

35th ANNUAL MEETING - SEPTEMBER 2013**2013 Recommendations from the WGFMS-CPRS to the Fisheries Commission**

The FC Working Group of Fishery Managers and Scientists on Conservation Plans and Rebuilding Strategies (WGFMS-CPRS) met on 9-11 July 2013 in Saint-Pierre et Miquelon and agreed on the following recommendations (meeting report, FC Doc. 13/5):

1. On General Framework

The WG recommends that *General Framework on Risk-based Management Strategies* (Annex 1) be adopted.

2. On Development of alternative strategies for stocks that may not be suited to formulaic rules and/or for stocks where reference points do not exist or cannot be developed

The WG recommends that this item be retained in the agenda of the proposed joint FC-SC WG-RBMS.

3. On Update of 3NO cod CPRS

The WG recommends FC to request SC clarify in September 2013 the derivation of target reference points, including on the possible use of Btarget as a proxy for Bmsy.

4. On Development of CPRS for 3NO witch flounder, 3LN redfish and 3M cod

4.1 Concerning 3NO witch flounder, the WG recommends FC to request SC in providing reference points including Blim, Bmsy and Fmsy (e.g. through modelling or proxy). The WG further recommends that FC, jointly with SC, request the FC-SC WG-RBMS continue the consideration of CPRS development during scheduled meetings.

4.2 Concerning 3LN redfish, the WG recommends that FC, jointly with SC, request the WG-RBMS to meet intersessionally (in person or electronically) as needed to continue the development of the CPRS possibly in the form of MSE. An initial meeting would occur prior to the June 2014 SC meeting.

4.3 Concerning 3M cod, the WG recommends FC to request SC continue the work on reference points and provide Bmsy and Fmsy proxies. The WG further recommends that FC, jointly with SC request the FC-SC WG-RBMS to meet intersessionally (in person or electronically) and continue to develop the CPRS, including defining management objectives and performance statistics.

5. On Management Strategy Evaluation (MSE) Greenland halibut and shrimp

5.1 Concerning 2+3KLMNO Greenland halibut, the WG recommends a review focusing on the performance of the current Management Strategy and HCR in order to assess if the initial objectives

of the rebuilding programme are being met. The WG further recommends FC to consider developing a work plan for the Greenland halibut MSE review with a view to take a decision in September 2014.

5.2 Concerning 3L Shrimp, the WG recommends FC to consider requesting the WG-RBMS to start developing a management strategy, including HCR.

Annex 1. General Framework on Risk-based Management Strategies

1. Introduction:

The purpose of this document is to provide guidance on the development and implementation of risk management strategies based on the application of the Precautionary Approach framework.

While not intended to be a template, the following are recommended elements for the development and implementation of risk based management strategies

2. Biological Synopsis / Fishery Overview:

A brief overview outlining the main biological characteristics of the stock with emphasis on the aspects which impact rebuilding of the stock, as appropriate, including:

- A species' life history characteristics (e.g. growth rates, fecundity, longevity, age-at-maturity, size-at-maturity) - critical elements to consider in determining a stock's response to both fishing pressures and rebuilding measures
- Multispecies interactions – these can have a strong influence on stock recovery potential and ability of all stocks to reach MSY
- Environmental conditions (e.g. temperature, salinity) - will impact the rebuilding dynamics of a stock by affecting life history characteristics, such as fecundity, growth and general productivity. Environmental conditions will also influence predator and prey abundance, which in turn impacts a stocks' overall health and recruitment.

A brief overview of the fisheries in which the stock is captured, including both targeted catch and by-catch, including:

- Impacts of rebuilding on other fisheries - rebuilding efforts for a depleted stock harvested in a mixed-stock or multispecies fishery may have impact on / be impacted by fishing opportunities on targeted stocks/species whose populations are healthy

3. Objective(s):

Objectives (fishery and conservation related) should be clearly stated and direct the development of specific measures. Milestones may also be established as interim steps to achieving objectives.

Objectives and milestones may take into account the following components:

- A target, which is preferably quantifiable (e.g. specified biomass goal)
- A desired time to reach the target (e.g. specified # of years/ generations)
- An acceptable probability level for reaching the target within the specified timeframe

The long-term objective of a Risk-based Management Strategy is to achieve and to maintain the Stock Biomass and the Fishing Mortality in the 'safe zone', as defined by the NAFO Precautionary Approach framework and to ensure that fisheries resources are maintained at or restored to levels capable of producing maximum sustainable yields, according to the Convention objectives (resolution NAFO/GC Doc. 08/3).

4. Reference Points:

The level of information available to perform a quantitative assessment and to define biological reference points may vary considerably between stocks. There are currently stocks with an adopted quantitative

assessment and with limit and/or potential target reference points defined but there are stocks with inadequate information to perform a quantitative assessment and for which the definition of reference points is difficult or not possible.

Where limit reference points can be defined, they should be calculated by the Scientific Council (SC).

SC should also provide advice and analysis in support of the development of other reference points (e.g. targets).

5. Guidance on Management Strategies and Harvest Control Rules¹

a. Stocks below limit reference point

- no directed fishing, and
- by-catch should be restricted to unavoidable by-catch in fisheries directing for other species

b. Re-opening to direct Fishing:

A decision to reopen the fishery should only be considered when Biomass is above Blim.

When a stock has recovered beyond Blim, initial TAC levels should be set at conservative levels to allow for continued recovery and growth.

Decisions to reopen a fishery should take into account any available risk analysis.

Where quantitative risk analysis is available, reopening the fishery should only be considered when there is a very low² probability of Biomass actually being below Blim.

In the absence of a quantitative risk analysis, a decision to reopen a fishery would only occur when FC has a high degree of confidence, taking into account any available advice/analysis from SC, that biomass is above Blim or its proxy. Any subsequent increases in TAC should be gradual in order to allow for monitoring of the stock response to the fishery.

c. Open fisheries:

The NAFO Precautionary Approach framework should be applied and Harvest Control Rules (HCR) should be developed in order to specify actions to be taken.

Fisheries specific harvest control rules should be designed with the objective of keeping the fishery in the safe zone.

There should be a low probability that fishing mortality will exceed Flim.

Scenarios may be considered which mitigate decline in biomass and/or limit increases in TACs as a means to balance fishery socio-economics and long-term conservation objectives.

d. Closing of Directed Fishing:

¹ Noting the merits of quantifiable and testable harvest control rules, these aspects should be considered, on a stock by stock basis, in the development of risk-based management strategies.

² The actual level of risk should be specified by managers.

[As noted in NAFO's PA Framework, a fishery will be closed when it is below Blim. Fisheries Managers will consider the probability and establish risk tolerance taking into consideration short term projections and stock fluctuations.]

e. Additional management measures

When practical, considerations may be given to specific management measures to reduce fishing mortality associated with bycatch including discards, and/or improve selectivity.

6. Ecosystem Considerations:

Risk-based management strategies should be consistent with the ecosystem approach and take into consideration the associated species.

7. By-catch provisions:

For closed fishery, by-catch provisions in the CEMs should be reviewed periodically, to coincide with scheduled assessments of the stock by Scientific Council, and adjusted to reflect the overall trend in spawning stock biomass.

8. Monitoring and Review:

Reviews should be completed on a regular basis at intervals such that failures of the plan (e.g. prolonged declining or stagnant stock growth) can be detected, and changes made as required.

On-going changes in stock status, resulting in implementation of associated harvest decision rules should be continuously examined; trends observed in long-term monitoring are an essential element for consideration in reviewing rebuilding plan performance.

Additional management action may be considered if the stock does not show signs that rebuilding is occurring.