

Hooper, Tony

From: Barrett, Tim [REDACTED]
Sent: Wednesday, February 17, 2021 9:55 AM
To: Hooper, Tony
Cc: Waters, Christa; Williams, Wendy
Subject: RE: MSE
Attachments: FIP work plan - Bay of Fundy Herring Sep 2020.xlsx

Hi Tony,

Here's an overview:

An MSE workshop with stakeholders was held in October 2019 that included presentations on the background to the fishery and an introduction to MSE. The first modelling results were presented in January 2020 and the meeting included a peer-review of the modelling approach. A second MSE workshop was held in January 2020 and stakeholders developed a list of key uncertainties in the fishery and a preliminary list of objectives for the MSE. A second peer-review meeting of the modelling approach was held in May 2020 based on models that captured the range of the specific uncertainties identified in the workshop with stakeholders. The modelling team provided a demonstration of how the management procedures would be evaluated with simulation testing in a video with some example management procedures in July 2020. By August 2020 a final set of operating models (called the reference set) was finalized that represented the key uncertainties in the fishery/fishery dynamics identified by stakeholders. These key uncertainties were the natural mortality rate, resilience, future growth, and inclusion of the SWNB weir fishery in the SWNS/BoF stock. A meeting was held in September 2020 and a list of objectives for the MSE were finalized and a preliminary list of metrics to evaluate the performance of management procedures was generated. During this meeting DFO decided to conduct a review/evaluation of methods for defining a limit reference point to be used as a performance threshold for eliminating poor performing management procedures. A peer-review of the limit reference point for the MSE was conducted in two meetings (November 2020 and January 2021). A limit reference point was selected to be 70% of the spawning stock biomass at maximum sustainable yield ($0.7 \text{ SSB}_{\text{MSY}}$), higher than the DFO provisional limit reference point of $0.4 \text{ SSB}_{\text{MSY}}$ to reflect herring's role as a forage fish in the ecosystem.

Next steps:

Management procedure development is the next step in the MSE. The modeling team has generated some candidate management procedures (rules for setting the TAC based on the acoustic index of spawning stock biomass). Performance of these management procedures will be presented to stakeholders and then stakeholders will be asked to submit their candidate management procedures for testing.

Our next meeting will be scheduled in March. It is difficult to predict how long the management procedure development/testing will go on. I suspect that it will be a few more months before the process is complete

* I added some points in the "Evidence of completion" column in the Excel file that might be useful. Let me know if this is sufficient and if you need any more information. *ATTACHED*

Thanks,
Tim

From: Hooper, Tony [REDACTED]
Sent: Wednesday, February 17, 2021 7:23 AM
To: Barrett, Tim [REDACTED]
Cc: Waters, Christa <[REDACTED]>; Williams, Wendy <[REDACTED]>
Subject: MSE

Good morning Tim.

I know you are busy but wondering if you could provide a brief overview of the progress we've made with development of MSE over the past year and an outlook as to when you feel we will have this phase of the framework finished? Connors, Comeau and Cape Breeze entered into a FIP with Ocean Outcome last year as a bridge to satisfy customer sustainability requirements until we regain our MSC certification. As part of the process we need to provide a "progress report" by March of 2021 on the workplan we committed to within the FIP.

I have attached a copy of the workplan, much of the actions were ongoing and covered by DFO mandate in any case.

The action items that pertain to Industry's participation on MSE are:

- Engage in the framework and MSE processes where applicable
- Develop an MSE that includes consideration of TRP
- Take MSE results into consideration for harvest strategy considerations

Obviously, the intent is for us (industry) to work with DFO on this initiative and as you know we have indeed stayed fully engaged on the process (...even though we do not have a full understanding of many aspects). Any help would be appreciated. Best regards

Action name and number	Indicator #	Action goal	Outcome	Priority	Tasks	Responsible (lead)	Responsible (supporting)	Evidence of completion (milestones)	Completion due date	
Action 1. Support stock rebuilding	1.1.1, 1.1.2	Update the herring rebuilding plan, continue to implement rebuilding measures, and monitor progress	Stock status improves	High	Implement voluntary measures and other applicable measures within the IFMP and rebuilding plan Industry stakeholders have developed voluntary management measures described in the Atlantic herring integrated fisheries management plan (IFMP). These include some restrictions on fishing areas and sizes of fish caught. Stakeholders will meet periodically to review these measures and confirm implementation. They will also engage with DFO on the updated rebuilding plan as it is made available. Update and publish rebuilding plan	Industry stakeholders DFO			Ongoing	
				High	A rebuilding plan for Southwest Nova Scotia / Bay of Fundy herring was triggered and adopted in 2013. DFO is currently in the process of updating the rebuilding plan, and will eventually share the plan with fishery stakeholders.	DFO		Year 1 end (Sep 2021)	Ongoing	
				Medium	Monitor progress against the rebuilding plan As described in the 2013 rebuilding plan, DFO is required to periodically review measures in the rebuilding plan. Such review takes place through the Regional Review Process and the Scotia-Fundy Herring Advisory Committee, the latter of which includes participation from industry members.	DFO			Ongoing	
Action 2. Update harvest strategy and stock assessment	1.2.1, 1.2.4	Update the stock assessment framework and develop a MSE for the herring fishery	Harvest strategy and stock assessment are improved	Medium	Engage in the framework and MSE processes where applicable Industry stakeholders participate in framework and IFMP processes via the Scotia-Fundy Herring Advisory Committee, and will continue to do so. Develop MSE that includes consideration of larger reference points DFO has an intent to develop a Management Strategy Evaluation (MSE) for this fishery, which includes an objective to consider a variety of management scenarios and target reference points. They are currently aiming to conduct the MSE in 2021. Take MSE results into consideration for harvest strategy development DFO aims to increase its use of MSE to develop fishery management strategies. One of their objectives in conducting MSE for this fishery is to generate management advice relating to the TAC.	Industry stakeholders DFO		The spawning stock biomass at maximum sustainable yield (SSB _{XSY}) is being used as the target biomass for evaluating the performance of management procedures in the MSE. Several harvest control rules that define a TAC based on the acoustic index of spawning stock biomass are being evaluated.	Industry participation in the following MSE meetings: Workshop I (Oct 2019 - 2 days) Model review I (Jan 2020 - 2 days) Workshop II (Jan 2020 - 2 days) Model review II (May 2020 - 2 days) Objective/Performance metrics meeting (Sept 2020 - 1 day) Reference point meeting I (Nov 2020 - 1 day) Reference point meeting II (Jan 2021 - half day) Add any meetings related to IFMP	Year 2 end (Sep 2022)
Action 3. Develop more explicit management of ecosystem impacts	2.5.2	Update the assessment framework and IFMP so that they include more explicit consideration of the role of herring in the ecosystem	Management accounts for the role of herring in the ecosystem	Medium	Develop a clearer basis for management of ecosystem impacts from the herring fishery in the assessment framework and IFMP DFO is taking efforts to more explicitly consider herring's role as a forage species and address ongoing ecosystem requirements. For example, the review of the stock assessment framework includes an objective to examine sources of ecosystem information and consider how that information might be incorporated into the framework.	Industry stakeholders DFO		Herring's role as a forage fish has been explicitly considered in the selection of a limit reference point within the MSE. A limit reference yield of 0.7 SSB _{XSY} was selected at the peer-review meeting in November 2020. This value is higher than the DFO provisional limit reference point of 0.4 SSB _{XSY} to reflect herring's role as a forage fish in the ecosystem.	Year 3 end (Sep 2023)	