West Greenland Commission
Inter-Sessional Meeting

WGCIS(16)3

Report of the West Greenland Commission Ad Hoc Working Group on the Application of the Six Tenets for Effective Management of an Atlantic Salmon Fishery

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1. The *Ad Hoc* Working Group on Monitoring and Control that met in Nuuk, Greenland in October 2014 developed a matrix for applying six tenets for effective management of an Atlantic salmon fishery and used this to evaluate the monitoring and control of the salmon fishery at West Greenland. This evaluation resulted in the agreement of enhancements in the form of the Updated Plan for Implementation of Monitoring and Control Measures in the Salmon Fishery at West Greenland, WGC(15)20. The Working Group had recommended that the six tenets be applied by all Members of the West Greenland Commission and had recognised that the evaluation of these fisheries should be consistent with that undertaken for the salmon fishery at West Greenland.

2. At its Thirty-Second Annual Meeting, the West Greenland Commission agreed Terms of Reference for an *Ad hoc* Working Group on the Application of the Six Tenets for Effective Management of an Atlantic Salmon Fishery, WGC(15)23. The *Ad hoc* Working Group was asked to develop an approach and suggested timeline for the application of the six tenets process to all Atlantic salmon fisheries conducted by Members of the West Greenland Commission. As a first step, Parties/jurisdictions were requested to provide a self-assessment for their fisheries (excluding jurisdictions from the northern NEAC stock complex) according to the procedures outlined in document WGCMC(14)2.

3. The *Ad hoc* Working Group met in Dublin, Ireland, during 16 and 17 February under the Chairmanship of Dr Ciaran Byrne (European Union), and its report is attached. The Working Group developed a revised matrix (see Annex 4) but recognised that due to the number of jurisdictions involved in the broader application of the six tenets, it would be a substantial task for a group to conduct the assessments. The Working Group recommends, therefore, that self-assessments be undertaken by 31 December 2016 using the revised matrix, WGCST(16)16 and proposes that it would be more consistent with the review of the Greenland salmon fishery if these self-assessments were then subject to review. These self-assessments could then be reviewed in 2017 either by:

    1. a further Working Group established by the West Greenland Commission;
    2. the West Greenland Commission itself at an inter-sessional meeting; or
    3. the Implementation Plan/Annual Progress Report (IP/APR) Review Group.

    The Working Group recommends that the review be undertaken within the Commission, ideally by a Working Group (option 1 above) comprising representatives of the Members of the West Greenland Commission and the accredited NGOs, which would report to the Commission's 2017 Annual Meeting or, if held, an inter-sessional meeting.

4. The Commission is asked to consider this report and decide on any appropriate action.

Secretary
Edinburgh
8 April 2016

WGCIS(16)3

Report of the West Greenland Commission Ad Hoc Working Group on the Application of the Six Tenets for Effective Management of an Atlantic Salmon Fishery

Inland Fisheries Ireland, Dublin, Ireland
16 - 17 February 2016

1. Opening of the Meeting

1.1 The Chairman, Dr Ciaran Byrne (European Union), opened the meeting and welcomed Working Group participants to Dublin. He referred to the West Greenland Commission's *Ad Hoc* Working Group on Monitoring and Control that had met in 2014. That Working Group had agreed a matrix based on six tenets for effective fishery management that had been used to evaluate the monitoring and control of the West Greenland salmon fishery. This evaluation had resulted in the adoption, in June 2015, of a Plan for Implementation of Monitoring and Control Measures in the Salmon Fishery at West Greenland. He indicated that, under the Multi-Annual Regulatory Measure for Fishing for Salmon at West Greenland for 2015, 2016 and 2017, the Commission had agreed that all Members of the Commission should apply the six tenets developed for use in the West Greenland salmon fishery and contained in document WGCMC(14)2. The Working Group was, therefore, tasked with developing an approach and suggested timeline for the application of the six tenets to all Atlantic salmon fisheries conducted by Members of the West Greenland Commission (excluding Northern European stocks), recognising that some changes may be needed given the different scale and nature of the fisheries conducted by States of origin. To facilitate this work, all Members of the Commission had been requested to provide a self-assessment of the management of their Atlantic salmon fisheries using the tenets originally used for the West Greenland fishery. The Chairman suggested that the first task would be to consider any lessons that have emerged in conducting these assessments and if, and how, the matrix might need to be adapted. The Group had also been asked to advise on an appropriate level of categorisation of the fisheries and then to develop standardised protocols to guide jurisdictions on the application of the six tenets, including providing guidance on the scoring system, ancillary information to be provided and whether there should be self-assessments or a consensus approach to the evaluation as had already been done for the Greenland salmon fishery. He indicated that the Group's recommendations will go forward for consideration at the Commission's inter-sessional meeting to be held immediately prior to the 2016 Annual Meeting as part of the planned review of the Multi-Annual Regulatory Measure.

1.2 A list of participants is contained in Annex 1.

2. Adoption of the Agenda

2.1 The Working Group adopted its Agenda, WGCST(16)14 (Annex 2), after including a new item 4 'Consideration of the Terms of Reference'.

3. Appointment of a Rapporteur

3.1 The Chairman indicated that he would work with the Secretary in preparing a Draft Report of the meeting for consideration by the Working Group.

4. Consideration of the Terms of Reference

4.1 The Working Group's Terms of Reference (TORs), as contained in document WGC(15)23, include the following:

1. review and evaluate the self-assessments;
2. develop a framework by which the Members of the West Greenland Commission can evaluate their Atlantic salmon fisheries management procedures against the six tenets for all Atlantic salmon fisheries within their jurisdictions based on the experience and issues raised with the trial assessment and review process including:
    a. reviewing WGCMC(14)2, providing clarification of the text, where needed, on the wording of the tenets and suggesting re-organisation, if required, of the six tenets matrix for application to all Atlantic salmon fisheries conducted by Members within the West Greenland Commission;
    b. advising on other 'tenets' used in other countries or management organisations, which may be considered for inclusion to enhance relevance and applicability of the proposed six tenets;
3. advise on the appropriate level of categorisation (e.g. report on fisheries at a national or sub-national level, commercial/recreational/subsistence fisheries) and for fisheries that are closed;
4. provide standardised protocols guiding jurisdictions on the application of the six tenets matrix by:
    a. providing guidance on the determination of qualitative scoring (e.g. red, yellow and green, if appropriate), for each tenet to assist jurisdictions in completing the assessment;
    b. advising on ancillary information that may be provided by jurisdictions (e.g. tenet-specific footnotes) to be used towards further interpretation of the qualitative scoring of each tenet;
    c. advising on the utility of individual jurisdictions providing their own assessments versus the assessments being informed by a group discussion and consensus approach.

4.2 The Working Group considered these TORs. It agreed that its task was not to extensively review the content of the self-assessments, but to develop an approach and suggested timeline for the application of the six tenets process to all Atlantic salmon fisheries conducted by Members of the West Greenland Commission. In doing so it would draw on the lessons learned from, and challenges encountered during, the self-assessments conducted by Parties/jurisdictions. The representative of the NGOs indicated that he had a number of comments on the content of the self-assessments that might be of assistance when considering an assessment process to be applied by all Members of the West Greenland Commission (see section 5 below). It was noted that the review of the Greenland salmon fishery had been conducted by the Working Group on Monitoring and Control and

that this process had been more rigorous than the self-assessments undertaken to date, but it had involved a three day meeting to evaluate just one fishery.

4.3 The Chairman reminded the Working Group that it was required to report to the Commission before 26 February 2016, providing an overview of its findings and recommending a process for application of the six tenets by all Members of the West Greenland Commission. The Chairman referred to the fact that document WGC(15)23 requested that the Working Group also suggest a timeline for the application of the six tenets to all fisheries conducted by Members of the West Greenland Commission and he proposed that this be considered under Agenda item 6.

5. Review and evaluation of the self-assessments

5.1 The Working Group's TORs requested that trial self-assessments be provided by the Members of the West Greenland Commission (excluding jurisdictions within the Northern NEAC stock complex as defined by ICES). The Working Group welcomed the provision of the following self-assessments that are contained in Annex 3:

- Canada, WGCST(16)3;
- EU - UK (Northern Ireland), WGCST(16)4;
- EU - UK (Scotland), WGCST(16)5;
- EU - UK (England and Wales), WGCST(16)6;
- EU - Ireland, WGCST(16)7;
- EU - Spain (Navarra), WGCST(16)8;
- EU - Spain (Cantabria), WGCST(16)9;
- EU - Spain (Galicia), WGCST(16)10;
- EU - Spain (Asturias), WGCST(16)11;
- EU - France, WGCST(16)12;
- USA, WGCST(16)2.

5.2 It was noted that additional information on the management of salmon fisheries is contained in the Implementation Plans and Annual Progress Reports developed by the Parties/jurisdictions. The matrix was, however, considered to be simple to complete and interpret and could provide a useful summary of the status of control and enforcement activities. It provided a starting point for exchange of information among the Parties/jurisdictions of the West Greenland Commission related to control and enforcement and hopefully sharing of information on best practice. The Working Group considered the six tenets process in the context of the NASCO Guidelines for the Management of Salmon Fisheries, CNL(09)43.

5.3 The Working Group recognised that the six tenets are inter-related and there is a need, therefore, for an integrated approach in developing a management programme. For example, effectively limiting catch may depend on accurate and effective reporting, communication of management rules and control and enforcement.

5.4 In conducting the self-assessments, all Parties/jurisdictions had used the six tenets as developed for use with the Greenland fishery and no suggestions had been made for clarification of the text or for the inclusion of additional tenets. The US, which has no directed salmon fisheries, had completed a single matrix covering all types of the historical fishery. All other Parties/jurisdictions had applied the six tenets in a separate matrix for

each category of fishery where these occur (commercial and recreational fisheries and, in the case of Canada, subsistence fisheries). The US had used the matrix as applied to the Greenland fishery with footnotes providing additional information on the assessments, while the EU and Canada had modified the matrix by incorporating a field for comments/rationale, mainly in a three or four column matrix (tenet number, tenet description, score and comment/rationale). Ireland had used a similar matrix but labelled the columns as tenet, analysis rationale and status. Most Parties/jurisdictions had applied the 'traffic light' system used in evaluating the Greenland fishery (green indicates the principle outlined in the tenet was met by the current management regime, although further improvements might still be possible; amber indicates that the tenet was partially met; and red indicates that the tenet was not met). Canada used a traffic light system but categorised the extent to which the tenet had been met by the current management regime as poor, fair or good and then provided a rationale. Spain (Navarra, Cantabria, Galicia and Asturias) had used a 'Yes/No' system with regard to whether the tenets were being met or not in the current management regime.

5.5 A number of points emerged from discussion of the self-assessments, including recognition that only Multi-Sea-Winter salmon contribute to the West Greenland fishery, whether there was a need to consider mixed and single stock fisheries separately, a lack of information presented on management effort invested by Parties and the need to clearly define the 'traffic light' system if that is to be used in the assessments in future. The NGOs noted that most of the self-assessments had indicated that the tenets were being met by all Parties/jurisdictions and asked for clarification on a number of the self-assessments, including in relation to reporting rate and sanctions for non-reporting. While acknowledging that the self-assessment for Canada had successfully combined information for five Provinces and was a detailed report, the NGOs believed that the assessment should have been conducted separately for each Province, given that the management regimes differ and tabled a paper providing further details, WGCST(16)15.

6. Development of a framework for evaluation of salmon fisheries

a) Review of WGCMC(14)2 to identify where clarification of the text and/or re-organisation of the matrix is needed

6.1 As noted above, in undertaking the self-assessments, Parties/jurisdictions had adapted the matrix for use with their fisheries. The Working Group considered that there was a need for some clarification of the text used in describing the six tenets as outlined in document WGCMC(14)2 and, furthermore, it agreed to develop guidance on each tenet to support the assessment process (see 7.3 below). In the light of the self-assessments, the main changes to the six tenets are as follows:

- changing tenet 2 from 'Effectively limiting catch' to read 'Effectively limiting catch and/or harvest' to reflect the existence of catch and release fisheries;
- changing tenet 6 from 'Fishery sampling' to read 'Scientific fishery sampling' to reflect the focus of this tenet on the scientific assessment process;
- changes were also made to the descriptions of some of the tenets (1, 2, 3 and 5) contained in WGCMC(14)2, which were developed specifically for use in relation to the West Greenland fishery, to ensure that they better reflect the diversity of the fisheries prosecuted by the Members of the Commission. These changes are incorporated in the

'Revised Matrix for the application of the six tenets for effective management of an Atlantic salmon fishery', WGCST(16)16 (Annex 4).

6.2 The Working Group recommends that a five column matrix be adopted and that a separate matrix be applied to each type of fishery (see 7.1 below). The Working Group recommends that the terms 'Status' and 'Concise rationale for status assigned' be used by all West Greenland Commission Parties/jurisdictions to indicate whether or not the tenet is being achieved and to provide justification for the status assigned, respectively. The matrix recommended by the Working Group is as follows:

Tenet No.	**Description of Tenet**	**Basis for the assessment**	**Status (G, A or R)**	**Concise rationale for status assigned**
1	Known pool of participants			
2	Effectively limiting catch and/or harvest			
3	Accurate, effective and timely reporting			
4	Effective communication of management rules			
5	Control and enforcement			
6	Scientific fishery sampling			

b) Identification of any additional tenets to enhance relevance and applicability of the tenets

6.3 As noted above, no suggestions had been made in the self-assessments for inclusion of additional tenets in order to enhance relevance and applicability. The Working Group discussed possible additional tenets, but decided that the existing six tenets, with some clarification and guidance on the basis for the assessment, would be sufficient to evaluate all salmon fisheries conducted by Members of the Commission.

7. Development of standardised protocols on the application of the six tenets matrix

a) Level of categorisation of fisheries (e.g. commercial, recreational and subsistence)

7.1 As noted above, most Parties/jurisdictions had completed self-assessments for each category of fishery. The Working Group recommends that the matrix be applied for three categories of fishery: Commercial, Recreational and Other (to be specified e.g. sustenance, scientific fisheries and by-catch). The Working Group concluded that any further categorisation (e.g. differentiating between single-stock and mixed-stock fisheries) would increase complexity without significant benefit to the evaluation at this stage. The Working Group noted that it had also been requested to advise on whether reporting should be at national or sub-national level. It considered that this would be a matter for the Parties/jurisdictions concerned, but where different management regimes operate in different provinces or regions, separate sub-national assessments should be considered in order to provide a clear picture of the status of those management regimes. Some self-assessments had been provided where commercial fisheries had been closed, irrespective

of whether it was likely that the fishery would re-open. The Working Group recognised that in these circumstances some of the tenets would not be applicable (e.g. tenets 1, 2, 3 and 6) but others may still be relevant (e.g. tenets 4 and 5).

b) Qualitative scoring system (e.g. red, yellow, green)

7.2 The Working Group noted that most Parties/jurisdictions had applied a 'traffic light' system as used by the Working Group on Monitoring and Control in its assessment of the salmon fishery at West Greenland. A number of other approaches were discussed including a numerical score (1 – 10) and split colour coding such as Red/Amber. However, the Working Group recognised that the simple 'traffic light' system had considerable merit in that it is easy to apply and is a useful way of visualising the status of the current management system. The Working Group recommends that this 'traffic light' system be used with the three categories defined as follows:

- Green (G) indicates that the principle outlined in the tenet is being met by the current management regime, although further improvements might still be possible;
- Amber (A) indicates that the tenet is currently being partially met and that some improvements are needed to the current management regime; and
- Red (R) indicates that the tenet is not currently being met and that significant improvement is needed to the current management regime.

c) Ancillary information to support the scoring system (e.g. tenet-specific footnotes)

7.3 The Working Group noted that document WGCMC(14)2 provided a good justification of why each of the six tenets was relevant and important to effective management of salmon fisheries, but did not provide guidance on the information that was sought as the basis for the assessment. The Working Group developed guidance to assist Parties/jurisdictions in completing the matrix, but felt it would be clearer if this was included in the matrix rather than as footnotes. This guidance is as follows:

Description of Tenet	**Basis for the assessment**
Known pool of participants	1. Is a statutory license system and/or register in place? 2. Does that system define the entire pool of participants? 3. Is the entire pool of participants known prior to or during the season?
Effectively limiting catch and/or harvest	1. Are measures in place to effectively limit catch and/or harvest e.g. harvest restrictions (including quotas), effort restrictions (including gear restrictions, ceiling on the number of licences, seasonal closures) or a combination of both? 2. Are measures consistent with NASCO's Guidelines for the Management of Salmon Fisheries, CNL(09)43?
Accurate, effective and timely reporting	1. Is a mandatory system in place to ensure accurate, effective and timely reporting by all participants in the fishery? 2. Are assessments conducted to confirm the accuracy of catch returns? 3. Are the outputs from 1 and 2 above used to effectively limit catch and/or harvest in accordance with tenet 2?

Effective communication of management rules	1. Are measures in place to effectively communicate with all participants in the fishery in a timely fashion? 2. Does the communication process explain clearly to participants in the fishery the policies underpinning the management rules e.g. license obligations, sanctions, any in-season management adjustments and fishery closure information?
Control and enforcement	1. Are control and enforcement measures in place and are these considered to be effective? 2. Are adequate sanctions in place to deter violations?
Scientific fishery sampling	1. Are scientific fishery sampling programmes in place to provide additional inputs to the scientific assessment process? 2. Are results of these programmes used to inform the management of the fishery?

d) Self-assessment versus evaluation by a Working Group

7.4 The Working Group on Monitoring and Control had recognised that the evaluation of fisheries by all Members of the Commission should be consistent with that undertaken for the salmon fishery at West Greenland. That evaluation had been undertaken by the Working Group on Monitoring and Control over a period of three days and had involved representatives from various agencies in Greenland including the control and enforcement agency, other Members of the Commission and NASCO's accredited NGOs. The review had resulted in the development and adoption of a Plan for Implementation of Monitoring and Control Measures in the Salmon Fishery at West Greenland, WGC(15)20. New measures had already been developed under that Plan.

7.5 The Working Group recognised that due to the number of jurisdictions involved in the broader application of the six tenets, it would be a substantial task for a group to conduct the assessments. The Working Group recommends, therefore, that self-assessments be undertaken using the revised matrix, WGCST(16)16. However, it would be more consistent with the review of the Greenland salmon fishery if these self-assessments were then subject to review. The Working Group discussed options for undertaking this review process and the timelines. The Group noted that its report and recommendations on the process will be considered by the West Greenland Commission at both its Inter-sessional and Annual Meetings in June 2016. The Working Group recommends that, thereafter, the Parties/jurisdictions be requested to complete their self-assessments by 31 December 2016 using the agreed matrix. These self-assessments could then be reviewed in 2017 either by:

1. a further Working Group established by the West Greenland Commission;
2. the West Greenland Commission itself at an inter-sessional meeting; or
3. the Implementation Plan/Annual Progress Report (IP/APR) Review Group.

7.6 It was recognised that while the IP/APR Review Group has considerable knowledge of the measures contained in the Implementation Plans and that this could assist the review of the six tenets assessments, not all Members of the Commission are represented on that Group. The Working Group recommends that the review be undertaken within the Commission, ideally by a Working Group (option 1 above) comprising representatives of the Members of the West Greenland Commission and the accredited NGOs, which would report to the Commission's 2017 Annual Meeting or an inter-sessional meeting if held. The Working

Group would hope that any fishery management issues that are identified through the review process would be addressed by the Parties/jurisdictions in a timely fashion to the extent feasible.

7.7 The Working Group on Monitoring and Control had suggested that the six tenets might be applied by all NASCO Parties, but this had not been resolved at the 2015 Annual Meeting. The Working Group recommends that the utility of the 2017 six tenets assessment be considered by the West Greenland Commission with regard to deciding on next steps, including incorporating appropriate elements of the six tenets in the next cycle of Implementation Plans.

7.8 The revised matrix as agreed by the Working Group, WGCST(16)16, is contained in Annex 4.

8. Any other business

8.1 There was no other business.

9. Report of the Meeting

9.1 The Working Group agreed a report of its meeting.

10. Close of meeting

10.1 The Chairman thanked all participants for their contributions, wished them a safe journey home and closed the meeting.

Annex 1

List of Participants

Canada

Mr Tony Blanchard

Denmark (in respect of the Faroe Islands and Greenland)

Ms Katrine Kærgaard

European Union

Ms Francesca Arena
Dr Ciaran Byrne (Chairman)
Mr Seamus Connor
Mr Cathal Gallaher
Mr Denis Maher
Mr Marc Owen

USA

Mr Tim Sheehan

NGO

Mr Dave Meerburg

Secretariat

Dr Peter Hutchinson

Annex 2

WGCST(16)14

Meeting of the West Greenland Commission Ad hoc Working Group on the Application of the Six Tenets for Effective Management of an Atlantic Salmon Fishery

Inland Fisheries Ireland, 3044 Lake Drive, Citywest Business Campus, Dublin, Ireland

16 and 17 February 2016

Agenda

1. Opening of the Meeting
2. Adoption of the Agenda
3. Appointment of a Rapporteur
4. Consideration of the Terms of Reference
5. Review and evaluation of the self-assessments
6. Development of a framework for evaluation of salmon fisheries
    a) review of WGCMC(14)2 to identify where clarification of the text and/or re-organisation of the matrix is needed
    b) identification of any additional tenets to enhance relevance and applicability of the tenets
7. Development of standardised protocols on the application of the six tenets matrix
    a) level of categorisation of fisheries (e.g. commercial, recreational and subsistence)
    b) qualitative scoring system (e.g. red, yellow, green)
    c) ancillary information to support the scoring system (e.g. tenet-specific footnotes);
    d) self-assessment versus evaluation by a Working Group
8. Any other business
9. Report of the Meeting
10. Close of the Meeting

Annex 3

WGCST(16)18

Compilation of Self-Assessments submitted to the Meeting of the West Greenland Commission Ad Hoc Working Group on the Application of the Six Tenets for Effective Management of an Atlantic Salmon Fishery

Canada, WGCST(16)3

NASCO Self-Assessment – Canada's Recreational Fishery				
Tenet	Poor	Fair	Good	**Rationale**
1. Known pool of participants				• Any individual fishing recreationally for Atlantic salmon, even for the purposes of catch and release, requires an Atlantic salmon specific recreational licence. Information registered with the licence includes name and mailing address. • Exception: Province of Prince Edward Island where retention of Atlantic salmon is not allowed and Atlantic salmon can be caught and released using the general freshwater fish recreational licence. • The pool of participants is generally compiled post-season although information can be retrieved at any time.
2. Effectively limiting catch				• The number of provincial licences which can be issued annually are not limited although the overall number of licences issued has been stable or is in decline. • There are individual seasonal bag limits for each licence, the values vary by province and have been reduced in recent years. There are daily catch and release limits as well as daily retention limits. • Mandatory carcass tagging of all retained Atlantic salmon – the carcass tags are specific to the individual licence. • No carryover of carcass tags is allowed. • In Newfoundland, the seasonal bag limit per licence varies with the status of the river and on only a handful of rivers may the full complement of carcass tags be used in any season. • In some rivers of Quebec, individual river quotas are established and the retention fishery is closed once the quota for the river has been harvested.

				• With the exception of some rivers in the Province of Quebec and where allowed, only small salmon (< 63 cm fork length, primarily one-sea-winter salmon) can be retained. • There are defined fishing seasons with all salmon fisheries closed by October 31 at the latest. • In 2015, large portions of eastern Canada were under mandatory catch and release fishing for all salmon, regardless of size. • Fly fishing with artificial flies is the only gear which can be used to direct for Atlantic salmon. In some areas, additional constraints include barbless, single hooks. No lures, bait, or spinning or other cast gear are allowed. • Sale of all salmon is prohibited.
3. Accurate, effective and timely reporting				• Reporting requirements vary by jurisdiction. • In Quebec, mandatory reporting of all retained catches must be done within 48 hours of fishing or immediately after fishing has concluded. Reporting can occur by telephone, over the internet or at designated and manned stations. Reporting of catch and released salmon is generally voluntary. • In Newfoundland & Labrador and Nova Scotia, a licence stub attached to every licence issued must be completed by the individual and returned at the end of the fishing season. Information recorded includes estimates of total season effort by river, estimates of total season caught and released fish by river, and the specific date and river location of any retained salmon. Return of licence stubs is mandatory although the tracking system to enforce mandatory reporting requires electronic upgrades of the licence issuing system. Reporting rates are in the range of 50% or greater. Total catches are estimated based on the ratio of returned licence stubs to total licences issued. • For New Brunswick, voluntary licence stubs are provided but the voluntary return rate is low and not used for tracking catches and harvests. Alternate methods for estimating catches and harvests are based on applying monitored exploitation rates to estimates of annual returns of salmon derived in years when post-season mail-out surveys of angling catches were conducted. • Catches and harvests are compiled by Salmon Fishing Areas annually and compiled for Canada to report domestically and to NASCO.
4. Effective communication of management rules				• Annual fishing plans, guides and summary of regulations provided with each licence. • Information posted on web-sites, social media, radio etc. • Information and communication occurs through formal salmon advisory committees. • Regulatory changes and other information issued through press releases.

				• Summary reports provided to the public.
5. Control and enforcement				• Federal fishery officers and provincial conservation officers have reciprocal enforcement powers under each other's legislation increasing overall enforcement capabilities/presence. Joint patrols are utilized whenever possible. • Enforcement, compliance and monitoring programs involving user groups and aboriginal organizations (e.g. fishery guardians, aboriginal guardians). • Legal action when required.
6. Fishery sampling				• There is no directed sampling of recreational fishery catches and harvests. • Total weight of salmon harvested is derived from estimated harvests of salmon by size group (small salmon are less than 63 cm fork length; large salmon are greater than or equal to 63 cm fork length) to which a mean weight of salmon in the size group is derived from fishery independent monitoring data of stocks within the river or in neighbouring rivers. • In Quebec, fish registered at stations are sampled for length, and in some cases for weight, sex is determined and scale samples collected for age determinations. • A pool of voluntary anglers complete fishing logbooks in Nova Scotia and record information on fishing effort, catches, harvests, size of fish retained and in some instances, when a retention season exists, provide scale samples of retained salmon.

NASCO Self-Assessment – Canada's Subsistence Fishery				
Tenet	Poor	Fair	Good	**Rationale**
1. Known pool of participants				• Food, social and ceremonial (FSC) fisheries are conducted under licences issued by DFO to aboriginal organizations. • All aboriginal groups with agreements and communal fishing licences are known and individuals fishing under the communal licence must be identified. • There is a subsistence trout fishery by residents of Labrador where by-catch of salmon is allowed. All participants must obtain a licence and contact information is recorded.

2. Effectively limiting catch				• Communal FSC licences define the quantity and in some instances the size of salmon that may be harvested, the authorized fishing methods, and the locations where the fishing may occur. • There is mandatory carcass tagging of retained salmon. • Sale of all salmon is prohibited.
3. Accurate, effective and timely reporting				• Mandatory reporting of FSC harvests is required by condition of licence. • Reporting compliance varies from poor to excellent among the communities. • The best level of reporting occurs in the Labrador subsistence fisheries. Logbooks/ catch logs are issued to individual fishers and compiled at the end of the season.
4. Effective communication of management rules				• FSC licences are negotiated annually with the Government of Canada and signed by both parties. • Consultations occur annually on the FSC fishery. • Aboriginal groups are aware of the rules/management measures of the fishery. • Some aboriginal groups provide information on web-sites, social media, radio etc. • Information and communication occurs through formal salmon advisory committees. • Regulatory changes and other information issued through press releases.
5. Control and enforcement				• Aboriginal organizations participating in FSC fisheries generally have their own conservation officers that work co-operatively with DFO to educate and enforce management measures. • Fishery officers, fishery guardians and aboriginal fishery guardians carry out monitoring, control and surveillance activities within FSC fisheries. • Enforcement action protocols have been established with some aboriginal groups. • Federal fishery officers and provincial conservation officers have reciprocal enforcement powers under each other's legislation increasing overall enforcement capabilities/presence. Joint patrols are utilized whenever possible. • Legal action when required.
6. Fishery sampling				• Fishery sampling is limited in many FSC fisheries. • In Labrador, Aboriginal Conservation Officers and Fisheries Guardians directly subsample the catches for length, weight, scales, and tissues for genetic stock identification. • Logbooks are completed in Labrador subsistence fisheries and information recorded includes length and/or weight of salmon harvested, date, and location.

				• In some FSC fisheries of the Miramichi in New Brunswick, full catch and harvest data including date, size, scales for ageing, recapture data from external tags, and tagging with external tags prior to release are activities and information provided by the aboriginal groups in support of the stock assessment.
NASCO Self-Assessment – Canada's Commercial Fishery				
Tenet	Poor	Fair	Good	**Rationale**
1. Known pool of participants				• The last commercial fishery for Atlantic salmon in eastern Canada closed in 2000 • No licences are issued. Before the closure the pool of participants was known. • Sale of wild (i.e. not aquaculture produced) Atlantic salmon is prohibited.
2. Effectively limiting catch				• No licences are issued. • Sale of wild (i.e. not aquaculture produced) Atlantic salmon is prohibited. • Prior to the closure, catch limits and effort controls were in place. • No by-catch retention of Atlantic salmon in commercial fishing gear or other gears not permitted under recreational fisheries and subsistence fisheries is allowed. All incidentally captured Atlantic salmon must be returned to the water as soon as it is captured and in a manner that results in the least harm to the fish.
3. Accurate, effective and timely reporting				• No commercial fishery for Atlantic salmon.
4. Effective communication of management rules				• All users are aware of the rules/management measures related to the closure of the commercial fishery for Atlantic salmon. • Information posted on web-sites, social media, radio etc. • Information and communication occurs through formal salmon advisory committees.
5. Control and enforcement				• Federal and provincial fishery officers, fishery guardians and aboriginal fishery guardians carry out monitoring, control and surveillance activities in a number of commercial fisheries to monitor by-catch levels and ensure compliance with the by-catch regulations for salmon.

				• Legal action is taken when required.
6. Fishery sampling				• No sampling because the commercial fishery is closed.

European Union – France, WGCST(16)12

Tenet	Description	Score	Comment
COMMERCIAL FISHERY			
1	Known pool of participants	G	In Adour estuary, all fishermen must have a licence; fishing is allowed from March to July but prohibited for 25% of each week.
2	Effectively limiting catch	G	Harvest is generally limited by effort controls, with licence numbers, gear specifications and fishing times adjusted to maintain stocks above CL, when the river has CL.
3	Accurate, effective and timely reporting	G	All fishers are required to report their catches. Catch declarations for migratory salmonids have been required since 1987.
4	Effective communication of management rules	G	All netsmen are made aware of the rules applying to their fishery by the the Regional Committee of Marine Fisheries and Aquaculture.
5	Control and enforcement	G	Environmental and Maritime Affairs units participate in these fisheries enforcement.
6	Fishery sampling	G	The national census enables the Migratory Salmonid Catches Interpretation Centre (CNICS) to evaluate samples and tags and characterize size, weight and age of individual fish caught. The CNICS also monitors real-time fisheries in order to close them when the total allowable catch (TAC) is reached and to ensure sustainability of populations.
RECREATIONAL FISHERY			
1	Known pool of participants	G	Management in Brittany and Normandy focuses on TACs. On the Adour, rod fishing management focuses on licences: each of the 1000 fishermen is allowed to catch 4 salmon between March and July and during 2 weeks in September.
2	Effectively limiting catch	G	Licence numbers are not limited but, following the procedure used by ICES for the provision of catch advice, the harvest option that provides a 75% chance of meeting the CL for a given stock is recommended by scientists. Given the uncertainty in the data and the use of a risk analysis to allow for some of this uncertainty, a further limitation is applied to the recruit per spawner index of each river.

3	Accurate, effective and timely reporting	G	All fishers are required to report their catches. Catch declarations for migratory salmonids have been required since 1987.
4	Effective communication of management rules	G	All anglers are made aware of regulations and information is available on fishing associations and “migratory fish” associations”.
5	Control and enforcement	G	Environmental units and angling associations participate in these fisheries enforcement.
6	Fishery sampling	G	The national census enables the Migratory Salmonid Catches Interpretation Centre (CNICS) to evaluate samples and tags and characterize size, weight and age of individual fish caught. The CNICS also monitors real-time fisheries in order to close them when the total allowable catch (TAC) is reached and to ensure sustainability of populations.

European Union – Ireland, WGCST(16)7

Recreational Fishing		
Tenet	**Analysis Rationale**	**Status**
Known Pool of Participants	All participants are licenced, mandatory catch reporting, all carcasss tags tied to an individual	
Effectively Limiting Catch	All 143 Salmon rivers have CLs, no exploitation on rivers not achieving CL, annual advise and management legislation, all harvest salmon carcass tagged (Br/Bl), MSW and 1SW management	
Accurate, effective and timely reporting	Habitats Directive Reporting, Annual catch statistics, annual data used for SSCS, Angling log book returns, 30 fish Counters	
Effective communication of management rules	Annual control of fishery legislation, 30 public consultation, district committee, licence books and information leaflets	
Control and Enforcement	New technologies, catchment enforcement officers, carcass tagging scheme, public pressure	
Fishery sampling	Genetics, scales (age, growth), weight, counters, disease etc… contribute to scientific advice	
Commercial Fishing		
Tenet	**Analysis Rationale**	**Status**
Known Pool of Participants	All participants are licenced (fishermen and dealers), all carcasss tags tied to an individual	
Effectively Limiting Catch	Only exploiting stocks above CL, all fishing subject to TAC, seasonal, engine and effort restrictions also in place. No MSW harvest.	
Accurate, effective and timely reporting	All log books reporting mandatory required for scientific annual advice	
Effective communication of management rules	12 miles to sea, 25+ sea going ribs, Aer Corp and Navy, commercial inspections	
Control and Enforcement	12 miles to sea, 25+ sea going ribs, Aer Corp and Navy, commercial inspections	
Fishery sampling	Genetic, special and temporal analysis, scale (growth, age and ICPMS), Marine survival	

European Union – Spain (Asturias), WGCST(16)11

YES: The tenet is effectively implemented in the current management plan
NO: The tenet is not implemented in the current management plan

Recreational Fishery

Tenet	Description	Score	Comment
1	Known pool of participants	**YES**	All fishermen must have a licence, which specifies where they may fish.
2	Effectively limiting catch	**YES**	Fishermen have to comply with catch limits, on a daily and on an annual basis. Minimum sizes are established as well.
3	Accurate, effective and timely reporting	**YES**	Catch data are collected by river. Tagging is compulsory.
4	Effective communication of management rules	**YES**	Fishing regulations are published and easily accessible.
5	Control and enforcement	**YES**	Enforcement is done by the "Guardería de Pesca".
6	Fishery sampling	**YES**	All catch data and biometric data are collected (size, scales, blood, genetic material, etc…).

European Union – Spain (Cantabria), WGCST(16)9

YES: The tenet is effectively implemented in the current management plan
NO: The tenet is not implemented in the current management plan

Recreational Fishery

Tenet	Description	Score	Comment
1	Known pool of participants	**YES**	All fishermen must have a licence, and in most salmon rivers they shall also have a special licence by area. In all case, the law specifies where, when and how the fishery can be carried out.
2	Effectively limiting catch	**YES**	Fishing pressure is controlled through the number of licences delivered and the number of salmons fished per day. For each river a maximum number of fish that can be fished is established. When this ceiling is reached, the fishing season is closed.
3	Accurate, effective and timely reporting	**YES**	All salmons which are caught shall be tagged by the "Técnicos Auxiliares del Medio Natural" ("personnel of the environment service"), who fill in a form with the following information: sex, date and place of catch, fishing gear, biometric data (weight, length and maximum circumference). This information is thereafter introduced in a database.
4	Effective communication of management rules	**YES**	All fishermen have the obligation to know the rules they have to comply with. The information is available in the official journal of Cantabria, on the internet and in divulgation leaflets that are published before each fishing season. Fishing clubs and associations are also active in communicating and sharing the relevant information.
5	Control and enforcement	**YES**	The Técnicos Auxiliares del Medio Natural are the oficial control body that is responsable for the monitoring and enforcement of the legislation on salmon fishery.
6	Fishery sampling	**YES**	Besides the data collection referred to under tenet 3, every year a sampling programme is carried out at sea (territorial waters of Cantabria) to monitor the fish population through sampling with electric fishing. This programme is particularly focussed on salmon and trout.

European Union – Spain (Galicia), WGCST(16)10

YES: The tenet is effectively implemented in the current management plan
NO: The tenet is not implemented in the current management plan

Recreational Fishery

Tenet	Description	Score	Comment
1	Known pool of participants	**YES**	All fishermen must have a specific licence for salmon fishery. The authorities keep a register of licences which have been issued.
2	Effectively limiting catch	**YES**	Each fishing season, catch limits are established by river, based on the best information available and on specific management objectives.
3	Accurate, effective and timely reporting	**YES**	All salmons which are caught shall be tagged/registered. Tagging is done by authorized personnel and is necessary to certify the origin of the catch and the salmon characteristics (length, weight, etc). Without tagging transport is not allowed.
4	Effective communication of management rules	**YES**	The fishing regulations are published several months before the opening of the fishing season and are easily accessible (on the internet). Divulgation material (leaflets) is also produced.
5	Control and enforcement	**YES**	A surveillance service is in charge of controlling the correct implementation of the rules.
6	Fishery sampling	**YES**	Besides the data collection referred to under tenet 3, every year a sampling programme is carried out at sea (territorial waters of Cantabria) to monitor the fish population through sampling with electric fishing. This programme is particularly focussed on salmon and trout. An inventory of juveniles in each river is drawn up on an annual basis, which is as accurate as possible. In certain rivers there are also fish counters and control stations for adults.

European Union – Spain (Navarra), WGCST(16)8

YES: The tenet is effectively implemented in the current management plan
NO: The tenet is not implemented in the current management plan

Recreational Fishery

Tenet	Description	Score	Comment
1	Known pool of participants	**YES**	All fishermen must have a licence, which specifies where they may fish.
2	Effectively limiting catch	**YES**	Fishermen have to comply with a daily catch limit (1 salmon per day). Minimum sizes are established as well.
3	Accurate, effective and timely reporting	**YES**	Catch data are collected by river. Tagging is compulsory.
4	Effective communication of management rules	**YES**	Fishing regulations are published and easily accessible. A list of FAQs is also available on the Navarra's government website. A divulgation leaflet is also downloadable from the website/
5	Control and enforcement	**YES**	Controls are carried out by the Forestry department. In addition, fishermen are invited to fil in a questionnaire after every fishing day.
6	Fishery sampling	**YES**	A sampling programme is in place to estimate the salmon population. Scale samples are taken. Biometric data are collected as well.

European Union – UK (England and Wales), WGCST(16)6

Tenet	Description	Score	Comment
COMMERCIAL FISHERY			
1	Known pool of participants	G	All fishermen must have a licence; this specifies where they may fish and what gear they may use.
2	Effectively limiting catch	G	Harvest is generally limited by effort controls, with licence numbers, gear specifications and fishing times adjusted to maintain stocks above CL in >4 year out of 5 or to return stocks to this state. Catch limits are also applied in some fisheries where greater control is required.
3	Accurate, effective and timely reporting	G	All fishers are required to report their catches; all net caught fish must have a carcass tag applied and there is near to 100% reporting
4	Effective communication of management rules	G	All netsmen are made aware of the rules applying to their fishery through direct mailings; additional information is available on the internet.
5	Control and enforcement	G	The country is sub-divided into regions, each of which has a team of fishery enforcement officers who monitor fishing activities.
6	Fishery sampling	G	Sampling/data collection is undertaken to meet requirements of ICES (as required under EU Data Collection Framework) and for stock specific assessments; includes fishery and stock surveys
RECREATIONAL FISHERY			
1	Known pool of participants	G	All anglers must have a licence as well as permission to fish on specific waters
2	Effectively limiting catch	G	Licence numbers are not limited but vary little between years; gear and fishing times are restricted to limit overall catch in line with net restrictions (see above); catch and release is compulsory on some depleted stocks; voluntary restrictions (imposed by clubs/associations) may also apply.
3	Accurate, effective and timely reporting	G	Reminders are issued to licence holders to improve catch reporting; unreported catch is estimated is estimated to be about 10% using the method of Small (1997)
4	Effective communication of management rules	G	All anglers are made aware of regulations and information is available on the internet and through fishing clubs and associations.
5	Control and enforcement	G	Anglers are made aware of the rules though guidance documents and leaflets; additional information is available on the internet and supplied through fishing clubs and associations.
6	Fishery sampling	G	Sampling/data collection is undertaken to meet requirements of ICES (as required under EU Data Collection Framework) and for stock specific assessments; includes fishery and stock surveys

European Union – UK (Northern Ireland), WGCST(16)4

Tenet	Description	Score	Comment
COMMERCIAL FISHERY			
1	Known pool of participants	G	No commercial catch currently allowed until MTs attained for all rivers contributing to the fishery. If allowed all fishermen must have a licence; this specifies where they may fish and what gear type they may use.
2	Effectively limiting catch	G	Should commercial fishing be allowed catches would be restricted to ensure a high probability that contributing stocks attain CL by managing the number of carcass tags issued.
3	Accurate, effective and timely reporting	G	All fishermen are required to report their catches; all net caught fish must have a carcass tag applied and there is 100% reporting
4	Effective communication of management rules	G	All netsmen are made aware of the rules applying to their fishery through meetings and other written communications.
5	Control and enforcement	G	Fishery protection officers carry out regular patrols to monitor licensed operators and ensure no illegal fishing activity takes place.
6	Fishery sampling	G	Currently no commercial fisheries are operational but should commercial fisheries operate a sampling/data collection programme would be undertaken.
RECREATIONAL FISHERY			
1	Known pool of participants	G	All anglers must have a licence as well as permission to fish on specific waters
2	Effectively limiting catch	G	Licence numbers are not limited; catch and release is compulsory on all stocks not meeting their MT; where fish can be taken the number is restricted by the allocation of carcass tags to ensure only the surplus above CL is taken; methods are restricted to enhance the effectiveness of catch & release; voluntary restrictions (imposed by clubs/associations) may also apply.
3	Accurate, effective and timely reporting	A	It is not possible to issue reminders to licence holders to improve catch reporting though work is underway to create a new licensing system which would enable this to happen; it is a legal requirement to report catches annually, Catch returns are poor usually around 25%

4	Effective communication of management rules	G	All anglers are made aware of regulations and information is available on the internet and through fishing clubs and associations. Regular meetings are held with key stakeholder groups.
5	Control and enforcement	G	Anglers are made aware of the rules though guidance documents and leaflets; additional information is available on the internet and supplied through fishing clubs and associations. Many angling clubs & fishery owners have their own Private Water Bailiffs for the enforcement of fisheries legislation in their waters and DCAL have provided training for them.
6	Fishery sampling	G	Sampling/data collection is undertaken to meet requirements of ICES (as required under EU Data Collection Framework) and for stock specific assessments; includes fishery and stock surveys.

European Union – UK (Scotland), WGCST(16)5

Tenet	Description	Score	Comment
COMMERCIAL FISHERY			
1	Known pool of participants	G	Salmon fishing in Scotland is a heritable right. Extents of all fisheries are known, as are gear types used. Gear types may be restricted to certain areas.
2	Effectively limiting catch	G	Harvest is limited by effort control. Killing outwith estuary limits has been prohibited for a period of three years. In estuaries and rivers, the killing of salmon will be managed on an annual basis by categorising fishery districts and Special Areas of Conservation (SACs)) according to the probability of stock abundance meeting CL for the stock. Three categories are used. Meeting CL in • 4 out of last 5 years - exploitation is sustainable therefore no additional management action is currently required. • 3 out of 5 years - management action is necessary to reduce exploitation; mandatory catch and release will not be required in the first instance, but this will be reviewed annually. Production of a conservation plan is required in consultation with Marine Scotland. • ≤ 2 out of 5 years - exploitation is unsustainable therefore management actions required to reduce exploitation for 1 year i.e. mandatory catch and release (all methods). Production of a conservation plan is required in consultation with Marine Scotland. In addition, to protect early running salmon, the killing of salmon is prohibited before 1st April (1st May in the Esk district).
3	Accurate, effective and timely reporting	G	All fisheries are required to report monthly catch and effort data. Forms are issued annually as are further reminders and final notices as required. Reporting rates between 1997 and 2014 have varied between 93% and 96%.

			All net caught fish to be sold commercially must have a carcass tag.
4	Effective communication of management rules	G	Contact information is available for all fisheries and contact is maintained through direct mailing. Information is also available on the internet. Regular engagement with representative bodies, consultation events and online forums.
5	Control and enforcement	G	Local management is undertaken by 41 District Salmon Fishery Boards DSFBs who have a statutory responsibility to protect and improve salmon and sea trout fisheries. Both DSFBs and Scottish Government may appoint water baliffs whose responsibility is to enforce laws relating to salmon and trout.
6	Fishery sampling	G	Sampling/data collection is undertaken to meet requirements of ICES (as required under EU Data Collection Framework) and for stock specific assessments; includes fishery and stock surveys In addition traps and fish counters are used to collect biological information on the stock.
	RECREATIONAL FISHERY		
1	Known pool of participants	G	Salmon fishing in Scotland is a heritable right. Locations of active fisheries are known.
2	Effectively limiting catch	G	Management of is the same as for nets. Killing outwith estuary limits has been prohibited for a period of three years. In estuaries and rivers, the killing of salmon will be managed on an annual basis by categorising fishery districts and Special Areas of Conservation (SACs)) according to the probability of stock abundance meeting CL for the stock. Three categories are used. Meeting CL in • 4 out of last 5 years - exploitation is sustainable therefore no additional management action is currently required. • 3 out of 5 years - management action is necessary to reduce exploitation; mandatory catch and release will not be required in the first instance, but this will be reviewed annually. Production of a conservation plan is required in consultation with Marine Scotland.

			• ≤ 2 out of 5 years - exploitation is unsustainable therefore management actions required to reduce exploitation for 1 year i.e. mandatory catch and release (all methods). Production of a conservation plan is required in consultation with Marine Scotland. In addition, to protect early running salmon, the killing of salmon is prohibited before 1st April (1st May in the Esk district). Local restrictions, imposed by DSFBs, proprietors, clubs or associations may also apply.
3	Accurate, effective and timely reporting	G	All fisheries are required to report monthly catch (retained and released separately) data. Forms are issued annually as are further reminders and final notices as required. Reporting rates between 1997 and 2014 have varied between 93% and 96%.
4	Effective communication of management rules	G	Contact information is available for all fisheries and contact is maintained through direct mailing. Information is also available on the internet. Regular engagement with representative bodies, consultation events and online forums
5	Control and enforcement	G	Local management is undertaken by 41 District Salmon Fishery Boards DSFBs who have a statutory responsibility to protect and improve salmon and sea trout fisheries. Both DSFBs and Scottish Government may appoint water bailiffs whose responsibility is to enforce laws relating to salmon and trout.
6	Fishery sampling	G	Sampling/data collection is undertaken to meet requirements of ICES (as required under EU Data Collection Framework) and for stock specific assessments; includes fishery and stock surveys In addition traps and fish counters are used to collect biological information on the stock.

United States, WGCST(16)2

		Sectors		
Tenet	Description	Sustenance	Recreational	Commercial
1	Known pool of participants	A	A	A
2	Effectively limiting catch	B	B	B
3	Accurate, effective and timely reporting	Not Applicable		
4	Effective communication of management rules		C	D
5	Control and enforcement	E	E	E
6	Fishery sampling	Not Applicable		

Explanations for the table:

A (tenet 1 – Pool of participants) - It is illegal to fish for or possess Atlantic salmon in the United States, and, thus, there are no participants in a fishery. The last recreational fishery for sea-run salmon occurred in 2008; the fishery had strict individual permit requirements for each participant.

B (tenet 2 – Limiting catch) - As specified by law, there is no allowable catch of Atlantic salmon in the United States and monitoring and enforcement activities ensure illegal harvests are de minimis. Information on the few cases of illegal poaching is included in our annual progress report.

N/A (tenet 3 on Reporting) - This tenet is not currently applicable in the United States because we have no fishery. However, we do query U.S. landings, dealer and fishery observer databases pertaining to other fisheries annually to determine if any illegal catch has been reported or observed.

C (tenet 4 - Communication of management rules: Recreational fisheries) - There are stringent and extensive regulations governing recreational fishing published on the internet for Maine (http://www.eregulations.com/maine/fishing/salmon-information/) and southern New England as well (http://www.fws.gov/r5crc/fishing_regulations.htm; http://www.mass.gov/eea/agencies/dfg/dfw/laws-regulations/hunting-and-freshwater-fishing-laws.html); these are also available at local government buildings, sporting goods stores, and outfitters. Fishing regulations explain that sea-run salmon are endangered and cannot be removed from the water.

D (tenet 4 - Communication of management rules: Commercial fisheries) - With specific regard to commercial Atlantic salmon fisheries, the United States has a fishery management plan in place, which was implemented by the National Marine Fisheries Service in 1988. The plan established explicit U.S. management authority over all Atlantic salmon of U.S. origin. The plan was intended to complement state salmon management programs in coastal and inland waters and federal management authority over salmon on the high seas, which had been conferred to the United States, as a signatory nation to NASCO. The FMP prohibits possession of Atlantic salmon and any directed or incidental (bycatch) commercial fishery for Atlantic salmon in federal waters.

E (Tenet 5 - Control and enforcement) - U.S. control and enforcement is focused on ensuring there is no harvest of Atlantic salmon in the United States, and this work is carried out on the water by State game wardens and federal law enforcement agents. U.S. control and enforcement details are provided each year in our APR.

N/A (tenet 6 - fishery sampling) - Given that there is no U.S. fishery for Atlantic salmon, we do not have a domestic sampling program for that species. However, NMFS's Northeast Fishery Observers are trained in the identification of Atlantic salmon should bycatch occur in other U.S. fisheries, and, as noted, we query the Fishery Observer Program database at least annually and report on any bycatch that may be found in our APR. In addition, the United States is actively involved in supporting implementation of the Atlantic salmon sampling program with respect to the West Greenland fishery, including by deploying samplers, conducting analyses of samples taken, and reporting relevant findings.

Annex 4

WGCST(16)16

Revised matrix for the application of the six tenets for effective management of an Atlantic salmon fishery

This revised matrix was developed as an output of the Ad Hoc Working Group on the Application of the Six Tenets for Effective Management of an Atlantic Salmon Fishery. This Working Group reviewed self-assessments undertaken by the Parties/jurisdictions and proposed changes to the matrix that was applied to the salmon fishery at West Greenland (see WGCMC(14)14). It is intended to be a simple and visual approach to understanding the effectiveness of the management of salmon fisheries conducted by Members of the West Greenland Commission. In assigning a status to each tenet, Parties/jurisdictions should take into account the questions provided as a basis for the assessment and also provide a concise rationale for the status that has been assigned.

Category of fishery: ***Please complete for each category of fishery (Commercial, Recreational or Other (e.g. sustenance, scientific fisheries and by-catch) as appropriate)***				
Tenet No.	**Description of tenet**	**Basis for the assessment**	**Status (G, A or R)**	**Concise rationale for status assigned**
1	Known pool of participants	1. Is a statutory license system and/or register in place? 2. Does that system define the entire pool of participants? 3. Is the entire pool of participants known prior to or during the season?		
2	Effectively limiting catch and/or harvest	1. Are measures in place to effectively limit catch and/or harvest e.g. harvest restrictions (including quotas), effort restrictions (including gear restrictions, ceiling on the number of licences, seasonal closures) or a combination of both? 2. Are measures consistent with NASCO's Guidelines for the Management of Salmon Fisheries, CNL(09)43?		
3	Accurate, effective and timely reporting	1. Is a mandatory system in place to ensure accurate, effective and timely reporting by all participants in the fishery?		

		2. Are assessments conducted to confirm the accuracy of catch returns? 3. Are the outputs from 1 and 2 above used to effectively limit catch and/or harvest in accordance with tenet 2?		
4	Effective communication of management rules	1. Are measures in place to effectively communicate with all participants in the fishery in a timely fashion? 2. Does the communication process explain clearly to participants in the fishery the policies underpinning the management rules e.g. license obligations, sanctions, any in-season management adjustments and fishery closure information?		
5	Control and enforcement	1. Are control and enforcement measures in place and are these considered to be effective? 2. Are adequate sanctions in place to deter violations?		
6	Scientific fishery sampling	1. Are scientific fishery sampling programmes in place to provide additional inputs to the scientific assessment process? 2. Are results of these programmes used to inform the management of the fishery?		

One assessment of status should be assigned to each of the six tenets using colour codes as follows:

- Green (G) indicates that the principle outlined in the tenet is being met by the current management regime, although further improvements might still be possible;
- Amber (A) indicates that the tenet is currently being partially met and improvements are needed to the current management regime; and
- Red (R) indicates that the tenet is not currently being met and that significant improvements are needed to the current management regime.

Six Tenets of an Effective Management System for Atlantic Salmon Fisheries (updated from WGCMC(14)2)

1. Known pool of participants

It is essential that the entire pool of potential participants in a fishery be known. Knowing this will allow for *inter alia*:

- Developing comprehensive fishery management plans including communication plans with all potential participants with regard to: regulations, in-season modifications, limits and closures;
- Estimating the maximum fishing effort potential and evaluating the impacts of this effort if activated; and
- Developing effective control and enforcement systems.

2. Effectively limiting catch and/or harvest

Measures to limit catch and/or harvest should be set prior to the start of the fishery, taking into account scientific advice. These measures should be determined by evaluating the risk of not meeting agreed upon management objectives under various levels of catch and/or harvest. Deviation from managing in accordance with scientific advice should only be done in cases of extreme need and should still minimise the potential for adverse effects on the stocks. Tools to effectively limit catch and/or harvest include catch and/or harvest restrictions (e.g. quotas), effort restrictions (e.g. gear restrictions, time/area closures, ceiling on the number of licences, seasonal closures or restrictions, bag limits, etc.) or through a combination of the two. A singular catch and/or harvest limit or user group specific catch and/or harvest limits can be derived as appropriate. If user group specific catch and/or harvest limits are employed, then user group specific risk analyses and consequence of exceeding catch and/or harvest limits must be evaluated.

3. Accurate, effective and timely reporting

Reporting is critical for the responsible management of any fishery. Catch and/or harvest data are the metric by which fishery managers monitor the progression of a fishery and accurate, effective and timely data collection programmes are critical tools necessary to support the reporting process. Catch and/or harvest data are needed to make informed management adjustments, such as adjusting bag limits or closing the fishery as needed, to prevent exceeding catch limits. A breakdown in the data collection and reporting process also erodes the quality of the scientific advice for the fishery. Compromised scientific advice may impede the effective management of the resource and reduce or forego future harvest. Data collection and reporting systems need to be tailored to each sector of the fishery, must align temporally with the management needs and must allow for aggregation for total estimates of harvest.

An effective reporting system has three primary qualities:

- Accuracy – Data collection programmes are an essential tool to accurately and precisely estimate catch and/or harvest and effort. Catch and/or harvest estimates can

entail counts of individual fish, estimates of total weight or both (preferred). Both fishery-dependant and fishery-independent data collection programmes are essential;

- Effectiveness – Reporting procedures must effectively transfer required catch information to fishery managers. Required information related to catch and associated fishing activities must be clearly defined and obtainable. Procedures must be in place to allow fishers to submit their catch and related information with a reasonable expenditure of effort; and
- Timeliness – Reporting procedures must be developed to mirror management temporal requirements. Catch and/or harvest data must be reported and summarised according to pre-defined schedules to allow management determinations to be made to prevent exceeding catch limits.

4. Effective communication of management rules

Fishery managers need effective tools to communicate management rules, including licence obligations, quota limits, any in-season management adjustments and fishery closure information, to fishers. Effective methods for communication must be developed for each sector of the fishery and must be designed to effectively communicate with all participants in a timely fashion, regardless of the sector in which they participate.

5. Control and enforcement

To ensure that stakeholders have faith in the effectiveness of any management plan, there must be an adequate level of control and enforcement to ensure that management controls (quota, seasonal, gear limitations, etc.) are adhered to and to ensure that fishery data are accurate and reported to fishery managers according to the criteria set forth within the fishery management plans. Some examples of different control and enforcement techniques that can be used to ensure effective implementation of the fishery management plan and demonstrate the robust quality of fishery data include:

- Fishing vessel and licence inspections, checks for adherence to regulatory measures, gear inspections;
- Conducting inspections and sampling in factories, ports, markets and businesses receiving salmon and matching commercial records against reported landings; and
- Comparing reported landings data against fishery-independent sampling or post-fishing season surveys, which can also provide a better understanding of fishing patterns.

Should issues of non-compliance arise during such checks, regulatory agencies must have and be willing to take effective legal recourse to address these problems, such as the ability to issue fines, seize catches or cancel fishing permits. Penalties must be severe enough to act as a deterrent.

6. Scientific fishery sampling

Fishery-dependent scientific surveys are essential to the effective management of a fishery. Fishery-dependant data collection and sampling programmes should be designed to provide unbiased random sampling of harvest and can provide critical inputs for the

fishery management and assessment process. These data often represent a truer characterisation of the exploited stock complex and provide for greater biological realism within stock assessment models compared to reported harvest rates or data collected only from fish processing centres. Fishery-dependent sampling programmes can also provide data to better understand effort and harvest patterns while providing a platform for additional sampling in support of ecological-based investigations into the mechanisms driving stock complex productivity. A more complete understanding of the productivity dynamics of the stock complex can translate into more effective management of the resource. Fishery-independent surveys may be preferred as they may provide a less biased assessment of the exploited stock complex. Unfortunately these programmes often require significant resources to support.