. The correction factor is defined as follows: the average per cent difference (weighted bycatch) between the CAT total and the PSC3 total for other trips by that same vessel;
3) If no PSC3 data is available at the vessel level, then a flag state factor be determined using the methodology in (2) using all vessels of that flag state;

[1] In some instances, SC documents refer to this as DCR

[2] In instances where the difference between CAT and PSC3 is greater than 50%, it is suggested that the Secretariat follow up with the appropriate Fisheries Monitoring Centre to ensure there is no administrative error. If no error exists but the discrepancy is related to extenuating circumstances which cannot be reconciled by the Secretariat, then the data from that trip should not be used in the development of any correction factor.

Annex 6. Canadian Catch Data Methodology and Dockside Monitoring Program

Introduction

The groundfish catches that were included in the supplemental information provided by Canada are to subject to 100% dockside monitoring program. This summary document includes an outline of the data sources utilized within the Catch and Effort System and a detailed description of the Canadian Dockside Monitoring Program that observes and verifies groundfish landings.

Catch and Effort System

The data collected in the Catch and Effort System is essential to quota monitoring, stock assessment, enforcement, licensing, policy analysis, statistical functions and scientific research.

The system uses hail reports, landing and fishing log documents to give timely quota information as accurately as possible. Landings are recorded during the offloading process with weighed quantities of fish by species. Fishing logs record information on where fish is caught and with what type of gear as well as the effort expended.

Individual fish harvesters, buyers, and dockside observers are required to complete and submit catch data information. These documents include:

- Summary buyer hails
- Quarterly landed value reports
- At sea hails
- Dockside Monitoring forms
- Tally sheet
- Summary forms
- Dockside monitoring hails
- Groundfish authorizations
- Purchase slips/cash slips
- Fishing logs (nearshore, offshore)

Data elements collected include (through at-sea hails, landings, logbooks)

- **Hails:** vessel, fisher, date sailed/landed, catch date, position, activity at time of hail, directed species, species caught, estimated catch (daily/total to date), species management area, quota. gear type
- **Landing:** vessel, fisher, landed date, port landed, form/document numbers, directed and bycatch species, species landed form (round, gutted head off, split), species management area, gear type, actual price, price per unit
- **Logbook:** vessel, fisher, date sailed, landed, capture date, gear amount/size, longitude and latitude, NAFO area, depth of fishing, directed species, gear soak time/tow time, species caught, estimated catch amounts, estimated discards, daily catch and release or sightings of SARA (Species at Risk Act) species.

Quality Control

The data quality is verified through data field verifications and data edits that extract erroneous data and are run daily, weekly, monthly or year end. Additional ad hoc audits are run to identify potentially erroneous data.

Dockside Monitoring Program (DMP)

The DMP was established in the mid-1990's and national policy and procedures were implemented in June, 2009. The key objective of the DMP is to provide accurate, timely and independent third party verification of landings. It is the primary source of data for Fishery Management Quota Monitoring.

Fisheries and Oceans Canada (DFO) has the overall accountability for the Program. DFO designates companies that have met the requirements as Dockside Monitoring Companies (DMCs) and meets annually

with these companies. DFO reviews and approves training programs developed by DMCs and assists in the training of observers. DFO consults with DMCs to develop procedures and protocols that aid in the effective determination of the landed weight and species of fish offloaded from vessels.

Further, DFO maintains a liaison with the *Canadian General Standards Board (CGSB)* regarding the Dockside Monitoring Program. DFO designates Dockside Observers once they have met position requirements, conducts field checks of these observers and may also revoke designations as required.

Designation of a Dockside Monitoring Company (DMC)

- All DMCs must be designated and issued a certificate by DFO as set out in the Fishery (General) Regulations.
- To be eligible for designation DMCs must meet the following requirements:
    - Submit a Business Plan
    - Meet *Arm's Length Criteria*
        - DMC agents should not have a significant interest in a fishing entity
        - DMC should have an independent Board of Directors, the majority of who have no connection with the fishing industry
        - DMC officers and employees should have no formal relationship with the fishing industry thereby allowing them to carry out their functions independently and with conflict of interest
        - DMC should not have significant commercial relationships with fishing entities
    - Quality Control (Training Plan & Quality Assurance)
    - Obtain and maintain a *Canadian General Standards Board* listing

Designation of Dockside Observers

- Successful completion of high school or equivalent knowledge. DFO will consider candidates with fishing industry experience requiring a similar skill set.
- Be a Canadian citizen or permanent resident
- Meet enhanced reliability clearance or produce a certificate of conduct from a police agency
- Must have no serious convictions under the *Fisheries Act* or Regulations
- Be in compliance with the *Arm's Length Criteria*
- Be physically fit and able to meet the physical requirements of the job (i.e. climbing ladders, boarding vessels)
- Complete a DFO-approved DMP training program with a pass mark of 75% in each module
- Regional Director General authorizes designation.
- To maintain designation, observer must conduct a minimum of 5 off-loadings/ year

DMC Operational Responsibilities

- Ensure sufficient trained observers are available for deployment.
- Ensure all company staff are aware of the "Code of Conduct" and will be held accountable for the actions of their staff
- Discipline employees who do not adhere to the Duties of a Dockside Observer.
- Respond to requests by DFO for hail-report information on a timely basis.
- Deployment of Observers to monitor offloading. The DMC will not authorise processors, buyers, fishers, or other parties not operating at arm's length from the fishing industry, to contact observers for deployment.
- DMCs, should, wherever possible, deploy Observers to the Fish Landing Station (FLS) on a rotational basis.
- Notify DFO immediately when there is potential conflict of interest for an Observer or the DMC
- Conduct ongoing evaluation of Dockside Observers. Where deficiencies are identified, the DMC shall take the necessary and appropriate action, possibly including but not limited to, refresher training.
- Ensure all DMP information and data collected from fishers is handled and protected in accordance with the provisions of the Privacy Act.

- Maintain all DMP data and files that take place in one calendar year, for two and one half subsequent years, and if required, provide data and files to DFO
- Notify DFO in the event a DMC terminates the employment of a dockside observer for disciplinary reasons related to the performance of their dockside observer duties
- Supply each Dockside Observer with the following:
    - List of Dockside Observer Duties
    - List of DFO contacts
    - List of Potential Incidents
    - DMP Protocols for calculating the weight of fish
    - Other DMP protocols and directives
    - Code of Conduct as outlined in the company's Quality System Manual

Duties of a Dockside Observer

Pre-Offloading

- Follow only the instructions of the DMC and approved monitoring procedures
- Record all information in clear legible printed format only, except in cases where a signature is required
- Present at Fish Landing Station minimum 15 minutes prior to offloading
- Ensure fish is offloaded and weighed at a fish landing station, government wharf or fish-buying company wharf
- Follow only DMC instructions of the DMC and approved procedures
- Record gear type, logbook weight by species, product type, and management area on the Weigh-out and Tally Sheet, the side number displayed on the vessel, and other additional information that may requested by DFO.
- Record the weight of fish only from scales that have been certified for use in trade (Weights and Measures Act and regulations)
- Establish that the captain will provide a safe method of entry into the hold. If there is no safe means to check the hold, Observers are not permitted to monitor the offloading, and must contact the DMC immediately.

Offloading

- Ensure the method of offloading for the species has been approved by DFO
- Verify through visual inspection the species and product form of all fish landed and offloaded and ensure this information matches the logbook
- Follow established protocols where applicable, satisfactory to DFO, for bulk or packaged offloads
- Ensure that where required by license, all fish is offloaded and weighed once an offloading begins
- Ensure unobstructed line of sight at all times between the vessel being offloaded and the scales
- Personally verify and record weigh-out information

Post-Offloading

- Conduct a thorough check of all the fish holds and containers on deck to ensure all fish have been offloaded
- Ensure all offloading documentation is accurate, complete and submitted to the DMC in a timely manner
- Provide DFO Fishery Officers with any requested catch monitoring information
- Where required, complete and submit an incident report as soon as possible but no later than 24 hours from the time the incident is suspected or detected.