Report of the Working Group on the Management of 3O Redfish

(FC Doc. 04/2)

30-31 March 2004
St. John's, NL, Canada

The Working Group on the Management of 3O Redfish met in accordance with the decision taken by the Fisheries Commission at the 25th Annual Meeting, September 2003.

1. Opening of the Meeting

The NAFO Executive Secretary, Dr. Johanne Fischer opened the meeting by welcoming everyone to the meeting of the Working Group on the management of 3O redfish. Delegates were present from nine Contracting Parties: Canada, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union, Japan, Latvia, Russian Federation, Ukraine and the United States of America. (Annex 1)

2. Election of Chair

The Executive Secretary called for nominations for Chair. The EU proposed Nadia Bouffard (Canada). This was supported by USA and Russia. There being no objections Nadia Bouffard took the Chair. She welcomed all to St. John's, especially those that had never been here to this scenic city.

3. Appointment of Rapporteur

It was noted by the Chair that the Secretariat had offered to serve as Rapporteur of the Meeting. With the support of Canada and the EU, Barbara Marshall (NAFO Secretariat) was appointed Rapporteur.

It was noted the meeting was scheduled for 3 days and it was agreed to monitor and assess the needs of the meeting and adjust the schedule accordingly. It was the goal of the group to have a draft report available before the end of the meeting.

4. Adoption of Agenda

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

5. Review of Scientific Advice

A presentation of the Scientific Council advice extracted from Scientific Council Reports in 2002 (*NAFO Sci. Coun. Rep.*, 2002, p. 35-37) and 2003 (*NAFO Sci. Coun. Rep.*, 2002/2003, p. 286-295) was given by Bill Brodie (Canada). A copy of the Canadian presentation was circulated as 3O Redfish W.G. Working Paper 04/1. (Annex 3)

The Chair then opened the floor for questions and comments.

There were a number of questions regarding use of CPUE, recruitment, size-at-maturity, abundance and variability of by-catch. Questions addressed to Mr. Brodie were answered strictly based on the Scientific Council's previously stated advice.

The EU noted that there was a lack of advice provided by the Scientific Council in 2003 regarding appropriate levels of TAC and interrelationships with the Div. 3LN redfish stock. Div. 3O redfish is assessed on a bi-annual basis and was fully assessed in 2003. The stock will be reviewed again in June 2004 as per the Fisheries Commission Request (FC Doc. 03/9). Linkages between Div. 3LN and Div. 3O redfish are to be examined. Some Contracting Parties agreed they also saw a need for additional information from the Scientific Council.

It was pointed out that the presentation was requested by Canada and was based on scientific advice from the Scientific Council in 2002 and 2003.

Canada noted that the advice to be given in June 2004 will be an interim monitoring report and not a full assessment. It was not the understanding of this Working Group that this would limit the Scientific Council's advice.

Russia underlined that there has been biological uncertainties related to the two redfish species managed together as well as uncertainties in dynamics of biological indices of abundance and CPUE indices. Scientific information is insufficient to make decisions on management issues.

Some participants noted the inability of the Scientific Council to provide advice was hindering discussion towards management measures.

6. Management Issues

At the September 2003 Meeting it was decided to set up an intersessional meeting to discuss the management and possible regulation of Div. 3O redfish (see Annex 3, FC Doc. 03/19).

Canada advised that Div. 3O Redfish should be brought under management in view of:

- Scientific Council Advice – in 2002 Scientific Council advised to bring this stock under TAC and quota management
- Precedents created with NAFO's of adoption of quotas consistent with NEAFC management for Oceanic redfish
- NAFO Convention (Article XI, para. 3) requires the NAFO Fisheries Commission to seek to ensure consistency with the conservation and management measures of the Coastal State.

Canada noted their concern about conservation of Div. 3O redfish and pointed to the responsibility NAFO has for effective management. The Canadian proposal of September (FC WP 03/16) was retabled for consideration by the Working Group. Consistent with scientific advice in 2002, Canada would like to see this stock under a TAC and quota management regime that is applicable throughout the stock area.

It was pointed out that NAFO had cooperated with NEAFC for management of Oceanic redfish in an efficient and expeditious manner and that the situation of Div. 3O redfish is comparable.

The USA confirmed that they were ready to discuss management of Div. 3O redfish noting with concern the increasing catches in recent years, the reliance on a single strong year-class (1988) and the prevalence of immature fish in the catch.

The EU made it clear they are in principle not opposed to management measures for Div. 3O redfish as well as other species. They indicated, however, that they did not consider it appropriate to discuss such measures at this time. The EU felt that it was premature to consider management measures without clearer direction from Scientific Council. The long-term management plan and substantial reduction of the TAC for Greenland halibut have put considerable pressure on their fishing industry in the NAFO Regulatory Area. And finally, the EU also noted that allocation discussions are always very difficult and time consuming.

Russia noted that there are two species that are fished for in this area – redfish and skates. It was pointed out that there was inconsistency between mesh size and size composition of redfish. This was exemplified by NAFO's decision in 1996 to implement a pilot project to evaluate the impact of 90mm mesh size in the Div. 3N redfish fishery. This resulted in the reduction of fishing mortality. It was proposed to discuss mesh size regulations.

Management measures is a very broad term. Canada and Russia pointed out that there are a variety of measures in addition to TACs and quotas which may be considered by this group, such as fish size, mesh regulation, Observer Program, Port Inspections, VMS and by-catch regulations.

Russia noted the unusual description of TAC as a precautionary one in the heading of the working paper. The importance of choosing an averaging period was pointed out as stock productivity varies with time. This issue could be discussed at the 2004 September meeting of the Fisheries Commission.

Japan noted that in order to use the Div. 3O redfish sustainably, Japan supports to set a precautionary TAC. NAFO should not repeat the same failure of Greenland halibut management.

Canada pointed to the Scientific Council indication that 13,000 tons reflected the average catch of Div. 3O redfish since the 1960's and that this level of catches does not appear to be detrimental to the stock. Canada then referred to Scientific Council advice that leads to the conclusion that catches over 20 000 tons would be detrimental to the stock. It was pointed out that this could form the basis of a possible range of TAC for Div. 3O Redfish.

The Ukraine observed that in the last two years catch rates increased and urged the Working Group to examine all information available. In the opinion of the Ukraine, the state of the stock does not appear to be impaired so regulation beyond those measures that already exist do not seem to be necessary. Any additional regulation would need proper justification.

The USA also pointed to the call in Annex 12 of the FC Doc. 03/19 to consider the NAFO Precautionary Approach framework in developing proposals for fisheries conservation and management and obligations that States have under international conventions to apply the Precautionary Approach.

Canada introduced 3O Redfish W.G. WP 04/2 (Annex 4) which is a list of potential measures for regulating Div. 3O Redfish, including:

- TAC in the potential range of 13,000 – 20,000 tons
- Minimum fish size
- Effort controls similar to those that have been recently adopted by NEAFC
- Closure/depth restrictions to protect juveniles of moratoria species

Canada noted that their first priority is the regulation of redfish while the 4th element of the list impacted mostly moratoria stocks caught as by-catches in the redfish fishery.
The EU commented on the 4 elements of the list by:

- raising concerns regarding the proposal for a TAC given that scientific advice is expected in June 2004 and noted again the sensitivity of TACs and allocation issues, adding that any allocation has to be based on historical catches during a representative fishing time period.
- indicating openness to the idea of a minimum fish size, although raising the need for guidance from Scientific Council and the need for consistent measures for all redfish stocks in the NRA.
- noting they were open to the idea of effort controls but pointed to the need to further consider effort control measures and their applicability in NAFO.
- noting that the closed areas were to protect other species – not just redfish. It was noted there was controversy surrounding depth restrictions. Some guidance from Scientific Council on seasonal/area closures and how to deal with other fisheries in closed areas.

Further information on the NEAFC recommendation was circulated.

Canada reminded the Working Group that this list was submitted to stimulate discussion of possible measures to regulate Div. 3O redfish, which may be taken into account by Scientific Council and STACTIC prior to the Annual Meeting.

The USA representative indicated that they have preferences for some items on the list but agreed with the EU that any decision on such measures remain with the Fisheries Commission.

Russia responded to the 4 elements of the list:

- This fishery is still developing and they have concerns about accepting the range suggested in the list without further analysis by Scientific Council.
- The Scientific Council must give advice on minimum fish size and mesh size requirements should also be discussed.
- The effectiveness of the NEAFC measure has not been determined and questioned whether this could be used in conjunction with a TAC or as an alternative.
- Juveniles of species under moratoria must be protected and there are by-catch limitations in effect. The impact of any measures on other new fisheries in the NRA such as skate must also be considered.

The EU agreed with Russia that mesh size is an additional element to consider and that such measures should be applied consistently in other fisheries. The EU also noted possible inter-linkages with Div. 3LN redfish and the need to reduce redfish by-catch in the shrimp Div. 3LNO fishery.

The USA introduced a proposal (WG WP 04/3) (Annex 5) jointly submitted with Canada and Japan for consideration by the meeting. This proposal was an endorsement of the Scientific Council's advice of 2002 to bring the Div. 3O redfish stock under a quota management regime applicable throughout the stock area, as well as a suggested range of 13,000 to 20,000 tons TAC for the stock.

The USA and Canada indicated that as the Div. 3O redfish fishery had been described as a developing fishery, it was important to establish management measures. The suggested range was selected to avoid imposing necessary hardship on current participants in the fishery.

The EU and Ukraine opposed the proposal. The Ukraine felt there was no clear basis to set a TAC at the suggested range. Ukraine stressed its adherence to principles of responsible fisheries and rational management. Ukraine is ready to support any reasonable management measures directed to long-term sustainable fisheries. There has been no evidence of negative impact from fishing pressure.

7. Report to the Fisheries Commission

Subject to minor editorial changes, the draft report of the Working Group was adopted.

8. Other Matters

There were no other matters.

9. Adjournment

The meeting was adjourned at 1700 hrs on Wednesday, 31 March 2004. The Chair wished everyone a pleasant journey home. Contracting Parties thanked the Chair for all her work and special thanks was given to the Secretariat for supporting the meeting and serving as Rapporteur.

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Annex 2. Agenda

1. Opening of the Meeting
2. Election of Chair
3. Appointment of the Rapporteur
4. Adoption of Agenda
5. Review of Scientific Advice
6. Management Issues
7. Report to the Fisheries Commission
8. Other matters
9. Adjournment

Annex 3. Redfish in NAFO Division 3O – Summary of Work and Information Provided by Scientific Council in 2002 and 2003

(Power Point Presentation by B. Brodie (Canada) - 3O Redfish W.G. Working Paper 04/1)

In 2002 SC responded to a series of questions on 3O redfish posed by Canada as Coastal State.

- SC noted there are two species of redfish fished in Div. 3O, *Sebastes fasciatus* and *S. mentella*.
- These species overlap in distribution and are very similar in appearance, and require special techniques to separate in the catch.
- It is therefore unlikely that these will ever be properly separated in the fishery statistics, and are not separated out in most research surveys.

a) Information on the fishing mortality on redfish in Div. 3O in recent years, as well as information on by-catches of other groundfish in the Div. 3O redfish fishery.

- SC noted: - it is not possible to estimate fishing mortality for this stock. There is insufficient historical catch sampling for some fleets and no data for others to conduct analytical assessments.
- - there is some doubt about the magnitude of actual catches reported from Div. 3O, as it is not regulated by TAC in the Regulatory Area. (SC does not rely only on STATLANT data for its catch estimates)
- Accepting the caveat on catches and the observation that Canadian spring and autumn survey estimates of Div. 3O redfish are relatively stable in the last few years, the increase in catches in Div. 3O in recent years, particularly in 2001 at 20 000 tons, suggests that fishing mortality may have increased in 2001.
- Based on STATLANT 21B data for 1998-2000, Atlantic cod, American plaice, Greenland halibut, witch flounder, and yellowtail flounder constitute the major by-catch species in the directed redfish fishery in Div. 3O.
- The percentage of by-catch, calculated as the sum of by-catch for all species as a percentage of redfish catch, suggests that there are differences by fleet and by year, which ranged between 2% and 20% from 1998-2000.
- There were large differences between by-catch within the Canadian EEZ (at less than 3% each year) and by-catch within the NRA (between 12% to 20% annually) depending on the fleet).

b) Information on abundance indices and the distribution of the stock in relation to groundfish resources, particularly for the stocks which are under moratorium.

- SC noted the only information available on abundance indices was from Canadian spring and autumn research surveys. SC does not consider these survey indices as indicative of year-to-year changes in the resource
- Redfish reside on the slopes of the shelf primarily from 100-750 m in an area that encompasses about 6 400 square nautical miles of the 20 000 square nautical miles of the total area of Div. 3O to 1 500 m
- From Canadian survey data pooled from 1999-2001, for 3NO cod and 3LNO American plaice, the greatest overlap occurs in depths between 100 m to 200 m. For 3NO witch flounder, redfish overlap with its distribution with the exception of the area >750 m.
- There are also differences in the amount of overlap for all species between spring and autumn.
- Greater overlap generally occurs in the spring with Atlantic cod and witch flounder, and in the autumn with American plaice.

c) Information on the distribution of redfish in Division 3O, as well as a description of the relative distribution inside and outside the NAFO Regulatory Area.

- Relative distribution inside and outside the NRA was determined based on Canadian survey data. The area of redfish habitat in the NRA (100 to 750 m) is about 496 sq. nm compared to 5 515 sq nm inside the Canadian EEZ. This represents about 8.25% of the area.
- In 2003, SC noted: the proportion of biomass in the NRA averaged 18% in the spring surveys and 20% in the autumn.

d) Advise on reference points and conservation measures that would allow for exploitation of this resource in a precautionary manner.

- Research survey results are highly variable and, although useful for determining longer term stock trends, are not considered a reliable indicator of actual abundance – they are therefore of limited value in establishing reference points.
- Given that the fishery in the NRA is currently unregulated, an initial conservation measure should be to bring the stock under a quota management regime that is applicable throughout the stock area.

e) Information on annual yield potential for this stock in the context of (d) above.

- There is insufficient information on which to base predictions of annual yield potential for this resource. Stock dynamics and recruitment patterns are also poorly understood.
- Catches have averaged about 13 000 tons since 1960 and over the longer term, catches at this level do not appear to have been detrimental.

f) Identification and delineation of fishery areas and exclusion zones where fishing would not be permitted, with the aim of reducing the impact on the groundfish stocks which are under moratorium, particularly juveniles.

- Canadian surveys indicate that the area of overlap between redfish and juveniles of groundfish stocks which are under moratorium (Div. 3NO Atlantic cod and witch flounder, Div. 3LNO American plaice) diminished at depths > 100 m.
- RV data from 1999-2001 indicated that redfish were caught in only a few sets in depths less than 100 m, where most of the juveniles of cod (<= 40cm) and American plaice (<=30 cm) and witch flounder (<=25 cm) reside.
- Densities of juveniles of these species are relatively low beyond 200 m. Fishing at depths greater than 200 m for redfish should minimize the impact on these juveniles.

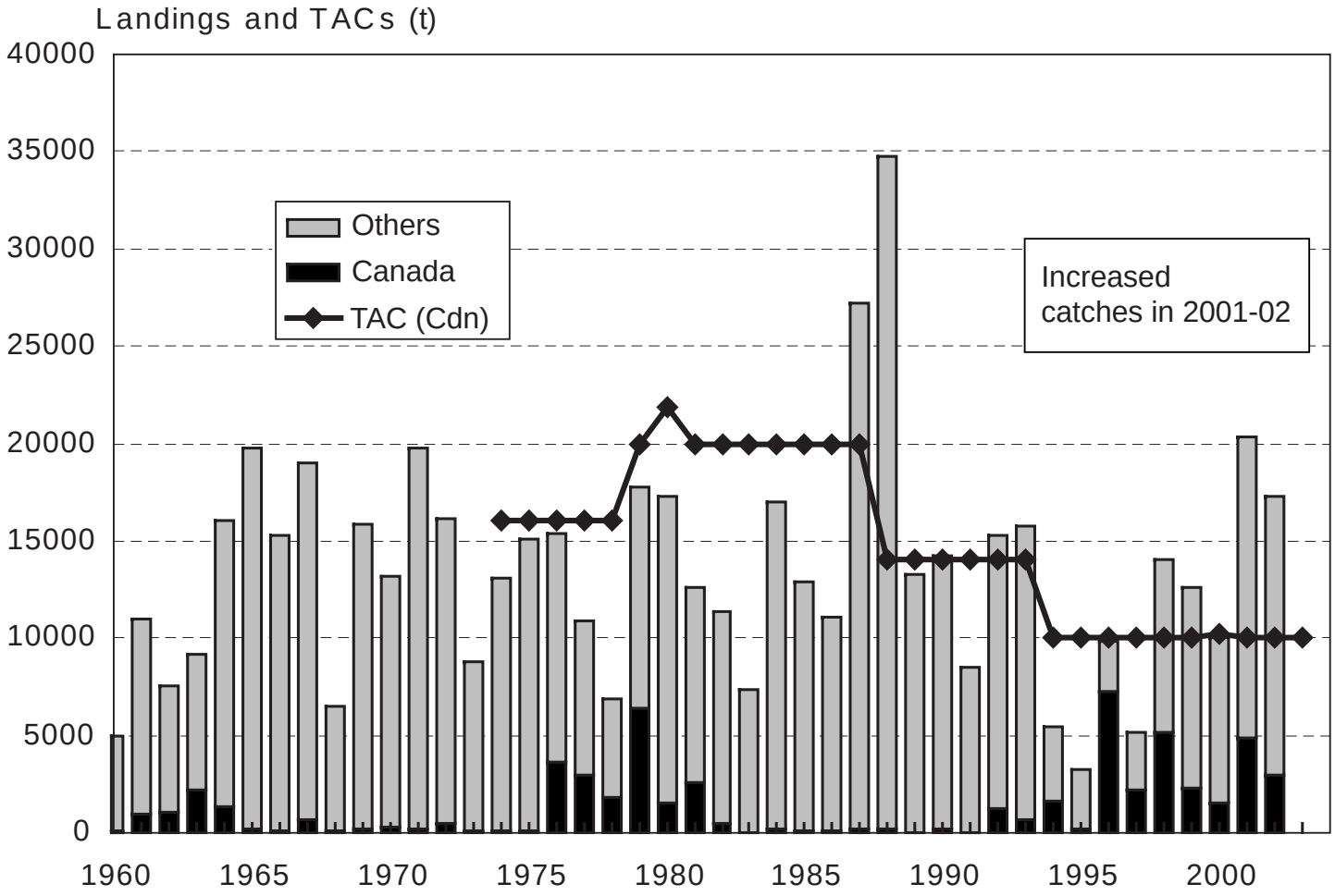
g) Determination of the appropriate level of research that would be required to monitor the status of this resource on an ongoing basis with the aim of providing catch options that could be used in the context of management by Total Allowable Catch (TAC).

- Spring and autumn surveys by Canada sufficiently cover the redfish habitat. Estimates of abundance and biomass have been highly variable from these surveys and part of the reason may be due to vertical and horizontal migrations of redfish in the area.
- There is also uncertainty regarding the integrity of Div. 3O as a separate management unit. Recent technological advances in the tagging of deepwater fish at depth may help address the problems of the resource surveys, and provide another method of estimating stock size, as well as assisting in better understanding of stock structure.
- SC noted there has been much discussion in recent years about the relationship between Div. 3O and Div. 3LN with regard to stock structure and that a recommendation was made by SC in 2001 that studies be carried out to further clarify stock structure of redfish.
- SC also noted that the utilization of the NAFO Observer Program set-by-set data would have been beneficial in addressing this request on Div. 3O redfish, and could be an important source of data in monitoring this resource.

h) Information on the size composition in the current catches and comment on these sizes in relation to the size at sexual maturity.

- Commercial sampling from the 2001 catches of several countries indicate that fish between 21-25 cm dominated the size composition. Based on recent size at maturity data, the female portion of these catches will largely be immature (size at 50% maturity is approximately 27.5 cm).
- SC noted that size at maturity was based on data that did not separate S. mentella and S. fasciatus and that it is possible that there were different maturity rates between these species. However, it is not expected that these differences would be large.

Redfish 3O - Catches



In 2003, SC noted:

- 2002 Catch = 17,234 t
- No sign of good recruitment since 1988 year-class
- No increase in survey biomass over the last few years
- Surveys indicate no overall trend in stock size in last decade
- An index of relative fishing mortality, based on catches and survey biomass, increased steadily from 1998 to 2002

- In 2003, SC was unable to advise on a specific TAC for 2004 & 2005
- There was insufficient information on which to base predictions of annual yield potential for this resource. Stock dynamics, recruitment patterns are poorly understood.
- Catches have averaged about 13,000 t since 1960 and over the long term, catches at this level do not appear to have been detrimental.
- Given that the bulk of the catches in recent years are comprised of fish less than 25cm, the fisheries are targeting predominantly immature fish.
- Surveys indicate that length frequencies of redfish in 3O are more similar to 3N than 3L
- Continuing uncertainties regarding relationships between redfish in 3LN and 3O have important impacts on interpretation of data.

SC recommendation in 2002

- *an initial conservation measure should be to bring the stock under a quota management regime that is applicable throughout the stock area.*

From SC Summary sheet in 2003:

- *Catches have averaged about 13,000 t since 1960 and over the long term, catches at this level do not appear to have been detrimental.*

Annex 4. Potential List of Management Measures for 3O Redfish

(3O Redfish W.G. Working Paper 04/2)

Under Agenda Item 19 of the 2003 Fisheries Commission Meeting, (Management of Currently Unregulated Stocks), a Working Group on the Management of 3O Redfish was tasked to "discuss the management and possible regulation of this stock [3O redfish]…A report of the intersessional meeting will be provided for consideration at the September 2004 meeting." (Report of the Fisheries Commission, 25th Annual Meeting, September 2003)

The following management measures are put forward for consideration by Fisheries Commission in 2004:

TAC (Range 13,000 - 20,000)

Scientific Council in 2002 recommended "*Given that the fishery in the NRA is currently unregulated, an initial conservation measure should be to bring the stock under a quota management regime that is applicable throughout the stock area*." (SC Report 2002, p.36)

"*No increase in survey biomass over the last few years*." (SC Report 2002/2003, p.173)

"*Catches have averaged about 13,000 tons since 1960 and over the long term catches at this level do not appear to have been detrimental.*" (SC Report 2002/2003, p. 173)

Minimum Fish Size

"*Given that the bulk of the catches in recent years comprised fish less than 25 cm, the fisheries are targeting predominantly immature fish."* (SC Report 2002/2003, p.173)

A minimum fish size of 22cm could be considered.

Effort Controls

Effort Controls could be considered in line with those that were decided at the 22nd Annual Meeting of NEAFC (November 2003) to address concerns about "data poor" stocks.

Closures/Depth Restrictions

Seasonal and/or area closures as well as depth restrictions could be considered to address the by-catch of moratoria species in shallow water.

"*RV data from 1999-2001 indicated that redfish were caught in only a few sets in depths less than 100 m, where most of the juveniles of cod (<=40 cm) and American plaice (<=30 cm) and witch flounder (<=25cm) reside.*" (2002 SC Report, p. 37)

"*Densities of juveniles of these species are relatively low beyond 200 m. Fishing at depths >200 m for redfish should minimize the impact on these juveniles*." (SC Report 2002, p. 37)

Annex 5. Proposal by USA, Canada and Japan for Consideration of TAC for 3O Redfish

(3O Redfish W.G. Working Paper 04/3)

The WG endorses the 2002 recommendation of the SC that:

"Given that the fishery in the NRA is currently unregulated, an initial conservation measure should be to bring the stock under a quota management regime that is applicable throughout the stock area." (SC Report 2002, p. 36)

For consideration of the Fisheries Commission, this TAC should be in the range of 13,000 to 20,000 tons.