Agenda Item 6.2
For Information

Council

CNL(14)43

Overview of the 2013 – 2018 Implementation Plans in relation to the management of salmon fisheries

(Paper prepared for the Theme-based Special Session by the Steering Committee)

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1. Introduction

1.1 The objectives of the Theme-based Special Session, as described in CNL(14)13, are to allow for a more detailed exchange of information on the management of salmon fisheries including:

- Progress in establishing conservation limits, or alternative reference points, and the approaches being used to manage fisheries in their absence;
- How management measures are used to ensure the protection of the weakest contributing stocks in mixed-stock fisheries;
- How socio-economic considerations, including the interests of indigenous people, are weighed against conservation needs and, where fishing is permitted on stocks below their conservation limits, the approaches being used to ensure that exploitation is limited to a level that permits stock rebuilding within a stated timeframe.

This paper aims to set the scene by presenting an overview of the relevant information in the 2013-2018 Implementation Plans produced by individual jurisdictions, drawing on the Implementation Plan Review Group's evaluations of these plans, CNL(13)12.

2. Background

2.1 NASCO and its Parties have agreed to adopt and apply a Precautionary Approach to the conservation, management and exploitation of salmon in order to protect the resource and preserve the environments in which it lives. Accordingly, their objective for the management of salmon fisheries is **to promote and protect the diversity and abundance of salmon stocks**, and in support of this, they have developed the following guidelines and agreements:

- The Agreement on Adoption of a Precautionary Approach, CNL(98)46;
- The Decision Structure to Aid the Council and Commissions of NASCO and the relevant authorities in Implementing the Precautionary Approach to Management of North Atlantic Salmon Fisheries, CNL31.332; and
- NASCO Guidelines for the Management of Salmon Fisheries, CNL(09)43, hereinafter referred to as 'the Guidelines'.

2.2 Additional information on these agreements and guidelines is contained in the Programme for the Theme-based Special Session, CNL(14)13. Excerpts relating to the three key subject areas from individual jurisdictions' Implementation Plans had been collated into a single document for use by the Steering Committee which is available from the Secretariat (document IP(13)23).

3. Establishment of Conservation Limits or alternative reference points

3.1 In the 1998 Agreement on Adoption of a Precautionary Approach, NASCO Parties agreed that stocks should be maintained above their conservation limits by the use of management targets established for each river.

> 'Conservation limits (CLs) should be established to define adequate levels of abundance for all river stocks of salmon' … 'Where CLs have not been established, alternative measures should be used as reference points and should be shown to be effective and appropriate in defining adequate stock levels.' The Guidelines, S.4a & d

3.2 The Implementation Plan Review Group noted progress: '*The Implementation Plans confirm the information provided by ICES that river-specific conservation limits have been established by some Parties/jurisdictions for all or most of their rivers. Progress is being made in most other Parties/jurisdictions towards development of these conservation limits and in the meantime juvenile abundance data and/or catch statistics are being used as temporary reference points by some jurisdictions.*'.

3.3 A summary is provided for individual jurisdictions in Table 1. The absence of conservation limits is most prevalent in the EU, though several jurisdictions there have established limits, associated management targets and annual assessment for all their rivers. As yet, EU Scotland (UK) has not considered it possible to establish meaningful conservation limits. Action to address stock depletion is triggered by low catch levels relative to those in the past 20 years following criteria in a flow chart. In the North American Commission, both Canada and the United States are working to improve their conservation limits.

4. How management measures are used to ensure the protection of the weakest contributing stocks in mixed-stock fisheries (MSF)

> 'NASCO has defined MSFs as fisheries exploiting a significant number of salmon from two or more river stocks;' …
> 'Fisheries on mixed-stocks, particularly in coastal waters or on the high seas, pose particular difficulties for management, as they cannot target only stocks that are at full reproductive capacity if there are stocks below CL within the mixed-stock being fished.'…
> 'Rational management of a MSF requires knowledge of the stocks that contribute to the fishery and the status of each of those stocks' ….
> 'Management actions should aim to protect the weakest of the contributing stocks'.
> The Guidelines, S.8

4.1 The Implementation Plan Review Group commented that: '*Where Parties/jurisdictions have such fisheries* (MSFs)*, the Implementation Plans generally provided information on catches but clear descriptions of how the fisheries are managed to ensure that all the contributing stocks are meeting their conservation objectives were often lacking.*

4.2 **Where are the MSFs?** As shown in Table 2, mixed-stock fisheries, as defined by NASCO, operate in many of the jurisdictions. The biggest catches identified in the Implementation Plans are reported from Norway, Canada, EU England and Scotland

(UK), Greenland, and the Russian Federation. In general these are coastal fisheries. It is not clear that estuary fisheries exploiting a small number of stocks, such as described in Ireland, have always been included. Management can be more difficult where fisheries exploit stocks originating from other jurisdictions. The fisheries in Greenland and the Faroe Islands are not the only examples. The St. Pierre and Miquelon (France) coastal fishery which exploits North American stocks is noted by the United States but is not otherwise described in an Implementation Plan as France (in respect of St Pierre and Miquelon) is not a NASCO signatory. Management across jurisdictions may also be required for some estuary fisheries, such as the Solway on the English-Scottish border in EU United Kingdom, or even some in-river fisheries, notably in the R.Teno in Finland that flows as the R.Tana from Norway.

4.3 **Has the contribution of each stock in the MSFs been assessed?** For the Greenland and, when operating, the Faroes fisheries, contributions of stock complexes have been assessed rather than those of individual river stocks. This facilitates management as agreed by NASCO (S2.8 of the Guidelines). Elsewhere, it seems that assessment of the contributions of individual stocks to identified MSFs has rarely been annual or even regular. The information presented at this Special Session may indicate to what extent efforts are being taken to actively identify the stocks contributing to MSFs.

4.4 **Are the MSFs managed to protect the weaker stocks?** In most jurisdictions, weaker stocks have been given greater protection through reduced fishing effort or quotas, as indicated in Table 2. How, or indeed if, this enables conservation objectives to be achieved for individual stocks is unclear for most jurisdictions, especially given the limited assessment of contributions of individual stocks to the catch. It is intended that this Special Session will provide greater clarity and examples of best practice.

4.5 In some jurisdictions, such as EU Ireland and Northern Ireland (UK), protection has been, or is being, achieved by closing or phasing-out coastal fisheries with fisheries limited to estuaries and rivers where stocks are known to be meeting conservation objectives. This Special Session is intended to provide a clearer understanding of how jurisdictions are protecting, or intend to protect, weaker stocks.

5. Management of fishing on stocks below conservation limits

> 'Fishing on stocks that are below CLs should not be permitted. If a decision is made to allow fishing on a stock that is below its CL, on the basis of overriding socio-economic factors, fishing should clearly be limited to a level that will still permit stock recovery within a stated timeframe.' The Guidelines, S.2.7e

5.1 **Do many jurisdictions permit fishing on stocks below conservation limits?** Table 3 shows that with some exceptions such as Denmark in respect of the Faroe Islands, most jurisdictions do permit some fishing on stocks below conservation limits. Some use other reference points to determine whether there can be a harvest or, if so, its size. For example, Ireland allows angling by catch and release if stocks fall below the Conservation Limit but if they fall below 65% of the limit, the fishery is completely closed. The harvest of multi-sea-winter fish is addressed separately in some rivers. Canada has similar constraints, regulations varying between regions.

5.2 The Implementation Plan Review Group commented: *'It is clear from the responses to this question that fisheries are permitted to operate on stocks that are below their reference point in several jurisdictions, but the number of fisheries involved and the*

management measures applying to these fisheries to promote stock rebuilding were not always clearly described.'

5.3 **What are the over-riding socio-economic factors?** These are not always clear. The justifications appear to fall into four, not necessarily discrete, categories. The Steering Committee has categorised these based on statements in the Implementation Plans:

i) Maintaining economic benefits: Without continuity, fishermen and associated businesses will have to seek other opportunities, whether for employment or recreation. If stock depletion is short-term this may lead to unnecessary, potentially long-term, loss of economic benefits. In EU Scotland (UK), for example, consideration is given not only to livelihoods but also property rights. Such rights are also considered in Norway, where local owners have been given a greater role in stock management in the last decade.

ii) Maintaining stakeholder engagement in resource protection and enhancement: For example, EU Denmark flagged the role that angling associations have in protecting and enhancing local salmon stocks.

iii) Subsistence: In some locations, such as Greenland, maintaining a fishery is deemed vital to the well-being of local communities, options for alternative employment or food being limited.

iv) Cultural: Several jurisdictions deem it important that some fisheries are maintained for cultural reasons. Canada, the Russian Federation, and EU Finland give priority to aboriginal fisheries. Elsewhere, such as in EU England, Wales and Scotland (UK), where fishing methods are unique to a very small number of locations and deemed to have a heritage value, a residual fishery may be permitted with a low level of catch.

5.4 **Taking account of socio-economic factors:**

> 'In evaluating management options conservation of the salmon resource should take precedence; and transparent policies and processes should be in place to take account of socio-economic factors in making management decisions and for consulting stakeholders.' The Guidelines, S.2.9

5.5 For many jurisdictions, it may be inferred, where not specifically stated in the Implementation Plans, that policy is for conservation to take precedence. A summary is included in Table 3. For others, such as EU Scotland (UK), conservation is just one component of a national socio-economic objective. Even when policy appears to give conservation precedence, most Implementation Plans do not detail the process by which this is achieved. As noted by the Implementation Review Group '*generally little information was provided on how the costs and benefits of different options were weighed in decision-making.'* No jurisdiction mentioned the NASCO 2002, 'Decision Structure for the Management of Salmon Fisheries'.

5.6 Consultation is an important facet of regulation. As noted by the Implementation Review Group: *'Many plans referred to stakeholder consultations, both at national and regional levels.'* Further clarification on such consultations would be helpful in understanding how decisions are made when balancing economic considerations against conservation.

5.7 **Are timeframes to permit stock recovery stated?** Multi-annual regulations operate in several jurisdictions, whether for single or mixed stock fisheries. However, it is not clear that timeframes for stock recovery are generally specified, or indeed appropriate where exploitation is not a key limiting factor. In EU United Kingdom timeframes for at least some stock recovery are defined in England & Wales and implied for Scotland. It is not clear however what evaluation processes are in place to monitor whether adequate recovery is taking place during the stated or implied timeframes and how these are reported to stakeholders and fisheries managers.

6. Conclusions

6.1 Conservation limits and management reference points have been established for stocks in most jurisdictions. Implementation Plans indicate the intention to establish biological reference points to address remaining gaps, though the timescale isn't always stated.

6.2 Many jurisdictions still permit fisheries, including mixed stock fisheries, to operate on stocks below their conservation limits or alternative reference points.

6.3 Most fisheries are constrained, either by effort or by catch, and consultation with stakeholders is generally an important factor in the process of choosing a management option. Nonetheless, it is not clear how, or in some cases if, conservation is given precedence over socio-economic factors.

6.4 The presentations and discussion in this Special Session offer the opportunity for jurisdictions to clarify how they are applying a Precautionary Approach to fisheries management, as agreed, and to share best practice.

JURISDICTION	Proportion of rivers/stocks with CLs established	Proportion of rivers/stocks with effective and appropriate alternative measures
Canada	All. CLs defined regionally to different criteria. 6% of rivers are assessed annually. Reassessment of CLs and reference points planned.	
Denmark in respect of Faroe Islands	Reference points established by ICES for stock complexes exploited in marine fishery. No rivers with self-sustaining wild stocks.	
Denmark in respect of Greenland	Reference points established by ICES for stock complexes in coastal fishery. No CL established for single Greenland river stock.	
EU Denmark	Conservation limits not set	In 4 rivers with wild salmon objective is 1,000 spawners. Each year stock is assessed in one river. None where wild salmon extinct.
EU England/ Wales (UK)	78 rivers regularly support salmon. All principal rivers (64) with CLs and assessed annually, though not split 1SW/MSW. Management target is to exceed CL 80% of the time.	
EU Finland	Yes for 1 of 2 rivers. CLs set for 5 tributaries of the R.Teno, working with Norway.	R. Näätämöjoki: catch statistics used as surrogate of abundance?
EU Germany	Only 'maintained' rivers at present. No CLs defined.	Conservation status determined with special assessment and evaluation keys. Management target is 'favourable conservation status'.
EU Ireland	100% (144 stocks). 16 rivers also have separate assessment for 2SW.	
EU N. Ireland (UK)	Yes, CLs in both Loughs Agency and DCAL areas. Management targets set in Loughs Agency area.	
EU Scotland (UK)	Not yet. Work currently underway to establish CLs.	Flow chart based on rod catches, related to other data from counters and juvenile surveys.
EU Spain	CLs planned in Cantabria. Not set yet in Asturias or Galicia.	Ref points unclear, abundance assessed by catch, counters, & observation to set TAC.
EU Sweden	None yet. CLs and management targets to be developed 2015-18	Status assessed by parr abundance relative to habitat potential combined with catch data.
Norway	439 rivers with self-reproducing stocks have spawning targets. Annual assessment of 227 river stocks.	
Russian Federation	100% in Murmansk region, the main rivers in Arkhangelsk and the Pechora. None in Komi or Karelia.	No information
United States	Conservation Spawning Escapement goal (as 2SW) is 29,199 adults. New targets proposed and being assessed by ICES.	

Table 1: The status of Conservation Limits or Alternative measures indicated in Implementation Plans

JURISDICTION	What size are the MSFs?	Has the contribution of each stock in the fishery been assessed and when?	Is the fishery managed with the aim of protecting the weaker stocks?
Canada	Mean catch over 5-year period - 58t (9606 grilse, 3616 large). 24t in 2013	Project to analyse stock composition in Labrador fishery due to report 2013	Not specifically though effort is constrained. Stock composition currently being assessed
Denmark in respect of Faroe Islands	No Fishing	Annual ICES assessment at stock complex level	Yes. Through ICES/NASCO
Denmark in respect of Greenland	Coastal fishery - mean catch over 5-year period - 29t. 47t in 2013	Annual ICES assessment at stock complex level	Yes. NASCO agreement allows stock rebuilding
EU Denmark	No significant fishery	N/A	No fishery
EU England/Wales (UK)	Policy to phase out those MSFs exploiting more than a few stocks. 2007 - 2011 mean catch approx. 13,000 fish (~50t) other than heritage fisheries.	Yes - recently in some MSF, but not annually	Yes, through effort, and sometimes catch restrictions, assured if and when phase out of MSFs is complete.
EU Finland	In-river (Teno) exploiting 30 tributary populations so outside NASCO definition,	No specific data	New agreement with Norway under development
EU Germany	None	N/A	No fishery
EU Ireland	3 fisheries (1X 2 stocks, 2 X 3 stocks). Average total catch = 7t	Yes - all exceeding CL	Yes
EU N. Ireland (UK)	None. Residual coastal fisheries have been closed.	N/A	Yes - led to cessation of fishery in 2012
EU Scotland (UK)	40 tonnes - mean 5-year coastal catch	No - some work underway	Not yet. Under review
EU Spain	None	N/A	No fishery
EU Sweden	MSFs on both wild and stocked fish. Average 2007 - 2011 catch of 2t	No	Plans to use only gear which allows release of wild salmon, compulsory from 2014
Norway	Mean catch in sea fisheries - 331 t. 345 t in 2013	No info	Country is divided into 23 regions to provide management advice to protect stocks.
Russian Federation	25 tonnes in Murmansk, 10 tonnes in Archangelsk regions.	Yes - 'in past' from tagging data	Not yet but quotas have been gradually reduced.
United States	None in jurisdiction	N/A	No fishery

Table 2: The mixed stock fisheries and their management as noted in Implementation Plans

JURISDICTION	Is fishing permitted within the jurisdiction on stocks below Conservation Limits?	What are the stated overriding socio-economic imperatives to justify continued fishing?	Does conservation take precedence?	Are transparent policies and processes in place for incorporating socio-economic factors and consulting stakeholders?
Canada	Yes. Measures vary depending on stock state. Fisheries may be closed if stock is severely depleted. Varies by province.	Resident subsistence fishery, Aboriginal fisheries and river stewardship scheme for angling.	Conservation needs to be met before a fishery operates then aboriginal fisheries have priority.	Yes, for policy and consultation,
Denmark in respect of Faroe Islands	No. Fishery closed in line with ICES advice on four stock complexes, i.e. N and S European 1SW and MSW	N/A	Yes	NASCO work is documented. Consultation by Government with local fisheries interests implied.
Denmark in respect of Greenland	Yes. By coastal fishery on N American and S European MSW stocks	Subsistence fishery. Internal use only. No commercial export.	Yes, up to a point. Fishery is limited by NASCO agreement to reduce risk to individual stocks	NASCO work is documented. Consultation by Government with local fisheries interests implied.
EU Denmark	Yes. Limited quotas set for sports fishery based on estimated spawning run	Stakeholder support over habitat, stocking and control of illegal fishing.	Yes	Process unclear. Local angling associations and land owners consulted annually on salmon management
EU England/Wales (UK)	Yes. But no harvest if stock projected to fail management target in 5 years.	Stakeholder engagement, stability and continuity in fisheries, heritage fisheries	Yes. There must be progress towards management objective.	Decision Structure and formal process for consultation on measures.
EU Finland	Yes. Fisheries though ref points on 5 Norwegian tributaries not attained.	Local economy and the Sámi culture	Not yet, on R.Teno	Not yet.
EU Germany	No. Negligible catch in some fisheries.	N/A	Yes	Not relevant as yet.
EU Ireland	No, if below 65% of CL. Yes, if >65% of CL but no harvest allowed and C&R only with method restrictions.	N/A	Yes	Consultation with stakeholders on allocation of harvest (usually based on historical catches).

EU N. Ireland (UK)	No, when new legislation introduced in 2014 for DCAL area: no commercial salmon fishing and angling C&R only until sustainable surplus above CL. No exploitation of stocks if targets not met in season in Loughs Agency area.	N/A	Yes.	Consultation with stakeholders
EU Scotland (UK)	Yes, though abundance flow chart used by local fishery boards and, if necessary, national government to constrain exploitation.	Various factors may influence measures applied and time frame for recovery: property values, livelihoods, heritage value of fisheries.	Not clear	Decision Structure for local management to implement with national overview. Consultation.
EU Spain	Yes, though not in Asturias. In both Cantabria and Galicia, fishing to a quota occurs on stocks that are likely to be below any reference point established.	To maintain the interest of the people in the species and protection of its habitat	Yes, except perhaps R. Mino.	Not clear. There is consultation with Fishing Advisory Council
EU Sweden	Yes. Restricted fishing allowed on 3 of 6 stocks identified below 50% of predicted potential production	No justification given	Not clear	Extensive consultation
Norway	Yes, but fisheries on stocks that do not reach their management target shall be limited, so as to permit stock recovery. In coastal areas fisheries harvest stocks below management targets.	Unclear but implication is to maintain a fishery and associated benefits	Yes, up to a point, by reducing fisheries on stocks below management targets 'as much as possible'	Strong local responsibility for management measures with local consultation based on national advice. Consultation with Sami Parliament.
Russian Federation	Yes. Fisheries may be permitted on stocks below reference point for socio-economic reasons	For allocation of TACs, fisheries are prioritised (6 levels). Indigenous small nations have priority.	Yes. Conservation and rational exploitation take priority over property rights. Regional TACs.	Policy stated, though no information on consultation.
United States	Not within US jurisdiction.	N/A	Yes	Not relevant as yet given depleted nature of the stocks

Table 3: The management of fisheries on stocks below their conservation limits as noted in Implementation Plans.