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MSC SUSTAINABLE FISHERIES CERTIFICATION

Addendum to the 4th Surveillance Audit for North West Atlantic Canada Longline Swordfish Fishery



4th Surveillance Audit

July 2017

Certificate Code	F-ACO-0057
Prepared For:	Nova Scotia Swordfishermen's Association
Prepared By:	Acoura Marine
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Background

Following publication of the 4th surveillance audit report for the North West Atlantic Canada Longline Swordfish Fishery and the 6th surveillance report for the North West Atlantic Canada Harpoon Swordfish Fishery on 18th April 2017, Acoura Marine Ltd, received by email, on 3rd May 2017, a MSC Technical Oversight¹ (TO) – see **Appendix 1**.

In summary, the TO concluded that the scoring rationale for Performance Indicator (PI) 1.2.2 (Harvest Control Rule) did not adequately justify a score of 80 for both fisheries, the score should be revised to 60 and the condition remain - see **Appendix 2**.

The scoring rationale and decision to close the condition had been agreed between the Acoura and MRAG America's audit teams as part of their on-going harmonisation of the Canadian and US longline swordfish certifications. Therefore, Acoura shared the TO with MRAG.

The two audit teams discussed the TO and agreed a joint response to the MSC. This was sent by email on 16th May 2017 along with a request by both teams to discuss, their rationale for re-scoring and closing the condition, with MSC - see **Appendix 3**.

A conference call was convened on 5th June 2017 between members of the Acoura and MRAG audit teams and members of the MSC Standards Team.

The Acoura and MRAG teams set out why they considered that the fishery met the SG80 requirements.

MSC agreed that the team's verbal explanation more clearly provided a rationale for meeting the SG80 requirements and, it was agreed that a revised scoring rationale would be provided in response to the TO and added as an addendum to the respective audit reports for the North West Atlantic Canada Longline and Harpoon Swordfish Fisheries.

The revised scoring rationale is included in **Appendix 4**.

¹ Technical Oversight (TO) is the process whereby MSC Fisheries Assessment Managers review assessment reports and raise findings for the assessment team to address. Technical Oversight is completed to maintain the quality of assessment reports, ensure consistent application of the Certification Requirements by assessment teams, and inform the MSC of areas where Certification Requirements are needed.



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Appendix 1 MSC Technical Oversight (TO)

Date 03/05/2017 Marine House Date 03/05/2017 Size Will Doate 03/05/2017 Size Will Doate 03/05/2017 Size Will Doate 03/05/2017 Doate 03/05/2017 Dear Paul Knapman Tel: +44 (10)207246 890 Dear Paul Knapman Tel: +44 (10)207246 890 Please find below the results of our partial review of compliance with the scheme requirements Ex: +44 (10)207246 890 Please find below the results of our partial review of compliance with scheme requirements Ex: +44 (10)207246 890 Dear Paul Knapman Tel: +4001 Tota and scheme requirements Class Facura Marine Ex: +44 (10)207246 890 Please find below the results of our partial review of compliance with scheme requirements Ex: +44 (10)207246 890 Class Poulder Poul Knapman Class Poulder Poul Knapman Fishery Name North West Atlantic Canada longline swordfish Poul Knapman Doument Reviewed Surveillance Report Potanis Fishery Name Potanis Fishery Name April Miser Potanis Canada longline swordfish Potanis Canada longline swordfish Doat Doat Pota 21 0.15 0.10 A revion otacon 1.10 20 21 0.15 0.20 2.10 1.20 2.10 1.20 2.2	within the surveillance report. Ho provided for the justification for '	d to support the PI 1.2.2. Scoring resorted with an for this perform MSC does not contract with a swordfish fisher resorted with a swordfish fisher the SCB justifies the SCB recommendation recommendati
15071 Major ECD-7 10.6.1 v 201 A retionale chall be precented to current the 10.1.2.7 Continuiticule 3: Within the latert currentlance 11.7.7	rue (notive) wendening wendening wendening wendening and an in exploritation rate is reduced as lin	d to support the PI 1.2.2. Scoring report for the N swordfish fisher 1.2.2. si (a) mee rescored with an for this perform MSC does not co MSC does not co istifies the SG8 justifies the SG8 recommendatio within the surve provided for the rule (HCR) being exploitation ratio



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	are approached is insufficient.	
	First, the HCR is not 'well-defined' in terms of the HCR	
	clearly stating what actions will be taken at what	
	specific trigger reference point levels" (as per the definition used from v2 01) Paraemah 7 of Rer 16-03	
	states that; "Further, while the HCRs are being	
	developed, should the biomass approach the level	
	which triggered the establishment of the previous	
	rebuilding plan (Rec. 99-04), then the commission shall adort a 10-vear rehuilding plan with harvest levels as	
	recommended by the SCRS, that will meet the	
	Commission's objectives of maintaining or rebuilding	
	stocks to Bmsy within the defined time period.".	
	Although the team alludes to the previous biomass	
	level being 0.65Bmsy, it is not clear what 'approaching'	
	means from a 'well-defined' point of view. For	
	example, if the biomass was to fall to be B <bmsy, is<="" it="" td=""><td></td></bmsy,>	
	not known whether 0.9Bmsy, 0.8Bmsy, etc would be	
	considered the level approaching 0.65Bmsy. If the	
	stock was to fall rapidly there is also no certainty that	
	the rebuilding plan would be enacted in a sufficient	
	manner and therefore 'ensure' the exploitation rate	
	was reduced.	
	Second, Rec 16-03 calls for the implementation of a 10-	
	year rebuilding plan similar to a previous rebuilding	
	plan that was enacted in 1999 when the swordfish	
	stock was low (Rec 99-02). However, this previous	
	rebuilding plan was deemed by the assessment team	
	to be 'generally understood.' Therefore, it is not clear	
	how a previously 'generally understood' HCR could	
	now be 'well-defined', especially considering the	
	uncertainties around the future rebuilding plan's	
	implementation.	
	Third, the relevant section highlighted by the team in	
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justify the score.
SG80 for P11.2.2. si (a) should be reduced to SG60 and the condition remain open, as the rationale does not
With consideration of the above, the current score of
"while the HCRs are being developed"
Paragraph 7 of Rec 16-03 includes the statement
the team's argument that SG80 is met, given that
considered a 'well-defined' HCR. Also, it does not help
a rebuilding plan would be enacted, not what would be
Rec 16-03 seems to more about a framework by which

This report is provided for action by the CAB and ASI in order to improve consistency with the MSC scheme requirements; MSC does not review all work products submit Conformity Assessment Bodies and this review should not be considered a checking service. If any clarification is required, please contact Adrian Gutteridge on + 61(0)2 : 6883 for more information.

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

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Appendix 2 Original harmonised scoring rationale

PI 1.2.2	60	80	100
There are well defined and effective harvest control rules in place.	Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	The selection of the harvest control rules takes into account the main uncertainties. Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	The design of the harvest control rules take into account a wide range of uncertainties. Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.

The MSC Interpretation on Harvest Control Rules (HCRs) distributed to CABs on 16 December 2015, explains that "'generally understood' HCRs do not need to be well defined or explicitly agreed, but there should be at least some implicit agreement supported by past management actions from which to understand that 'generally understood' rules exist, and there should be no reason to expect that management will not continue to follow such generally understood rules in future and act to be responsive to changes in indicators of stock status with respect to explicit or implicit reference points."
ICCAT has a history of taking management action to reduce the exploitation rate in the NA swordfish fishery in response to stock and fishing mortality status estimates. In 1999 ICCAT implemented a rebuilding plan under Recommendation 99-2 (see PI1.1.2) and has set TACs, catch limits, and other technical regulations regularly since that time, following advice from the SCRS, to rebuild and maintain the North Atlantic swordfish stock above Bmsy. There is no reason to expect that this management responsiveness to SCRS advice, showing status and projections in relation to indicators (see PI1.1.2), will not continue.
In 2011, ICCAT adopted Recommendation 11-13 setting out principles of decision making for ICCAT conservation and management measures (ICCAT 2011). This describes a generally understood decision-making framework based on a harmonized format for tuna RFMO science bodies to convey advice (Strategy Matrix) agreed at the Second Joint Meeting of Tuna RFMOs in June 2009 in San Sebastian, Spain. Recommendation 11-13 guides the Commission in developing management measures responsive to stock status as represented



on the Kobe Plot (a standardized "four quadrant, red-yellow-green" format, which is widely embraced as a practical, user-friendly method to present stock status information). The Recommendation sets out clearly how management measures should be designed depending on where status is estimated in the Kobe quadrants, generally codifying the type of action taken in Recommendation 99-2. In all cases, the requirement set out is that management measures should be designed to maintain the stock at, or rebuild to, Bmsy, with a high probability. Where appropriate (overfishing and overfished) the adoption of a rebuilding plan is required.

The framework does not specify actions with respect to approaching limits but is designed around achieving targets with high probability, considering both stock status and exploitation rate with requirements to reduce exploitation rate when it is above Fmsy. By definition, as the framework is designed to achieve the TRP with high probability and maintain fishing mortality below Fmsy, it will also act to maintain the stock above the implicit LRPs (see PI1.1.2 si(b)). This represents generally understood HCR that is consistent with the harvest strategy.

Further, ICCAT recommendation 13-02 (ICCAT, 201b) on the conservation of North Atlantic swordfish, specifies at paragraph 5 that: The SCRS and the Commission shall begin a dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec 99-02] then management measures should be considered to avoid further decline and begin to rebuild the stock.

A new recommendation in 2016 (recommendation 16-03; ICCAT, 2016a) is more explicit, specifying at paragraph 7: In line with the provisions of the Recommendation by ICCAT on the Development of Harvest Control Rules and of Management Strategy Evaluation [Rec. 15-07], paragraph 3, the SCRS and the Commission shall begin a dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec. 99-02], then the Commission shall adopt a 10-year rebuilding plan, with harvest levels, as recommended by the SCRS, that will meet the Commission's objectives of maintaining or rebuilding stocks to Bmsy within the defined time period.

The requirements of the first scoring issue of SG60 are met.

SG80 scoring requires that HCR be "well-defined". Only for MSC CR v2 is there Guidance on what this means. However, interpretation of the term has been reasonably consistent through previous CR versions, including CR v 1.3, as used here. The interpretation is that to be considered well- defined, HCR must exist in some written form that has been agreed by the management agency, with clearly stated actions that will be taken at specific trigger points. ICCAT Rec 16-03, para 7., constitutes a written agreement by the management agency, filling part of the interpretation. It also includes a specification of a trigger point – that which was previously responded to by implementation of a rebuilding plan (0.65Bmsy; see PI1.1.2 si(b)). It also clearly states the action(s) to be taken – adoption of a (new) ten year rebuilding plan such that SCRS advice on harvest levels will be used to meet the objective of rebuilding or maintaining the stock at Bmsy.

The SG80 requirements are met.



NOTE: A process to develop HCR using Management Strategy Evaluation (MSE) is in effect. Recommendation 15-07 (ICCAT 2015) is on the development of HCR using MSE and includes specifications for the SCRS to advise the Commission on setting reference points for all stocks, including a 5-year schedule for the establishment of species-specific HCRs. At this stage, therefore, ICCAT planning for HCR development, including LRP, TRP and other settings, is in-train. Once completed, it is possible that SG100 might be achieved at PI1.2.2(b). MSE is not a requirement to specify actions in a well-defined HCR and SG80 may in principle be achieved without it (at PI1.2.2(a) and/or (b)).
The SCRS assessments provide the Commission with estimates of projected biomass for a range of TAC options along with the associated probability of being at or above BMSY. It has also advised the Commission on TACs that would achieve a specified probability of being at or above Bmsy (e.g. 75% in ICCAT, 2012). These probabilities are based upon the main uncertainties in the stock assessment, with consideration of alternative assessment approaches and multiple sensitivity tests (see PI 1.2.4). The HCR can therefore be considered to take account of the main uncertainties (due to data, assumptions and assessment model) in setting harvest levels.
The requirements of the second scoring issue of SG80 are met.
The HCR framework is an instruction to the Commission on how to proceed given status estimates and outlook advice from the SCRS. It naturally incorporates uncertainties due to the scientific processes but does not account for other uncertainties related, for example, to implementation error or issues not considered in the stock assessment processes, such as environmental or ecological processes.
The requirements of the first scoring issues of SG100 are not met.
ICCAT relies on its CPCs to constrain domestic harvesting within each country's or entity's catch limit. In addition, minimum size regulations have been established for the Convention area. Countries can implement domestic controls above and beyond these limits to further the conservation of NA swordfish. For example, US-specific tools include fleet quotas, individual quotas, time/area closures, observer coverage requirements, VMS requirements, dockside monitoring requirements, hail in/out requirements, logbook requirements, season, transfer processes and bycatch reduction measures.
There is evidence that clearly shows these tools used to implement harvest control rule is appropriate and effective in achieving the required exploitation levels (ICCAT, 2009b; 2012a). While there is evidence that the catch was reduced further than required by the TAC reductions implemented as part of the rebuilding plan, the successful rebuilding of the stock to Bmsy between 1999 and 2009 nevertheless shows that these tools are appropriate and effective in controlling exploitation. The consistent decline in fishing mortality from 1999 to recent years (since when it has been stable) is shown in the stock assessment outputs (for example, Figure 8 of ICCAT, 2015a). The Commission is committed to implementing the TACs (ICCAT, 2011) and has put in place carryover mechanisms to ensure this (see above).
The requirements of the third scoring issue of SG80 are met.
As a result, the overall score is 80.



Appendix 3 Acoura / MRAG Audit Teams Response to MSC TO

MSC TO (black text) and initial joint CAB (Acoura and MRAG) responses (blue text)

Prepared by Acoura and MRAG

16/05/17

Given overlapping fisheries and harmonisation needs, this note is a joint assessment team/CAB response from Acoura and MRAG to the MSC TO on Acoura Canadian NA Swordfish. In summary, we disagree with the TO as it relates to scoring and find the rationale insufficient to justify modifying our outcome. We do, however, agree with the final clause to the extent that our rationale needs to be improved to properly support the score of 80. We propose a teleconference between MSC and the Acoura and MRAG P1 experts to discuss the rationale and scoring. If agreement can be reached the rationale can then be re-written.

TO and responses

PI 1.2.2. Scoring issue a: Within the latest surveillance report for the North West Atlantic Canada longline swordfish fishery, the team has determined that PI 1.2.2. si (a) meets SG80. Thus, the PI has been rescored with an overall score of 80 and the condition for this performance indicator has been closed. The MSC does not consider that the rationale provided justifies the SG80 score.

The team uses Paragraph 7 within ICCAT recommendation (Rec 16-03) to justify the scoring within the surveillance report. However, the evidence provided for the justification for the harvest control rule (HCR) being 'well-defined' and 'ensuring' that the exploitation rate is reduced as limit reference points are approached is insufficient.

First, the HCR is not 'well-defined' in terms of the HCR 'clearly stating what actions will be taken at what specific trigger reference point levels" (as per the definition used from v2.0). Paragrpah 7 of Rec 16-03 states that; "Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec. 99-02], then the Commission shall adopt a 10-year rebuilding plan, with harvest levels, as recommended by the SCRS, that will meet the Commission's objectives of maintaining or rebuilding stocks to Bmsy within the defined time period.".

Although the team alludes to the previous biomass level being 0.65Bmsy, it is not clear what 'approaching' means from a 'well-defined' point of view. For example, if the biomass was to fall to be B<Bmsy, it is not known whether 0.9Bmsy, 0.8Bmsy, etc would be considered the level approaching 0.65Bmsy. If the stock was to fall rapidly there is also no certainty that the rebuilding plan would be enacted in a sufficient manner and therefore 'ensure' the exploitation rate was reduced.

Please see the fuller response to the "third" TO point, below. Notwithstanding the response below, we acknowledge the issue of "approaching" raised by MSC. We (both teams/CABs) use expert judgment to interpret how real management would work. The SCRS provides regular updates and advice to the Commission and considers current and possible future stock status, with advice on harvest levels followed by the Commission and put in to effect by contracting parties. It is possible (though unlikely) that if there were a major environmental or other driver for extended poor recruitment, the stock could fall more quickly than anticipated, but the provisions would deal with that exactly as would a more formal HCR as seems to be envisaged by MSC. What matters in terms of responsiveness is how regularly the SCRS assesses status, makes projections, and provides advice. Given the annual nature of ICCAT



activities and the performance of the swordfish fishery/stock over the past ten years we see no problems.

We note also an issue with respect to how "well defined" is to be interpreted <u>under CR Ver 2.0</u> (but not here – see below). In this case, two CABs with experienced teams have harmonised and readily agreed scoring using CR Ver 1.3. While we very much appreciate TO, peer review and public comments, we are concerned that there remains room for teams to apply expertise and judgment.

Second, Rec 16-03 calls for the implementation of a 10-year rebuilding plan similar to a previous rebuilding plan that was enacted in 1999 when the swordfish stock was low (Rec 99-02). However, this previous rebuilding plan was deemed by the assessment team to be 'generally understood.' Therefore, it is not clear how a previously 'generally understood' HCR could now be 'well-defined', especially considering the uncertainties around the future rebuilding plan's implementation.

The MSC is incorrectly concluding that Rec 16-03 merely repeats Rec 99-02. This is not the case.

The Rec 99-02 rebuilding plan pre-dated any certifications and has been invoked to suggest a general approach. It was put in place when the Commission recognised the advice of the SCRS that the stock was over exploited, not in response to a pre-planned rule guiding the Commission's decision making. Rec 99-02 outlined (at Para 1) that a 10-year rebuilding program will be implemented to achieve Bmsy, and set up new catch limits for contracting parties. It also specified (at Para 9) that the SCRS should regularly conduct an assessment and provide advice. But it did not say how the Commission must react to that advice. Res 16-03 clearly sets out a rule stating what the Commission will do if the biomass again approaches the level that triggered 99-02 and further states explicitly that the Commission shall adopt the rebuilding plan, including harvest levels, as recommended by the SCRS to achieve the clear objectives.

Third, the relevant section highlighted by the team in Rec 16-03 seems to more about a framework by which a rebuilding plan would be enacted, not what would be considered a 'well-defined' HCR. Also, it does not help the team's argument that SG80 is met, given that Paragraph 7 of Rec 16-03 includes the statement "....while the HCRs are being developed....."

This paragraph has two distinct points. Dealing first with the "third" point: We disagree. At paragraph 7, Rec 16-03 specifies when a "rebuilding plan" shall be triggered and clearly states a requirement for harvest levels as recommended by the SCRS that will meet the Commission's objectives of maintaining or rebuilding stocks to Bmsy within the defined (10 year) period. It also specifies that the Commission "shall adopt" those harvest levels. Specified actions are required if the biomass is estimated/projected to fall towards 0.65 Bmsy. The SCRS undertakes regular reviews and provides regular advice. Those reviews don't just look at current status, they look ahead. The trigger is in effect above 0.65 Bmsy ("should the biomass approach…") and the minimum expectation is rebuilding within 10 years. The words "maintaining or rebuilding" imply a more precautionary approach and the possibility of triggering the plan well above 0.65 Bmsy.

We note that whether or not the actions are labelled as a "rebuilding plan" is immaterial. What matters is whether the written actions constitute "well defined" harvest control rules as outlined at CR Ver 1.3 GCB2.6 and in the CR Ver 1.3 Vocabulary. In our view, following considerable harmonisation discussion between teams/CABs, the provisions in Res 16-03 do meet the CR Ver 1.3 standard at SG80.

Para 7 of Res 16-03 sets out rules/actions for determining a management action (harvest levels shall be adopted, as recommended by the SCRS to achieve Bmsy) in response to changes in indicators of stock status (biomass/Bmsy) with respect to reference points (Bmsy and 0.65Bmsy).



Regarding the "Also" point: We agree that the phrase "while the HCRs are being developed" does not "*help the team's argument*". However, again, it is immaterial. The only thing that matters is whether what follows at Para 7 in Res 16-03 meets the SG80 or not.

With consideration of the above, the current score of SG80 for PI 1.2.2. si (a) should be reduced to SG60 and the condition remain open, as the rationale does not justify the score.

We disagree with the MSC's conclusion regarding appropriate scoring – see above. A score of SG80 is justified given CR Ver 1.3 GCB2.6 and Vocabulary. <u>However, the MSCs' final clause</u> is important and we acknowledge the rationale as provided should be reconsidered and strengthened. Before doing so, we would welcome discussion with the MSC on the TO and our response.



Appendix 4

Acoura / MRAG Audit Teams Revised Scoring Rationale

PI 1.2.2	60	80	100
There are well defined and effective harvest control rules in place.	Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules take into account a wide range of uncertainties.
	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.

The MSC Interpretation on Harvest Control Rules (HCRs) distributed to CABs on 16 December 2015, explains that "'generally understood' HCRs do not need to be well defined or explicitly agreed, but there should be at least some implicit agreement supported by past management actions from which to understand that 'generally understood' rules exist, and there should be no reason to expect that management will not continue to follow such generally understood rules in future and act to be responsive to changes in indicators of stock status with respect to explicit or implicit reference points."
ICCAT has a history of taking management action to reduce the exploitation rate in the NA swordfish fishery in response to stock and fishing mortality status estimates. Fishing mortality rates were reduced by several ad hoc measures including transfer of effort to the South Atlantic by some countries, implementation of a minimum size and, later in the 1990s, the implementation of TACs which were renegotiated after every stock assessment.
In 1999, ICCAT implemented a more formal, ten-year rebuilding plan under Recommendation (Rec) 99-02 (see PI1.1.2) and has set TACs, catch limits, and other technical regulations regularly since that time, following advice from the SCRS, to rebuild and maintain the North Atlantic swordfish stock above Bmsy.
In 2011, ICCAT adopted Recommendation 11-13 setting out principles of decision making for ICCAT conservation and management measures (ICCAT 2011). This describes a generally understood decision-making framework based on a harmonized format for tuna RFMO science bodies to convey advice (Strategy Matrix) agreed at the Second Joint Meeting of Tuna RFMOs in June 2009 in San



Sebastian, Spain. Recommendation 11-13 guides the Commission in developing management measures responsive to stock status as represented on the Kobe Plot (a standardized "four quadrant, red-yellow-green" format, which is widely embraced as a practical, user-friendly method to present stock status information).
The Recommendation sets out clearly how management measures should be designed depending on where status is estimated in the Kobe quadrants, generally codifying the type of action taken in Recommendation 99-2. In all cases, the requirement set out is that management measures should be designed to maintain the stock at, or rebuild to, Bmsy, with a high probability. Where appropriate (overfishing and overfished) the adoption of a rebuilding plan is required.
The framework does not specify actions with respect to approaching limits but is designed around achieving targets with high probability, considering both stock status and exploitation rate with requirements to reduce exploitation rate when it is above Fmsy. By definition, as the framework is designed to achieve the TRP with high probability and maintain fishing mortality below Fmsy, it will also act to maintain the stock above the implicit LRPs (see PI1.1.2 si(b)). This represents, generally understood HCR that is consistent with the harvest strategy.
Further, ICCAT recommendation 13-02 (ICCAT, 2013) on the conservation of North Atlantic swordfish, specifies at paragraph 5 that: <i>The SCRS and the Commission shall begin a dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec 99-02] then management measures should be considered to avoid further decline and begin to rebuild the stock.</i>
The SG60a requirements are therefore met.
A new recommendation in 2016 (recommendation 16-03; ICCAT, 2016a) is more explicit. It specifies a "rebuilding plan", determines when a "rebuilding plan" shall be triggered, and clearly states a requirement for harvest levels as recommended by the SCRS that will meet the Commission's objectives of maintaining or rebuilding stocks to Bmsy within the defined (10 year) period. It also specifies that the Commission "shall adopt" those harvest levels. Specified actions are required if the biomass is estimated/projected to fall towards 0.65 Bmsy.
The MRAG and Acoura teams note that:
1. The SCRS undertakes regular reviews and provides regular advice;
2. The SCRS reviews don't just look at current status, they project future status with measures of uncertainty.
3. The trigger is, in effect, above 0.65 Bmsy; Recommendation 16-03 states that "should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec. 99-02], then the Commission shall adopt a 10-year rebuilding plan.";
4. The minimum expectation is rebuilding within 10 years.
5. The words, "maintaining or rebuilding" imply a more precautionary approach and the possibility of triggering the plan well above 0.65 Bmsy.
We further note that the Rec 99-02 rebuilding plan pre-dated any certifications and has been invoked to suggest a general approach, supporting SG60 scoring. It was put in place when the Commission recognised the advice of the SCRS that the



stock was over exploited, but not in response to a pre-planned rule guiding the Commission's decision making. Rec 99-02 outlined (at Para 1) that a 10-year rebuilding program will be implemented to achieve Bmsy, and set up new catch limits for contracting parties. It also specified (at Para 9) that the SCRS should regularly conduct an assessment and provide advice. But it did not say how the Commission must react to that advice. The rebuilding of the swordfish stocks to above Bmsv demonstrates that the control implemented worked as desired and the requirement in advance to follow this action, should the biomass approach the level at which it was previously put in place, is now codified in Rec 16-03. The SG80a requirements are therefore met. NOTE: A process to develop a new HCR using Management Strategy Evaluation (MSE) is in effect. Recommendation 15-07 (ICCAT 2015) is on the development of a new HCR using MSE and includes specifications for the SCRS to advise the Commission on setting reference points for all stocks, including a 5-year schedule for the establishment of species-specific HCRs. At this stage, therefore, ICCAT planning for new HCR development, including LRP, TRP and other settings, is intrain. Once completed, it is possible that SG100 might be achieved at PI1.2.2(b). MSE is not a requirement to specify actions in a well-defined HCR and SG80 may in principle be achieved without it (at PI1.2.2(a) and/or (b)). The SCRS assessments provide the Commission with estimates of projected biomass for a range of TAC options along with the associated probability of being at or above BMSY. It has also advised the Commission on TACs that would achieve a specified probability of being at or above Bmsy (e.g. 75% in ICCAT, 2012). These probabilities are based upon the main uncertainties in the stock assessment, with consideration of alternative assessment approaches and multiple sensitivity tests (see PI 1.2.4). The HCR can therefore be considered to take account of the main uncertainties (due to data, assumptions and assessment model) in setting harvest levels. The requirements of SG80b are met. The HCR framework is an instruction to the Commission on how to proceed given status estimates and outlook advice from the SCRS. It naturally incorporates uncertainties due to the scientific processes but does not account for other uncertainties related, for example, to implementation error or issues not considered in the stock assessment processes, such as environmental or ecological processes. The requirements of SG100b are not met. ICCAT relies on its CPCs to constrain domestic harvesting within each country's or entity's catch limit. In addition, minimum size regulations have been established for the Convention area. Countries can implement domestic controls above and beyond these limits to further the conservation of NA swordfish. For example, USspecific tools include fleet quotas, individual quotas, time/area closures, observer coverage requirements, VMS requirements, dockside monitoring requirements, hail in/out requirements, logbook requirements, season, transfer processes and bycatch reduction measures. There is evidence that clearly shows these tools used to implement harvest control rule is appropriate and effective in achieving the required exploitation levels (ICCAT, 2009b; 2012a). While there is evidence that the catch was reduced further than required by the TAC reductions implemented as part of the rebuilding



of the stock to Bmsy between 1999 and 2009 nevertheless shows that these tools are appropriate and effective in controlling exploitation. The consistent decline in fishing mortality from 1999 to recent years (since when it has been stable) is shown in the stock assessment outputs (for example, Figure 8 of ICCAT, 2015a). The Commission is committed to implementing the TACs (ICCAT, 2011) and has put in place carryover mechanisms to ensure this (see above).
The requirements of SG80c are met.

