May 3, 2022

# OCEANA CANADA'S RECOMMENDATIONS FOR 4T FALL HERRING MANAGEMENT DECISIONS

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May 3, 2022

Dear Mireille,

We are writing today regarding future management for the southern Gulf of St. Lawrence fall spawning herring (NAFO area 4T-4Vn). Oceana Canada appreciates the opportunity to submit comments and respectfully recommends the following management actions for the fall spawning component of the 4T-4Vn herring stock:

1. **Follow scientific advice and promote stock growth to the healthy zone by adopting a precautionary Total Allowable Catch (TAC) of 8000 metric tonnes;**
2. **Develop a rebuilding plan for this spawning component that is compliant with the new rebuilding regulations[1] published in *Canada Gazette*, Part II and following guidance[2] to growing the stock to the healthy zone**

As outlined in the amended *Fisheries Act*, the Canadian government must manage fish stocks at levels that promote sustainability and implement effective rebuilding plans for depleted populations that include clear timelines and targets. It is essential that quota decisions are based on science, that they prioritize the long-term health of the population, and that the Fishery Monitoring Policy[3] is implemented to support sustainable fisheries management.

Oceana Canada recognizes the importance of applying a stock assessment model that includes an estimate of natural mortality for 4T fall spawning herring. Including time-varying natural mortality in the model, and a subsequent readjustment of the Upper Stock Reference point, strengthens science-informed decision-making for this stock. That combined with the requirement for self-

[1] Canada Gazette, Part II, Volume 156, Number 8. Available online https://www.canadagazette.gc.ca/rp-pr/p2/2022/2022-04-13/html/sor-dors73-eng.html))
[2] Guidance for the development of rebuilding plans under the Precautionary Approach Framework: Growing stocks out of the critical zone. Available online (https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precautionary-precaution-eng.htm)
[3] DFO, 2009. Policy on New Fisheries for Forage Species. Available online (https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/forage-eng.htm )

reported bait removals and including sources of unreported catches in natural mortality estimates were important decisions leading to significantly reducing the 2020 TAC to 12,000 metric tonnes, in line with scientific advice.

Biomass of fall-spawning 4T herring has been rapidly declining towards the Limit Reference Point (LRP) since 2011 and the stock entered the cautious zone in 2017. For the past 22 years, the stock has experienced overfishing and for the first time since 2007, fishing mortality exceeded the provisional Precautionary Approach removal reference[4] in 2020 and 2021.[5] In this state of overfishing, growth over the short- and long-term is prevented. In addition to high fishing mortality, the stock suffers from low recruitment, high natural mortality, declining weight-at-age and uncertain environmental changes. In short- and long-term projections, reducing fishing mortality slightly reduces the probabilities of decline. As presented in the most recent assessment, catch options below 10,000 metric tonnes provide a slightly higher probability of growing the stock in the short term.[7] Given this information, we recommend a reduction in the TAC to a more precautionary catch level of 8000 metric tonnes this year to improve the probability of keeping the stock above the LRP. This level of harvest on the current estimated spawning stock biomass will not likely result in fishing mortality exceeding the provisional removal reference.

The overarching policy goal of DFO's Precautionary Approach (PA) Framework is to prevent stocks from declining into the critical zone.[6] The guidance on rebuilding plan timeframes outlines that plans should be initiated well before the stock is near the boundary of the critical and cautious zones and suggests the process initiate when the stock has declined past the mid-point of the cautious zone.[2] Since the fall 4T herring stock is well past the mid-point and is approaching the Limit Reference Point, it is imperative that the development of a rebuilding plan begins as soon as possible:

1. The cautious status and projected decline of fall 4T herring over the short- and long-term make it a candidate for rebuilding as per the PA Framework's intent. Rebuilding plans created for fisheries in the cautious zone are important to guide the development of a sustainable fishery to ensure the stock does not decline into the critical zone.[2]

2. The causes for decline in this spawning component include low recruitment and high natural morality correlated with changing environmental conditions and predator abundance within the Gulf.[4,6] These cumulative impacts indicate that the stock requires a holistic management approach.[4,6] Status quo conservation and harvesting plans do not have a built-in means for addressing ecosystem concerns; however a rebuilding plan that meets departmental and international best practices would.[1,7] A rebuilding plan would provide a much more suitable framework to sustainably manage this stock.

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[4] DFO, 2019. Sustainable survey for fisheries. Available online (https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/survey-sondage/index-en.html). There is no removal reference for the cautious and critical zones of this stock, and instead the provisional harvest decision rule of the PA framework is used; the removal rate reference for the healthy zone is established (F0.1 = 0.35). The most recent Stock assessment indicates that removals since 2017 have been below or at the provisional harvest decision rule for the cautious zone.

[5] DFO, 2022. Assessment of the southern Gulf of St. Lawrence (NAFO Division 4T-4Vn) spring and fall spawner components of Atlantic Herring (*Clupea harengus*) with advice for the 2022 and 2023 fisheries. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2022/nnn.

[6] DFO, 2009. A fishery decision-making framework incorporating the precautionary approach. (https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm)

[7] Archibald and Rangeley (2019). The quality of rebuilding plans in Canada. Available online (https://oceana.ca/wp-content/uploads/sites/24/the_quality_of_current_and_future_rebuilding_plans_in_canada_2019_0.pdf)

3. The working group developing the 4T spring spawning herring rebuilding plan is already established, thus the collective knowledge and expertise to address many of the challenges that need to be overcome is already in place. If tasked with developing a rebuilding plan for the fall spawning component, members of this working group involved in the fall fishery would already be familiar with this stock's science, history and ecosystem, and would have experience integrating this into a plan to rebuild the stock.

4. The outlook for the fall spawning component, while declining and uncertain, is not as dire as that of the spring spawning component. Therefore, to provide the best chance of maintaining herring in its vital place as a forage fish in the Gulf ecosystem, and to maintain any portion of the Gulf herring fishery in the future, action needs to be taken now to rebuild the stock and prevent its decline into the critical zone. The principles contained in DFO's Policy on New Fisheries for Forage Species,[3] though technically not required for existing fisheries, provide important guidelines to consider in developing a rebuilding plan specific to forage fish.

Oceana Canada recognizes that uncertainty in future environmental conditions and ecosystem changes in the Gulf make biomass projections and management of this stock uncertain. However, it is because of this uncertainty that we recommend immediately beginning developing a rebuilding plan that takes future ecosystem uncertainty into account. Together with ensuring the lowest possible fishing removals as recommended by departmental science,[2,6] these management-led changes could help prevent the stock from reaching the critically low levels the spring spawning component currently exhibits. By acting now, the department can help ensure that the 4T fall spawning herring fishery can be a resource that supports Gulf of St. Lawrence coastal communities for generations to come.

Oceana Canada appreciates the opportunity to provide input and thank you for your time. We will continue to be engaged in the process and look forward to discussing our recommendations and any upcoming developments.

Sincerely,

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