

Northwest Atlantic Fisheries Organization



**Report of the Fisheries Commission
Ad hoc Working Group to Reflect on the Rules Governing Bycatches, Discards and
Selectivity in the NAFO Regulatory Area**

7-8 July 2014
Dartmouth, Nova Scotia, Canada

NAFO
Dartmouth, Nova Scotia, Canada
2014

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1. Opening

The Fisheries Commission (FC) Chair Sylvie Lapointe (Canada) opened the meeting at 0930 hrs on Monday, 7 July 2014 at the NAFO Headquarters in Dartmouth, Nova Scotia, Canada.

Representatives from Canada, Denmark (in respect of the Faroe Islands and Greenland) (DFG), European Union (EU), Japan, Norway, the Russian Federation, and the USA were in attendance. Observers from Ecology Action Centre and World Wildlife Fund were in attendance (Annex 1).

It was noted that this WG as the name implies deals with bycatch, discards, selectivity which have significant science component; and that the Scientific Council (SC) should be adequately represented at this WG. In the absence of the SC Chair, the SC Coordinator, Neil Campbell was asked to attend the meeting.

2. Appointment of Rapporteur

Ricardo Federizon (NAFO Secretariat) was appointed Rapporteur.

3. Adoption of Agenda

The agenda as previously circulated was adopted (Annex 2).

4. Review of Terms of Reference (FC Doc 13/25)

The terms of reference (ToR) of this ad hoc WG as documented in FC Doc 13/25 were reviewed. There was no need to revise the document.

5. Discussion on the document *FAO International Guidelines on Bycatch Management and Reduction of Discards*

The Secretariat presented the document *FAO International Guidelines on Bycatch Management and Reduction of Discards* (Annex 3). The Guidelines were developed during the FAO Technical Consultation Meeting in Rome in 2010 and endorsed by the FAO Committee on Fisheries at its meeting in Rome, Italy in February 2011. The Guidelines are intended to assist States and Regional Fisheries Bodies like NAFO.

Sections of the Guidelines and their specific provisions were identified and highlighted in the presentation --- Management Framework, Bycatch Management Planning, Data Collection and Bycatch Assessments; Research and Development; Measures to Manage Bycatch and Reduce Discards, and Monitoring Control and Surveillance (MCS)—as these were deemed relevant to NAFO. In the section of Data Collection and Bycatch Assessment, for example, the importance of standardized logbooks and VMS data, as well as observer programs was stressed.

The WG was in agreement that NAFO policies and measures concerning bycatch and discards should be in alignment with international instruments such as the *FAO International Guidelines on Bycatch Management and Reduction of Discards*. It became known that FAO currently does not have a monitoring program on the implementation of the Guidelines; but NAFO could inform FAO about its initiative in this regard.

6. Discussion on flag State practices concerning bycatch, discards and selectivity

Presentations were made by some Contracting Parties (CPs) on their bycatch and discard policies and practices (Annex 4).

The Canadian presentation described the range of measures and tools used domestically in addressing the bycatch and discard issues. One of the key underlying principles is effective accounting for all catch including bycatch and non-retained catch. Bycatch and discard issues are generally fisheries-specific and fisheries-specific solutions are developed with stakeholders based on a suite of tools and measures.

The EU presentation was about the landing obligation in the new EU Common Fisheries Policy. The scope covers all catches under TAC management and implementation of the new policy for North Sea and Atlantic waters starts in 2016 and implementation will be gradual to be fully in place in 2019.

The Norwegian presentation focused on the Norwegian policy in this regard, history and the basic ideas. Discard ban was first introduced in Norwegian fisheries in 1987 in fisheries on cod and haddock in the Barents Sea. Since then the ban has been expanded and developed and now there is a general discard ban in Norwegian fisheries. The discard ban itself is an important political statement, but at the same time it is recognised that there is a need for supporting mechanisms to help the fishermen to avoid to be set in a situation where they feel a need to discard. The whole management system needs to be designed in a way that will counter the discards. Taking account of the dynamics of the fishing industry the management system needs to be in a continuous development.

USA informed that it uses a variety of tools including, but not limited to, effort controls, catch limits on target and bycatch species, minimum fish size, gear requirements (e.g. mesh size and gear modifications to enhance selectivity), gear restricted areas, area closures, electronic monitoring (video cameras), full retention, measures to improve survivability of catch and discards (e.g. specific handling practices).

DFG informed that in the Faroese fisheries discards are prohibited and all fish must be landed. This policy has been in place since 1994.

The WG found the presentations to be informative and they formed a good basis for discussion. The WG encouraged CPs to continue the information sharing regarding their policies and best practices on catch and discards.

7. Review and Discussion of NAFO Conservation and Enforcement Measures (NCEM) provisions governing bycatch, discards and selectivity

The Secretariat made a presentation on bycatch and discards in the NAFO Regulatory Area. It highlighted the specific provisions in the NCEM that governs bycatch and discards. The presentation reported on the results of the qualitative and quantitative analysis using the 2013 daily catch reports (CATs) as the data source. Bycatch of major stocks (cod, redfish, Greenland halibut, yellowtail, and skates) on the Flemish Cap and at the Tail and Nose of the Grand Banks, as well as temporal variability of bycatch and discards were presented. The need for consistency in the use of terms and clarity in the intent of meaning in the NCEM was also stressed (Annex 5).

The WG appreciated the significance of the information that was presented by the Secretariat. The following were some of the highlights of the observations and issues that emanated from the presentation:

- There were higher incidences of bycatch in certain fisheries and areas. Furthermore, in some instances, there also appears to be a temporal component. For example, Greenland halibut is a relatively “clean” fishery compared to Thorny skate which has high a bycatch of cod and American plaice (which are under moratorium), as well as yellowtail flounder. In the Flemish Cap, the amounts of the redfish bycatch of the cod fishery, and vice versa, suggest that these two stocks constitute a mixed fishery. It was noted that further analysis in these areas should be considered.

- The presence of some bycatch anomalies was observed, for example, bycatch consisting of witch flounder and skates in the Flemish Cap, which are currently unregulated. It was suggested that future analysis pay particular attention to such anomalies and any related trends.
- The discard analysis relied on the “rejects” information contained in the CAT reports as they are the only available quantitative information on discards in the NAFO Regulatory Area. Due to the limited data available, the WG expressed concern that the reported quantities may not reflect the true magnitude of the actual discards. More generally, there appears to be concerns about how discards are accounted for. The reasons for discards seem complex. Further analysis would be necessary to understand the different factors influencing discards.
- Some CPs commented that the bycatch and discard analysis could have produced more useful results with the tow-by-tow data (gleaned from fishers’ logbooks), which would allow the identification of precise areas and fisheries encountering bycatch. Alternatively, CAT reports only provide information on a broad level (i.e. Division taken and other species caught during the same day).

Other CPs suggested that the use of CAT data in the bycatch and discard analysis as presented by the Secretariat was sufficient for this purpose (the tow-by-tow data are not forwarded to the Secretariat). Some CPs 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).

The debate – whether CPs forward tow-by-tow data to the Secretariat – remains unresolved. It was noted the similar debates have ensued in other fora, e.g. at WG Catch Reporting for catch estimation purposes, and at STACTIC for the purpose of evaluating compliance of catch reporting requirements. In this regard, recommendations in addressing this issue were drafted (see Recommendations 6 and 8 in item 8).

A proposal to amend Article 5, specifically the sub-articles relating to retaining the catch of the fish stocks after their fishery closure was brought forward by the Russian Federation (FC-BDS WP 14/1). Some CPs noted concerns with the proposal, in particular the potential for 3M Redfish catch to exceed the TAC. There was a brief discussion as to whether the overall TAC for managed species, particularly 3M Redfish, should include both retained and discarded catch. It was subsequently noted by one CP that the NCEM currently include discards in the TAC/quota. Another CP noted that there are different possible interpretations on counting discards and that some provisions of the NCEM can be interpreted as if discards are not counted against the quotas. Several CPs observed that current management regime for 3M Redfish may be contributing to discards of this stock, as it may reduce CP’s ability to effectively manage bycatch because some CPs have been allocated more quota than the scientifically-derived TAC. Although the WG was unable to come to a consensus on this proposal, other approaches to improve or reform the current system were briefly discussed, including: setting aside a portion of the TAC explicitly for bycatch; spreading the TAC across a larger time period (e.g. quarterly allocation); and reducing allocations to align their total with the TAC. Some CPs noted that the Russian proposal had greater implications and must be scrutinized in connection with other articles in the NCEM; and that this WG was not the appropriate body to deliberate on the proposal. It was suggested that proposals like this should be presented in Fisheries Commission/STACTIC.

Under the general discussion on how to manage bycatch and reduce discards, EU presented a discussion paper (FC BDS WP 14/02) entailing three general steps: 1) determining the dimension of the problem, 2) identifying NCEM provisions and other factors that might incentivize discards, and 3) identifying potential management measures. The working paper was not adopted by the WG but provided a basis for discussion, in particular on the dimension of issues related to discards and contributed to the identification of specific recommendations to FC (outlined in item 8).

8. Recommendations to forward to the Fisheries Commission

Noting the negative impacts that bycatch and discards may have on regulated species in the NAFO Regulatory Area, it is **recommended**:

1. that the Fisheries Commission continue to address this issue by inter alia allowing this WG to continue;
2. that the objectives of this Working Group focus on effective management of bycatch and minimization of discards in the NAFO Regulatory Area, to the extent practicable, by recommending appropriate policy and regulatory changes that recognize the diverse factors influencing and incentivizing by-catch and discards in each fishery, the current biological status of affected species, and domestic legislation affecting by-catch and discards;
3. that the Fisheries Commission consider amendments to the management measures and approach for managing 3M redfish fishery that address factors promoting discards;
4. that the FC task STACTIC to support the WG as necessary including the development of standardized language for by-catch and discards throughout the CEM, including clarifying ambiguous or inconsistent terminology;
5. that the FC include SC on this issue as necessary through this WG. To start with the FC-SC dialogue will give specific consideration to the discussions of this WG;
6. that the Secretariat continue to analyze data about bycatch and discards in NAFO fisheries. The analysis in particular should identify areas and fisheries of concern; identify anomalies and trends regarding bycatch and discards; and give priority to species under moratorium or instances where there may be conservation issues;
7. that Contracting Parties continue to share available information on domestic practices and/or policies to address bycatch and discards;
8. that the FC give further consideration to improving bycatch and discards data availability and quality, including options already identified in other NAFO bodies. This would be made available to the Secretariat, SC and the WGs of the FC and SC for the purpose of undertaking bycatch and discard analysis;
9. that the FC work jointly with SC to task appropriate NAFO bodies to develop a draft definition of bycatch and to compile a draft list of bycatch species per GC Action Plan (GC Doc 12/1).

9. Other Matters

No other matter was discussed.

10. Adoption of the Report

This report was adopted through correspondence after the meeting.

11. Adjournment

The meeting was adjourned at 1600 hrs, Tuesday 8 July. The Chair thanked the meeting participants for their cooperation and input and the Secretariat for the support. The participants likewise expressed their thanks and appreciation to the presiding Chair for her leadership.

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Report of the FC WG-BDS
7-8 July 2014

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Annex 2. Agenda

1. Opening
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of Terms of Reference (FC Doc 13/25)
5. Discussion on the document FAO International Guidelines on Bycatch Management and Reduction of Discards
6. Discussion on flag State practices concerning bycatch, discards and selectivity
7. Review and Discussion of NAFO Conservation and Enforcement Measures (NCEM) provisions governing bycatch, discards and selectivity
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Annex 3. FAO Guidelines



Intro - Management Framework - Bycatch Management Planning - Data Coll. & Assessment - R & D - Bycatch Measures - MSC

International Guidelines on Bycatch Management and Reduction of Discards

- Developed and adopted by the FAO Technical Consultation, Rome 2010
- Purpose: assist States and RFMO/As in implementing ecosystem approach to fisheries (EAF) and UNGA Resolution 64/72
- Endorsed by COFI at its meeting in February 2011

FAO/NAFO Bycatch Consultation, 2010, 2-8 July 2014

Intro - Management Framework - Bycatch Management Planning - Data Coll. & Assessment - R & D - Bycatch Measures - MSC

Sections of the Guidelines relevant to NAFO as a RFMO

- Management Framework
- Bycatch Management Planning
- Data Collection and Bycatch Assessment
- Research and Development
- Measures to Manage Bycatch and Reduce Discards, and
- Monitoring, Control and Surveillance (MCS)

FAO/NAFO Bycatch Consultation, 2010, 2-8 July 2014

Intro - Management Framework - Bycatch Management Planning - Data Coll. & Assessment - R & D - Bycatch Measures - MSC

Management Framework

3.2.4 States and RFMO/As should:

- develop/amend management plans
- promote incentives to encourage compliance

3.2.5 States should

- strengthen and build the capacity of RFMO/As.

3.2.6 Compatibility of measures in EEZ and ABNJ.

FAO/NAFO Bycatch Consultation, 2010, 2-8 July 2014

Intro - Management Framework - Bycatch Management Planning - Data Coll. & Assessment - R & D - Bycatch Measures - MSC

Bycatch Management Planning

4.1. States and RFMO/As should

- ensure all significant sources of fishing mortality are addressed in the planning,
- identify and assess fisheries where bycatch/discards occurs and specify requirements for management actions,
- ensure bycatch management planning are incorporated into broader fisheries management plans,
- ensure best practices in cooperation with relevant stakeholders.

FAO/NAFO Bycatch Consultation, 2010, 2-8 July 2014

Intro - Management Framework - Bycatch Management Planning - Data Coll. & Assessment - R & D - Bycatch Measures - MSC

Data Collection and Bycatch Assessments

5.1.1 RFMO/As should

- establish monitoring and assessment techniques,
- implement data collection procedures including use of observers, standardized logbooks and VMS.
- strive to achieve a level of observer programs sufficient to provide quantitative estimates.

FAO/NAFO Bycatch Consultation, 2010, 2-8 July 2014

Intro · Management Framework · Bycatch Management Planning · Data Coll. & Assessment · **R & D** · Bycatch Measures · MSC

Research and Development

RFMOs should

6.1 conduct and promote research — biology, fishing gears, economic consequences.


 FL sublin: WG Bycatch, Discards and Sustainability | Dartmouth, NS, 7-8 July 2014

Intro · Management Framework · Bycatch Management Planning · Data Coll. & Assessment · R & D · **Bycatch Measures** · MSC

Measures to Manage Bycatch and Reduce Discards

7. RFMOs should

- ensure that measures are binding, measurable, science-based, enforceable, fully implemented.
- utilize a range of tools
 - input/output controls,
 - bycatch limits,
 - ban on discards,
 - fishing gear improvements,
 - spatial and temporal measures,
 - incentives for fisheries for compliance.

 FL sublin: WG Bycatch, Discards and Sustainability | Dartmouth, NS, 7-8 July 2014

Intro · Management Framework · Bycatch Management Planning · Data Coll. & Assessment · R & D · Bycatch Measures · **MSC**

Monitoring, Control and Surveillance (MCS)

9. RFMOs should where appropriate and to the extent possible

- require reporting of all relevant information related to bycatch and discards,
- undertake MCS of all relevant fishing operations, including handling on board and landings at ports
- may include inspections of fishing vessels and gear
- encourage participation of fishers in policy development.

 FL sublin: WG Bycatch, Discards and Sustainability | Dartmouth, NS, 7-8 July 2014

FAO International Guidelines on Bycatch Management and Reduction of Discards

Thank you!

 FL sublin: WG Bycatch, Discards and Sustainability | Dartmouth, NS, 7-8 July 2014


Annex 4. CP presentations on domestic bycatch and discards policies

Canada:

2587553

Management of Bycatch and Nonretained Catch in Canada

Northwest Atlantic Fisheries Organization
July 7-8, 2014
Halifax, Nova Scotia



Fisheries and Oceans Canada Pêches et Océans Canada

Management of Bycatch and Discards in Canada

Increased International Attention on Bycatch and Discards

- Effective accounting for all catch including bycatch and non-retained catch is a key to sustainable fisheries and an ecosystem approach.
- Concerns persist that levels of fishing mortality on bycatch in some of the world's fisheries is threatening fish stocks and biodiversity.
 - In 2004, FAO estimated that discarded global catch was 7 million tonnes
- This has led the FAO to develop International Guidelines for Bycatch Management and Reduction of Discards (2011). Canada endorsed the guidelines.

2 Fisheries and Oceans Canada Pêches et Océans Canada

Management of Bycatch and Discards in Canada

Bycatch Management is Part of Canada's Sustainable Fisheries Framework

- Canada is committed domestically and internationally to implementing conservation and management measures to address bycatch and discards.
- Canada is implementing an overarching policy framework – the Sustainable Fisheries Framework – to manage the impacts of fishing on
 - Target catches
 - Bycatch and discards
 - Seafloor habitats
- In 2013, Canada introduced a policy on managing bycatch, which builds on the successes and best practices in Canadian fisheries and elsewhere.

3 Fisheries and Oceans Canada Pêches et Océans Canada

Management of Bycatch and Discards in Canada

Bycatch Management: Best Use of a Range of Measures and Tools (1)

- Bycatch and discard issues, where they occur, are generally fishery-specific, and require fishery-specific solutions.
- Experience shows that the most durable and effective solutions are those developed with harvesters.
- Canada works with harvesters to tailor solutions to the specific problem, with the aim of managing the fishery so that the total catch and any discards are within conservation limits.
- Measures include avoiding bycatch, and managing bycatch when unavoidable. At-sea monitoring helps ensure measures are achieving the desired results.

4 Fisheries and Oceans Canada Pêches et Océans Canada

Management of Bycatch and Discards in Canada

Bycatch Management: Best Use of a Range of Measures and Tools (2)

Measures to avoid bycatch:

- time and area closures to limit bycatch of small fish and species or stocks of concern
- gear and fishery modifications to improve selectivity, such as
 - the *Nordmore* grate in the shrimp trawl fishery significantly reduce bycatch of groundfish
 - Minimum mesh size to avoid high catches of juvenile fish
 - Gear restrictions on midwater trawl (e.g., attachments)
 - Limits on bycatch amounts including move-away rules
- transferable quotas to access non-target catch and reduce discards

5 Fisheries and Oceans Canada Pêches et Océans Canada

Management of Bycatch and Discards in Canada

Bycatch Management: Best Use of a Range of Measures and Tools (3)

Where bycatch is unavoidable:

- Required release of species at risk and others for conservation reasons
 - Fish are returned to the sea for various reasons; not all discards are the same
 - Required live release of fish less than minimum size (e.g., Atlantic cod)
 - Live release of species at risk
- Limits to keep bycatch within conservation
- Discard bans
- Practices to maximize post-release survival
- Accurate reporting of total catch (retained and unretained)

6 Fisheries and Oceans Canada Pêches et Océans Canada

Management of Bycatch and Discards in Canada



Case Examples: Canada's Atlantic Groundfish Fishery

- Temporal / spatial closure in response to high levels of American plaice bycatch in Greenland halibut fishery (30 day closure of Management area 3Ld)
- Seasonal spawning closure for yellowtail flounder developed in consultation with industry and science

7  Fisheries and Oceans Canada Pêches et Océans Canada 

Management of Bycatch and Discards in Canada

Thank you

8  Fisheries and Oceans Canada Pêches et Océans Canada 

European Union:



Landing obligation in the new EU Common Fisheries Policy

Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the **Common Fisheries Policy**, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC

(Official Journal L354 of 28 December 2013)

July 2014

New Common Fisheries Policy of the EU: the landing obligation

- gradual introduction: start in 2015, end 2019
- cover all commercially managed catches
- implementation through multiannual or discard plans



European Commission

scope

- landing obligation for all catches under TAC – management
- respect international obligations

gradual introduction

- 2015: pelagic & industrial fisheries,
- 2015-17: Baltic Sea
- 2016-2019: North Sea and EU-Atlantic waters
- 2017-2019: Mediterranean, Black Sea, other waters/species



European Commission

Exemptions: allowance to return to the sea


- prohibited and surviving species (scientific evidence)
- limited % of catches allowed to be discarded under *de minimis* (7%)
 - where no further selectivity is feasible
 - where handling costs are excessive

Quota management / flexibility

- max 9 % catches of non-target species counted against quota of target species
- max 10 % inter-annual banking & borrowing

Undersized fish

- to be landed,
- marketed for non-human consumption only



European Commission

Exemptions: allowance to return to the sea

- prohibited and surviving species (scientific evidence)
- limited % of catches allowed to be discarded under *de minimis* (7%)
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- max 9 % catches of non-target species counted against quota of target species
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Undersized fish

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- marketed for non-human consumption only



European Commission

Norway:**Discard Policy
Two approaches**

- Prohibited to **land** "illegal" fish
- Prohibited to **catch** "illegal" fish

**Discard Policy**

- Historical development
- Main elements

**When do fishermen discard?
Unwanted mortality****In the Sea**

- Slipping
- Ghost Fishing
- Burst nets
- Other reasons

On board

- Undersized fish
- High grading
- To large catches for production
- Bycatch (not targeted)
- Bycatch (non commercial species)
- Other reasons

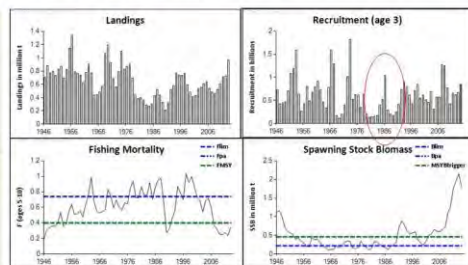
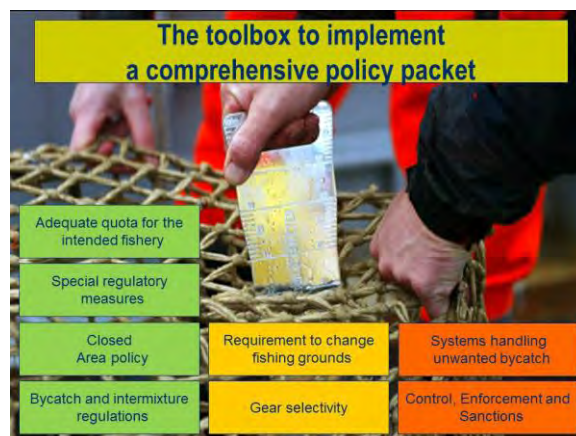
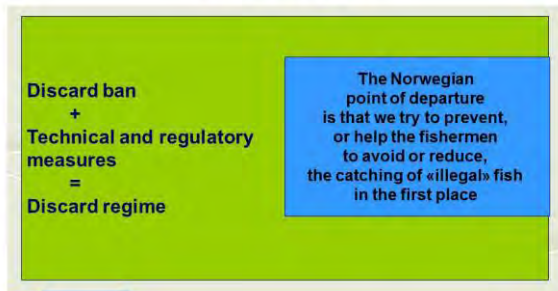
**North-East Arctic Cod, development in stock size and catches**

Figure 3.3.2.1 Cod in Subareas I and II: Summary of stock assessment (weights in thousand tonnes). Top right: SSB/B for the time-series used in the assessment ($B_{0.95}$ equal to MSY $B_{0.95}$, $F_{0.95}$ equal to $F_{0.95}$).

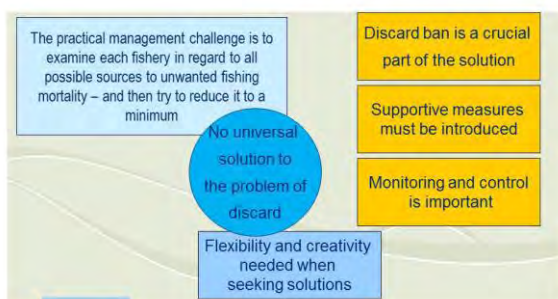
**The Historical Development****Systematic area closures****Technical regulations****Discard ban****Severe reduction in TAC**



Discard regime



Summary



• Thank you

USA:

The following represents a list of the primary measures to help minimize by-catch and discards in domestic fisheries.

- Effort controls in some fisheries (number of access area trips and days-at-sea controls)
- Minimum fish sizes
- Minimum mesh/gear sizes
- Quotas for target and by-catch species
 - Accountability measures (closures, quota adjustment, gear requirements, possession limit restrictions) once exceeded
 - Quota trades to account for overages
 - Carry-over provisions for unharvested catch
 - Set-aside quotas for bycatch
- Net dumping prohibitions (herring), with trips terminated if nets are dumped
- Gear modifications (species/fishery-specific and area based)
 - Nordmore grate
 - Weak link, neutral buoyant line, fewer vertical lines, etc. for whales
 - Raised footrope trawl, separator trawls, extended headrope trawls
- Gear restricted areas in which only selective gear can be used
- Area closures
 - Seasonal
 - Area-specific, including habitat and high-bycatch areas
 - Spawning
 - Rotational areas to periodically reduce fishing impact on benthic species
- Electronic monitoring (video cameras) to address 2 primary objectives:
 - Document compliance with discard and net dumping prohibitions
 - Quantify discards in particular fisheries (bottom longline groundfish)
- Full retention of legal-sized fish
- Specific handling practices to improve survivability of bycatch and discards
 - Resuscitation
 - Prioritization of species returned to sea to maximize survival

Annex 5. NAFO Secretariat Presentation: Groundfish bycatch in the NAFO Regulatory Area

NCEM provisions · Species Association · GHL · COD · RED · YEL · SKA · Retention · Discards · Concepts · Concluding Rem.

Groundfish Bycatch in the NAFO Regulatory Area

(by the Secretariat)
Agenda item 7

NCEM does not provide exact definition of *bycatch*.

Directed Fishery – Art. 5.2 (a): *the species which comprises the largest percentage by weight of the total catch in the haul shall be considered as being taken in a directed fishery for the stock concerned.*

- After the species with the largest percentage is identified in a single haul, is the rest of the catch considered *bycatch*?



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Art. 6.1 – to the extent possible, each CP shall ensure its vessels *minimize by-catch of species from stocks identified in the Quota Table*.

Species/Stocks in the Quota Table*: **COD, RED, PLA, YEL, WIT, HKW, CAP, SKA, GHL, SQL, PRA.**

Art. 6.2 –A species listed in the Quota Table* shall be classified as bycatch where any of the situations exist:

- No quota has been allocated to that CP;
- Moratorium for a particular stock is in force;
- “Others” quota has been fully utilized.

Does this situation apply? Quota had been allocated and fully utilized by CPs. Date after notification of closure when quota uptake reached 100%.



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By- catch limits (Art. 6.3.a – 6.3.e.)

- For 3M Cod and 3LN Red: 1250 kg or 5%, whichever is the greater.
- For 3NO Cod: 1000 kg or 4%, whichever is the greater.
- For all other QT stocks where no quota has been allocated to flag States: 2500 kg or 10%, whichever is the greater.
- Stocks under moratoria and fully utilized “Others”: 1250 kg or 5%, whichever is the greater.

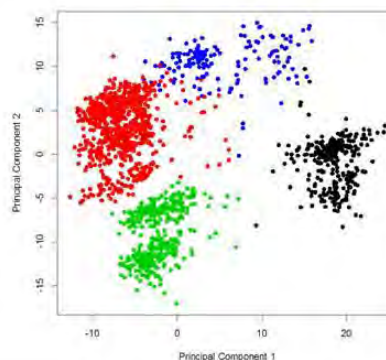
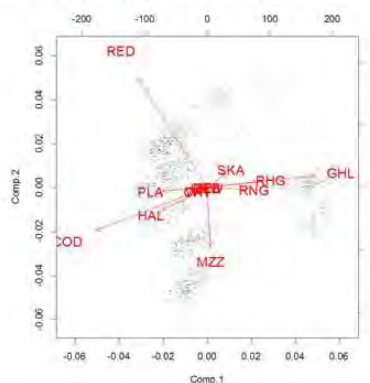
Additionally,

- For 3LNO PLA in YEL fishery: 15% (Footnote 21 of QT)

Method of % percentage is prescribed in Art. 6.4.

Percentages and limits apply to both **move-away** and **retention** provision.

FC adhoc WG Bycatch, Discards, and Selectivity, Dartmouth, NS, 7-8 July 2014

NCEM provisions · **Species Association** · GHL · COD · RED · YEL · SKA · Retention · Discards · Concepts · Concluding Rem.**Species Association in Division 3M – The Cap.***Principal Component Analysis.* Material: 2013 CAT reports**N.B.***In Flemish Cap, GHL is identified as “clean” fishery, although grenadiers as occasional bycatch.*

Legend :

Black – GHL

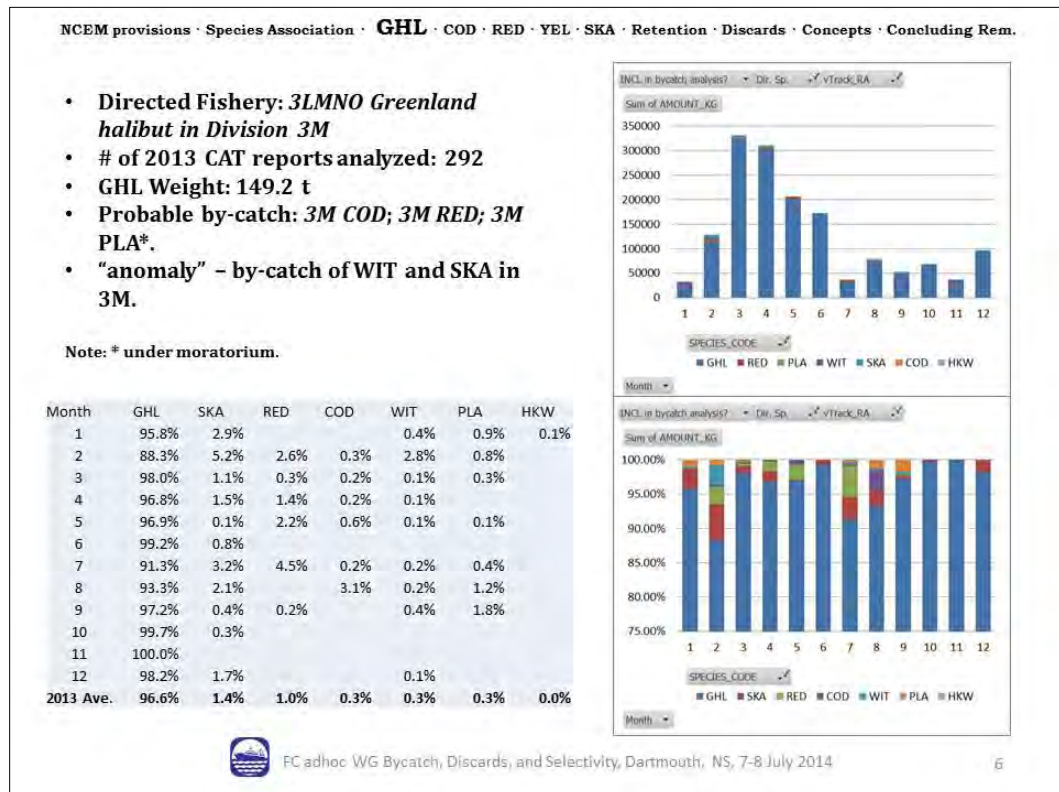
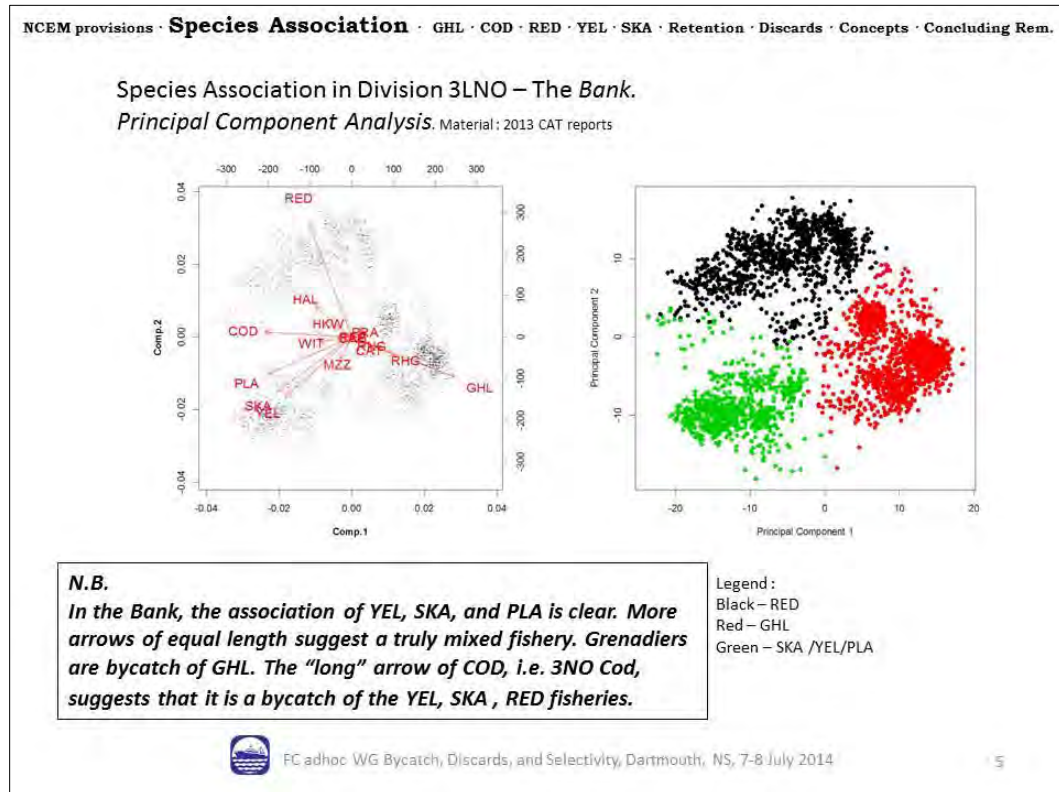
Blue – RED/GHL

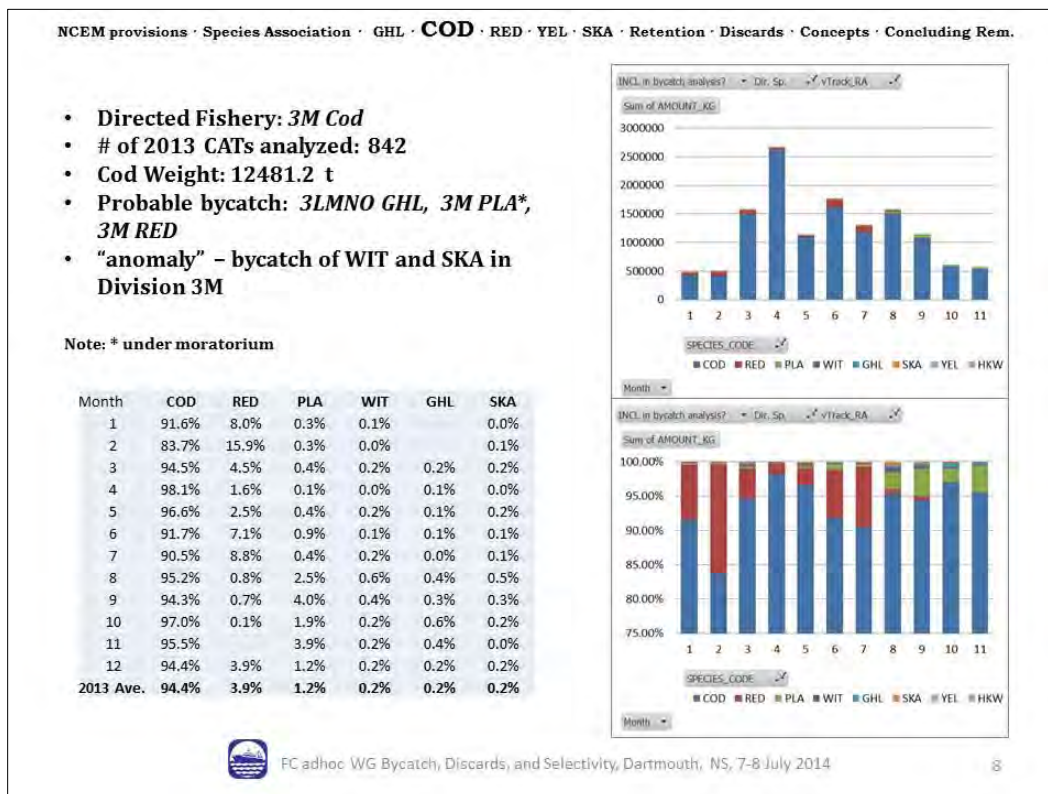
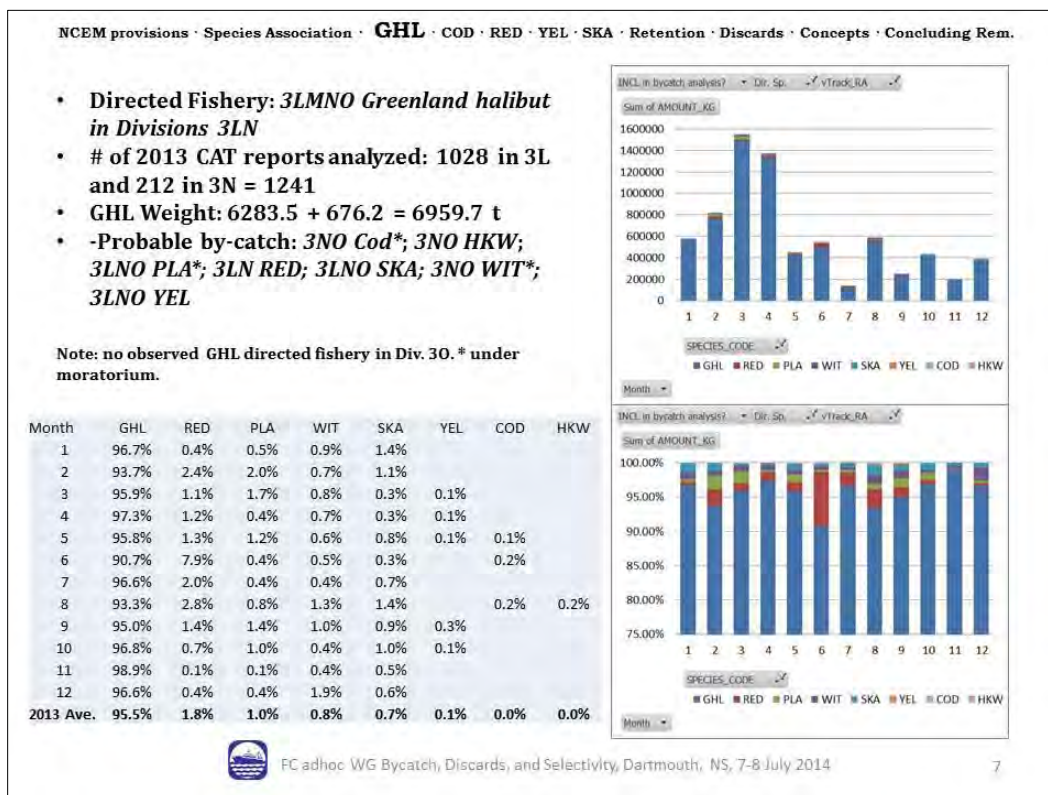
Red – RED/COD

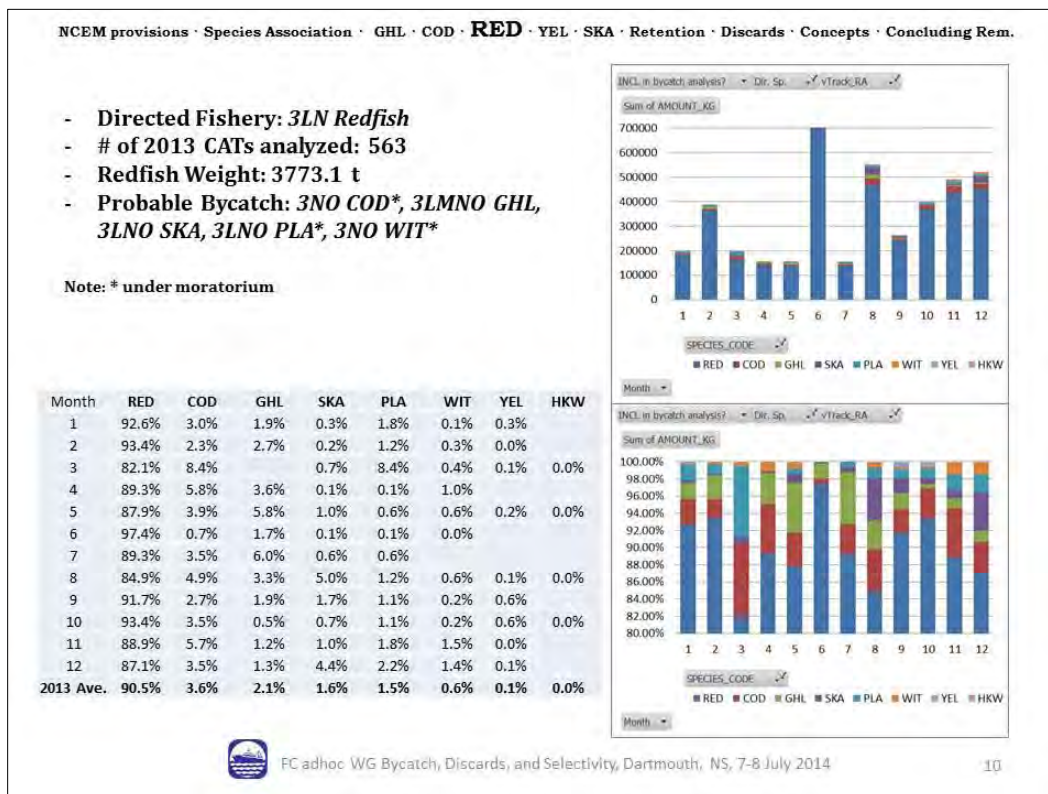
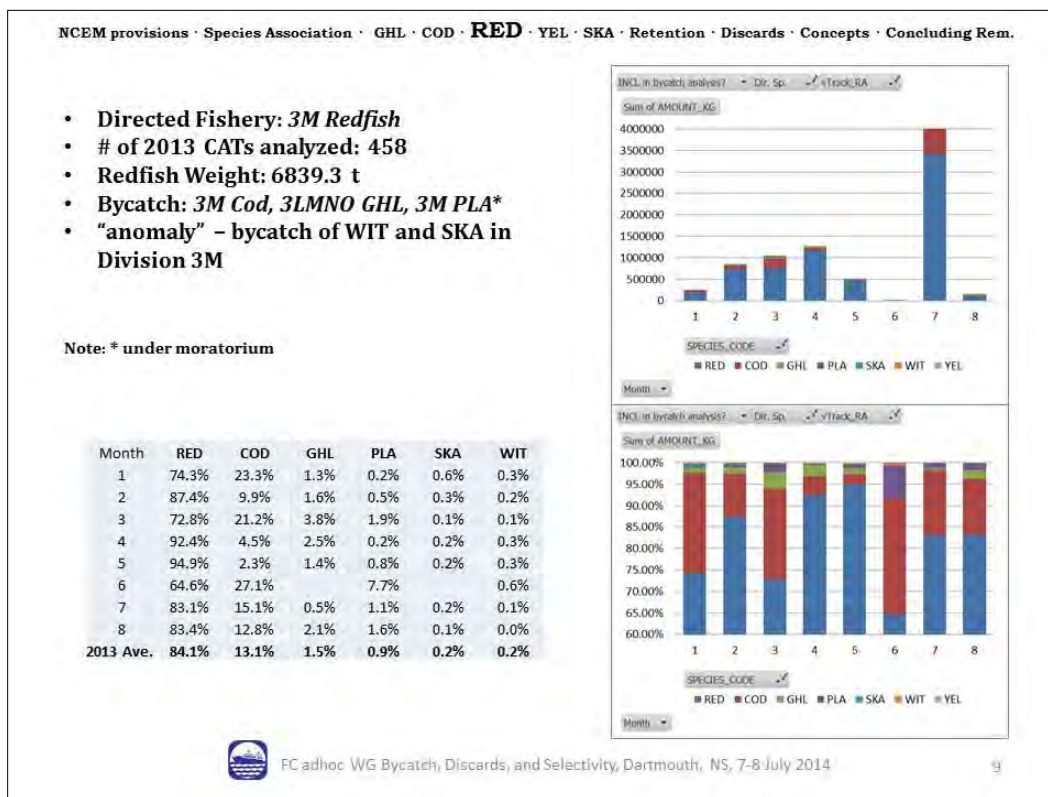
Green – COD/MZZ

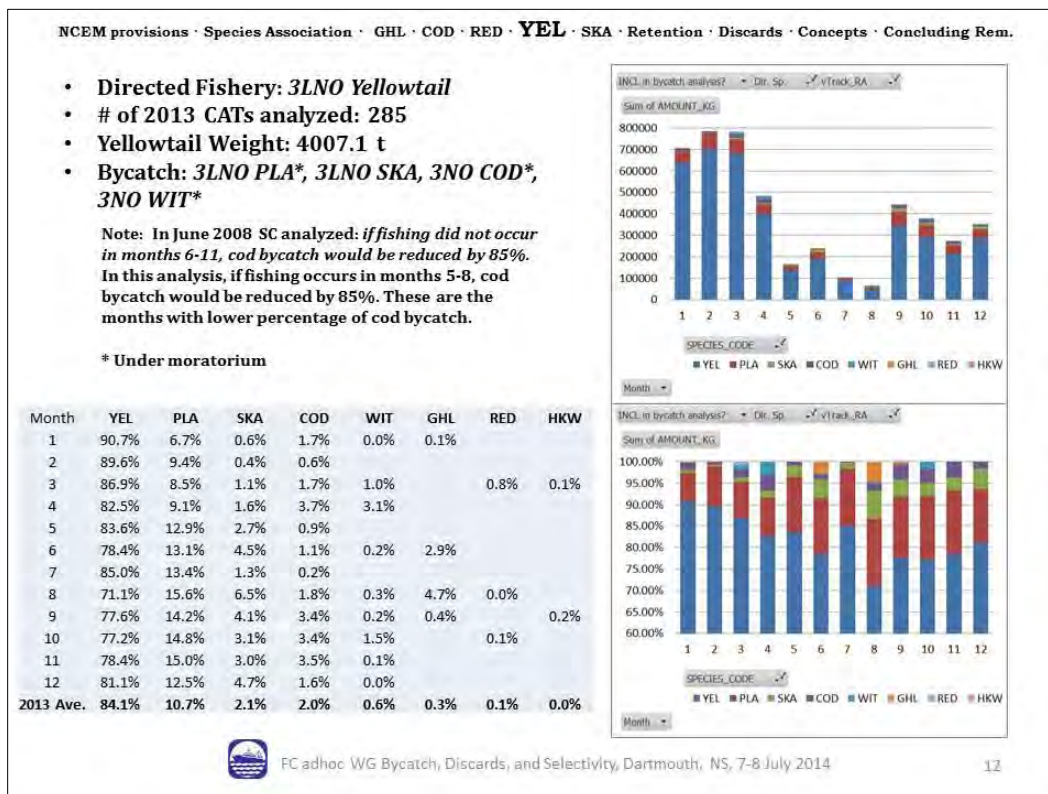
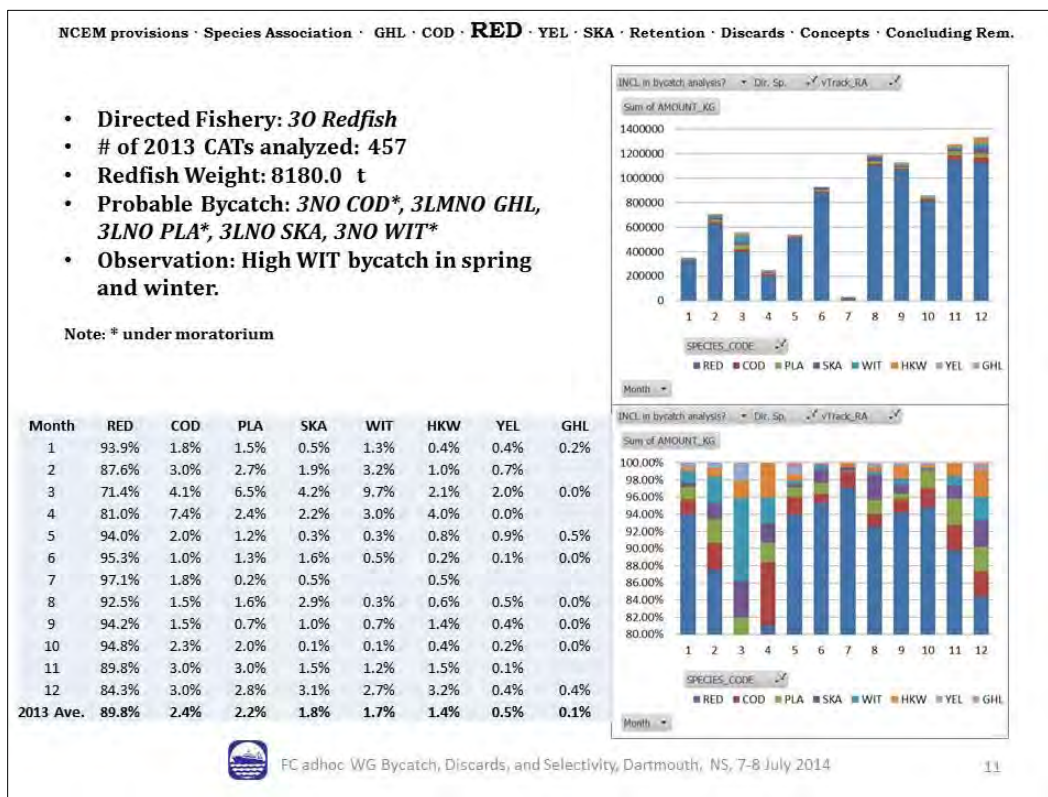


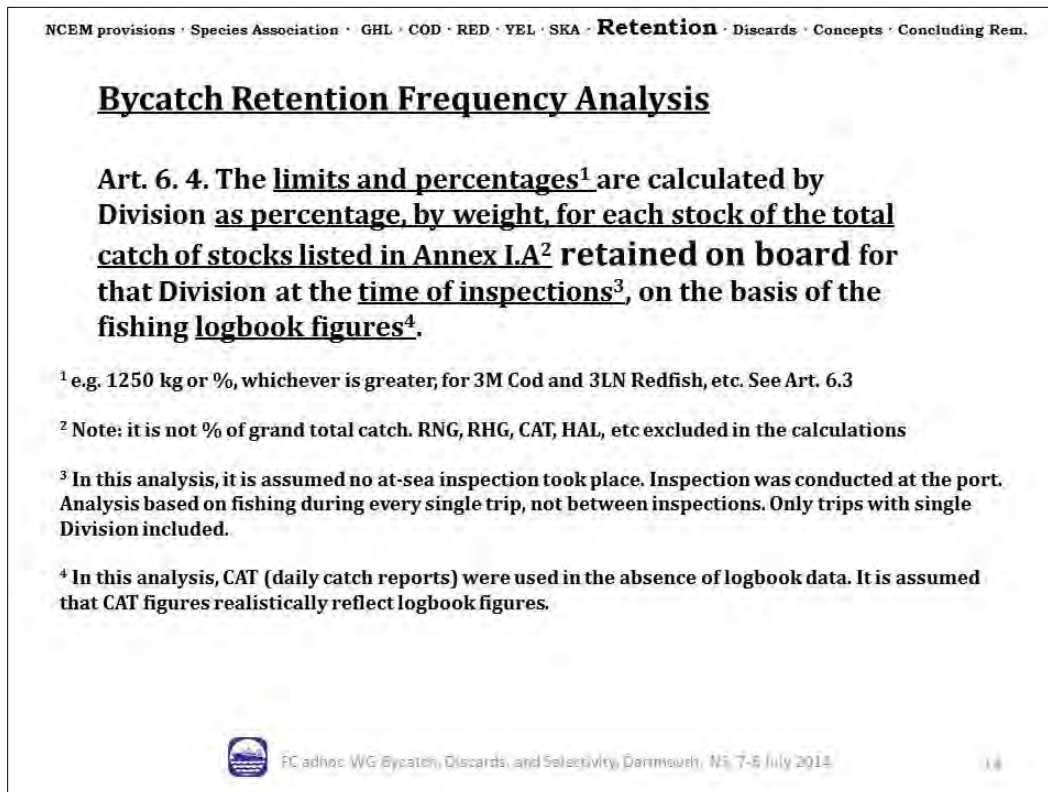
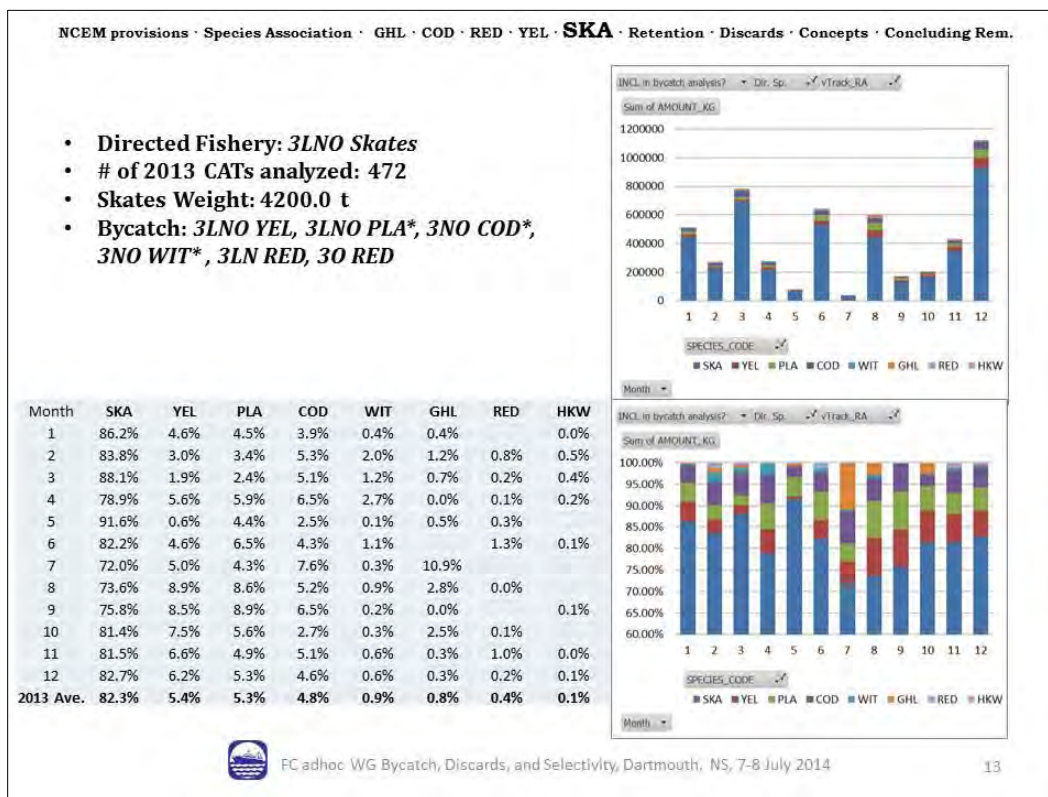
FC adhoc WG Bycatch, Discards, and Selectivity, Dartmouth, NS, 7-8 July 2014











NCEM provisions · Species Association · GHL · COD · RED · YEL · SKA · **Retention** · Discards · Concepts · Concluding Rem.

Retention Bycatch frequency analysis

trips = 59; fishing days = 658 [160 trips; 4779 days grand total]

Total weight of total of species in Annex 1= 10, 926 t [57 087 t grand total]

Fishing trips occurring in single Divisions (Relevant Areas): 3L, 3M, 3N

Directed Species: COD, GHL, RED, YEL

D.S.	Div.	Stock	# trips	Comments
COD	3M	3M Cod	30	One case of 3M Red at 13%, but 3M red fishery was still open. So, no indication of bycatch retention infringement.
GHL	3M	3LMNO GHL	1	No indication of bycatch retention infringement.
GHL	3L	3LMNO GHL	6	"
RED	3M	3M Redfish	1	"
RED	3L	3LN Redfish	1	One case 26% YEL. Flag State has no YEL quota. Art. 6.2.a applies. Therefore possible infringement.
YEL	3N	3LNO Yellowtail	20	No indication of bycatch retention infringement.

Note: in 2013, 1 case of bycatch (move-away) AI issued at-sea.

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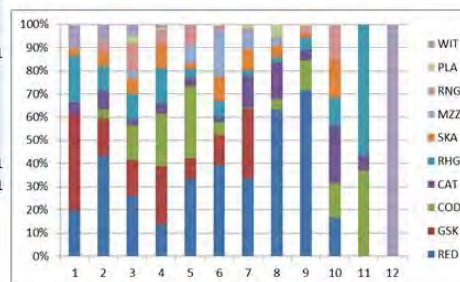
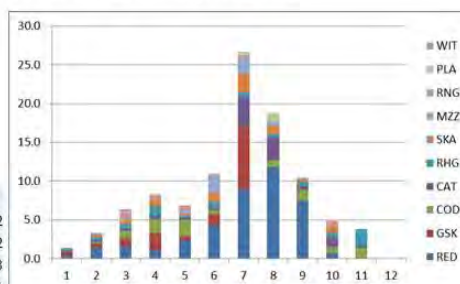
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Discards. Source of information – RJ (Rejects) field in the Daily Catch Reports (CATs)

Division 3M Top Ten
Discards in 2013 (t)

	RED	GSK	COD	CAT	RHG	SKA	MZZ	RNG	PLA	WIT
1	0.3	0.6		0.1	0.3	0.1				0.2
2	1.5	0.5	0.1	0.3	0.4	0.2		0.2		0.2
3	1.7	1.0	1.0	0.2	0.7	0.4	0.2	0.8	0.2	0.3
4	1.1	2.1	1.9	0.4	1.3	0.8		0.5	0.1	0.1
5	2.3	0.6	2.1	0.3	0.2	0.2	0.5	0.6		
6	4.3	1.4	0.6	0.2	0.8	1.2	2.1	0.3	0.1	
7	8.9	8.0	0.1	3.7	0.6	2.4	2.1	0.3	0.4	0.1
8	11.9		0.8	3.0	0.4	1.0	0.6	0.1	1.0	
9	7.5		1.4	0.5	0.5	0.2		0.3	0.1	
10	0.8		0.7	1.2	0.6	0.8		0.7		
11			1.4	0.3	2.2					
12										0.1
Total	40.3	14.2	10.2	10.1	7.9	7.4	5.5	3.8	1.9	1.1

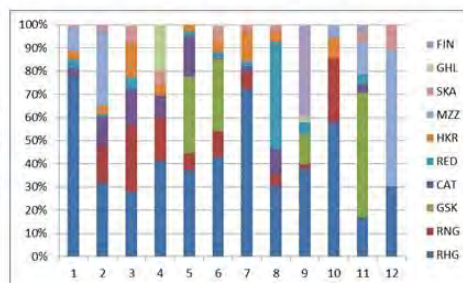
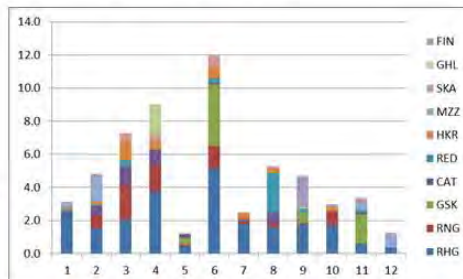


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NCEM provisions · Species Association · GHL · COD · RED · YEL · SKA · Retention · **Discards** · Concepts · Concluding Rem.**Discards.** Source of information – RJ (Rejects) field in the Daily Catch Reports (CATs)Division 3L Top Ten
Discards in 2013 (t)

	RHG	RNG	GSK	CAT	RED	HKR	MZZ	SKA	GHL	FIN
1	2.4	0.0		0.1	0.1	0.1	0.3	0.0		
2	1.5	0.8		0.6	0.1	0.2	1.6	0.1		
3	2.0	2.1		1.1	0.4	1.1		0.5	0.1	
4	3.7	1.7		0.9		0.4		0.5	1.8	
5	0.5	0.1	0.4	0.2	0.0	0.0				
6	5.1	1.4	3.7	0.1	0.3	0.6		0.7	0.1	
7	1.8	0.2		0.1	0.1	0.3		0.1		
8	1.6	0.3		0.6	2.4	0.2		0.2		
9	1.8	0.1	0.6		0.2		0.0		0.1	1.9
10	1.7	0.8				0.3	0.2			
11	0.6		1.8	0.1	0.1		0.5	0.1	0.0	0.1
12	0.4						0.7	0.1		
Total	23.2	7.4	6.5	3.8	3.7	3.3	3.3	2.3	2.0	2.0

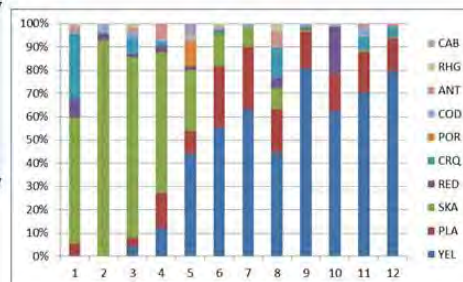
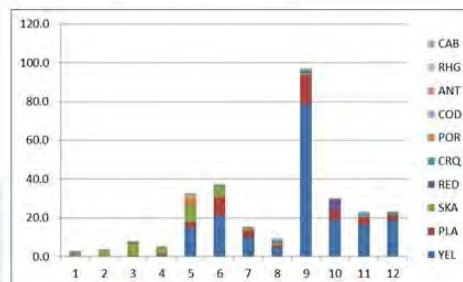


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NCEM provisions · Species Association · GHL · COD · RED · YEL · SKA · Retention · **Discards** · Concepts · Concluding Rem.**Discards.** Source of information – RJ (Rejects) field in the Daily Catch Reports (CATs)Division 3N Top ten
Discards in 2013 (t)N.B. High % of YEL discards beginning May.
Attributed to one vessel.

	YEL	PLA	SKA	RED	CRQ	POR	COD	ANT	RHG	CAB
1	0.0	0.1	1.5	0.2	0.8		0.0	0.1	0.0	
2		0.0	3.4	0.1			0.1		0.0	
3	0.3	0.3	6.4	0.1	0.6		0.2	0.2	0.2	
4	0.6	0.8	3.3	0.1	0.1		0.0	0.4		
5	14.6	3.2	8.7	0.5		3.6	0.4		0.4	1.7
6	20.9	9.9	5.3	0.1	0.6		0.1	0.3	0.6	
7	9.7	4.1	1.3				0.2			
8	4.3	1.8	0.9	0.4	1.3			0.7	0.3	
9	78.7	15.2	1.0	0.6	0.7		0.7	0.1	0.4	
10	18.9	4.7	0.1	6.1			0.2		0.2	
11	16.5	4.1	0.2		1.3		0.9	0.4		
12	18.6	3.3	0.1		1.1			0.3		
Total	183.2	47.6	32.1	8.3	6.3	3.6	2.9	2.4	2.0	1.7



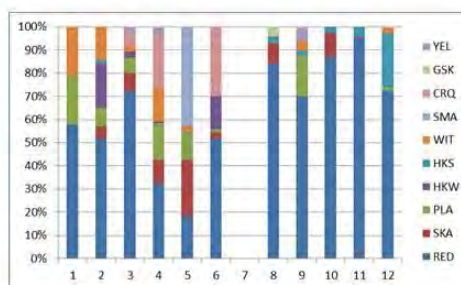
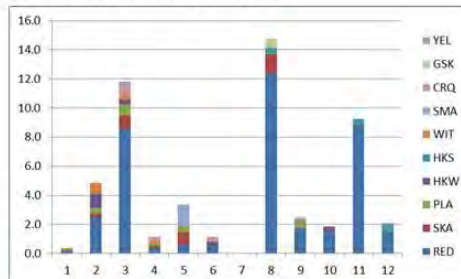
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NCEM provisions · Species Association · GHL · COD · RED · YEL · SKA · Retention · **Discards** · Concepts · Concluding Rem.**Discards.** Source of information – RJ (Rejects) field in the Daily Catch Reports (CATs)Division 30 Top ten
Discards in 2013 (t)

	RED	SKA	PLA	HKW	HKS	WIT	SMA	CRQ	GSK	YEL
1	0.2		0.1			0.1				
2	2.5	0.3	0.4	0.9	0.1	0.7				
3	8.6	0.9	0.8	0.3	0.2			0.7		0.3
4	0.4	0.1	0.2	0.0		0.2		0.3		0.0
5	0.6	0.8	0.4	0.0		0.1	1.4			0.0
6	0.6	0.0	0.0	0.2				0.3		
7										
8	12.4	1.3	0.0		0.4			0.0	0.6	
9	1.7		0.4		0.1	0.1				0.2
10	1.6	0.2		0.0	0.0					
11	8.8	0.0			0.4					
12	1.5		0.0		0.5	0.1		0.0		
Total	38.9	3.7	2.4	1.5	1.4	1.4	1.4	1.4	0.6	0.5

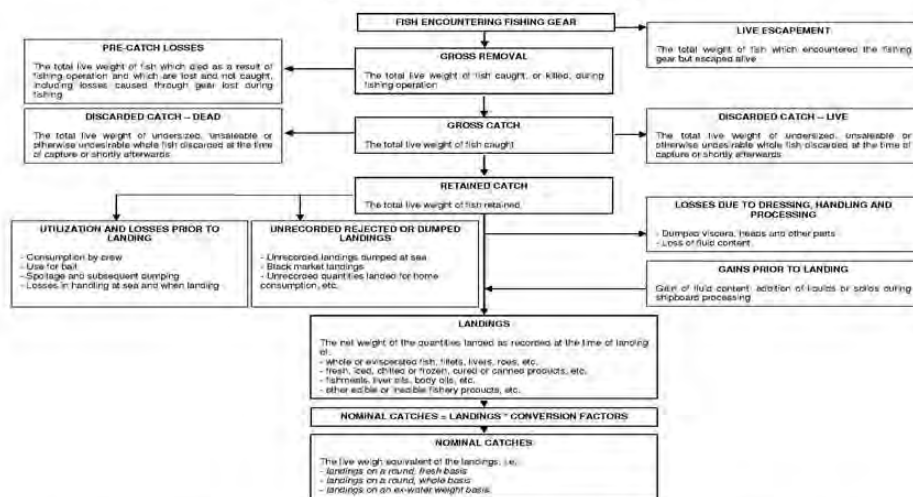


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CATCH CONCEPTS: DIAGRAMMATIC PRESENTATION



Source: Annex B1 of the CWP Handbook of Fishery Statistical Standards (1990)



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FAO Catch Concepts: From Fish Encountering Gear to Nominal Catch

- Gross removal
- Gross catch
- Discarded Catch
- Retained Catch
- Unrecorded Rejects
- Dumped Landings
- Landings
- Nominal Catch

Not retained on board = Discards = Rejects = Dumped off-board back to sea??
What is *Selectivity*? Gear-related? Temporal? Spatial? All of the above?

Appearance in the NCEM

- By-catch - 34 times
- Retained-on-board - 24
- Discards - 18
- Directed Fishery - 15
- Incidental catch - 1
- Target species - 1
- Kept - 0

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NCEM provisions · Species Association · GHL · COD · RED · YEL · SKA · Retention · Discards · Concepts · **Concluding Rem.**

Concluding Remarks

- *Bycatch* implies the non-highest percentage in a single haul.
- Same bycatch limits apply to both move-away and retention rules.
- Species Association
- Temporal and Spatial Analysis of bycatch incidence
- Discards = Rejects = must be dumped at sea = opposite of retained on board?
- NAFO uses same catch concepts/definitions of FAO?


Lastly,

PRP Recommendations 4.2.3.5, 4.2.3.3, and 4.2.4.1:

"A consolidated list of bycatch species...should be included in the NCEM to assist monitoring of bycatch during directed fishing"

Way forward as adopted by GC (GC Doc 12/1):

"FC and SC jointly develop the definition of bycatch, compile a consolidated list of the main relevant bycatch species (commercial, targeted, non-targeted, VMEs, ...) and consider the issue of bycatches in the framework of CPRS, management plans and other management measures."

 FC advoc WG Bycatch, Discards, and Selectivity, Danmønslet, NS, 7-8 July 2014