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COMMENT ON MANAGEMENT MEASURES FOR SOUTHERN GULF OF ST. LAWRENCE SPRING SPAWNING HERRING

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Comment on management measures for southern Gulf of St. Lawrence spring spawning herring

Atlantic herring in the southern Gulf of St. Lawrence are an important forage fish species, critical to transferring energy throughout the ecosystem's food web. The portion of the population that spawn in the spring is depleted and has been in the critical zone since 2002. The latest Fisheries and Oceans Canada (DFO) science informing stock management decisions shows they are likely to continue declining over the next 10 years. However, the rebuilding plan needed to manage this stock has still not been completed while a commercial and bait fishery continue to put pressure on the population.

Fisheries and Oceans Canada recently released their 2021 management decision for 4T spring spawning herring. A 500 metric tonne commercial quota was allocated in addition to a bait fishery that does not have a seasonal limit imposed.

The Canadian government must implement effective rebuilding plans for depleted populations as outlined in the amended *Fisheries Act* that include clear timelines and targets. Fisheries management decisions must be based on science and prioritize the long-term health of the population. This year's management decision for 4T spring spawning herring fails to meet this commitment.

Oceana Canada has been advocating for rebuilding of spring spawning Atlantic herring, communicating with DFO about the actions needed to bring the population back to healthy levels based on science and international best practices for fisheries management. Oceana Canada recommended the following actions for this stock following the advisory meeting this past February:

1. **Close the commercial and bait fisheries until the stock rebuilds above the Limit Reference Point (LRP).**
2. **When the stock rebuilds above the LRP and directed fishing can resume, manage all removals of spring spawners (directed commercial, bait, fall fishery incidental catch) under a single Total Allowable Catch (TAC).**
3. **When the stock rebuilds above the LRP and directed fishing can resume, implement proposed management measures presented by DFO Resource Management at the 2021 Gulf Small Pelagics Advisory Committee (GSPAC) meeting that increase reporting and resultant data on effort, landings and compliance in the commercial and bait fisheries.**
4. **The rebuilding plan for this stock should include explicit recognition of the ecosystem importance of this species and account for ecosystem requirements in future quota setting.**

Further details on these recommendations follow:

1. As presented in the most recent stock assessment and Gulf Small Pelagics Advisory Committee meeting (February 19, 2021), Atlantic herring spring spawning stock in NAFO area 4T are severely depleted and have been in the critical zone since 2002[1]. We recognize that a significant and

[1] DFO (2020). 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 2020 and 2021 fisheries. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2020/029

persistent reduction in recruitment due to environmental conditions, specifically warming waters and zooplankton availability, along with high natural mortality of mature fish (an increase to 64% annually)[1], has contributed to the decline in abundance and biomass of this stock. Now, less than 10% of all commercial herring landings in the southern Gulf region come from the spring spawning stock[1]. Given this, and in agreement with Fisheries and Oceans Canada (DFO) Precautionary Approach policy[2] and science advice for rebuilding regulations[3], Oceana Canada recommends that conservation principles prevail over other considerations and **all directed fishing for 4T spring spawning herring (commercial and bait) be closed with zero quotas until the stock rebuilds above the Limit Reference Point**. Reducing fishing mortality in the spring spawning stock is the most direct way to reduce total mortality on a stock experiencing long-term low recruitment and to promote resiliency in the face of ongoing ecosystem change.

2. We acknowledge that a cessation in directed commercial fishing alone is not forecasted to result in a notably higher probability of growing the stock above the LRP in the short or long-term[1], however, this projection was unable to include all sources of fishing removals. Therefore, we recommend changes in the management of the stock such that all sources of fishing mortality can be estimated and are accounted for by management in a single TAC. When biomass increases above the LRP and directed fishing resumes, bait landings should be monitored with high confidence so they can be included in fishing mortality estimates (See recommendations in #3) and TAC reconciliation. In the meantime, incidental landings of spring spawners in the fall spawner directed fisheries should be subject to a bycatch cap. Given the depleted nature of the spring spawners stock, they should be managed as a bycatch species in the other fisheries they interact with. This recommendation reflects the department's Policy on Managing Bycatch[4], and their Fishery Decision Making Framework Incorporating the Precautionary Approach[2], which both require monitoring of all fisheries that land or intercept a stock to account for total fishing removals.

   We recognize having directed fishery dependent catch-per-unit-effort (CPUE) and sampling data is an important part of the population model and stock assessment. However, a portion of fishery dependent sampling data including condition, reproductive condition and length could still be collected through bycatch sampling in the fall spawner fishery. We want to applaud the department for investing in a new spring acoustic survey for inshore spring spawner grounds. We support the expansion of acoustic surveys to investigate offshore spawning aggregations. This investment in non-fishery dependent data collection for the stock is well timed to offset the loss of fishery-dependent data if the management decisions reflect DFO conservation principles noted above and commercial and bait fisheries are closed.

[2] 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)
[3] DFO (2021). Science Guidelines to Support Development of Rebuilding Plans for Canadian Fish Stocks. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2021/006

[4] DFO (2013). Policy on managing bycatch (https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/bycatch-policy-prise-access-eng.htm)

3. When the stock has rebuilt about the LRP we recommend that the following management measures, presented by DFO Resource Management at the 2021 GSPAC meeting, be included in the management plan for this stock:

   For the commercial fishery we recommend the implementation of:

   - Mandatory logbooks that include bycatch data collection
   - Mandatory hail-out to accompany already mandatory hail-ins
   - VMS for all vessels
   - Remove latent capacity in the commercial fishery
   - Weekend closures to allow for the pilot spring acoustic survey

   For the bait fishery we recommend the implementation of:

   - Mandatory hail outs to accompany already mandatory hail-ins
   - VMS for all vessels
   - Dockside monitoring at levels matching those for the commercial fishery in each Herring Fishing Area
   - Require license holders to request license conditions to participate in the bait fishery
   - Remove latent capacity in the bait fishery
   - Weekend closures to allow for the pilot spring acoustic survey
   - Reduce the daily trip catch from 907 kg to 454 kg

   Although not on the proposed list of management measures, we would strongly support the request from stakeholders at the advisory committee meeting to make electronic logbooks a requirement for the bait fishery, and to impose a season limit for bait harvesters in addition to the trip limit. A season limit would allow the incorporation of bait fishery landings in the TAC for the stock. Cumulatively these management measures would increase reporting and resultant data on effort, landings, and compliance for fisheries directed at or interacting with this stock, such that there can be high confidence in the total fishing mortality estimate.

4. Fisheries and Oceans Canada (DFO) has appropriately included 4T spring spawning herring in Batch 1 of the major Fish Stock provisions in *Bill C-68*, making it subject to the new regulations for rebuilding plans[5]. Additionally, the new *Fisheries Act* (6.1(1))[6] states that measures implemented to promote the sustainability of fish stocks shall *"[take] into account the biology of the fish and the environmental conditions affecting the stock*". We recognize that consultation on management measures with 4T spring spawning herring rebuilding working group members has and continues to take place. **We recommend that the forthcoming rebuilding plan explicitly account for the ecosystem contributions of southern Gulf herring to reflect their inherent biology and unique role in facilitating energy transfer throughout the food web.** Management should follow

[5] Government of Canada (2020). Canada Gazette, Part I, Volume 155, Number 1: Regulations Amending the Fishery (General) Regulations (https://canadagazette.gc.ca/rp-pr/p1/2021/2021-01-02/html/reg1-eng.html)

[6] Parliament of Canada (2019). An Act to amend the Fisheries Act and other Acts in consequence (https://www.parl.ca/DocumentViewer/en/42-1/bill/C-68/royal-assent)

principles in DFO's Policy on New Fisheries for Forage Species[7], which provides guidance that would assist in transitioning the management of this stock so that ecosystem principles are a primary focus along with conservation and socio-economic considerations. We strongly recommend that this rebuilding plan process exemplify leadership and foresight and work to incorporate principles of the Policy on New Fisheries for Forage Species such that the *"future recruitment of the target species is not impaired, and that food supply for predators is not depleted*."

It is well established that herring play a crucial role in the ecosystem of the southern Gulf[1]. Directing science and management capacity to increase knowledge of spawning habitat and biomass estimates in parallel with reducing all directed fishing mortality are important to give this essential and severely depleted forage fish stock a chance to rebuild and provide an opportunity for a sustainable fishery in the future.

We appreciate your consideration of our 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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[7] DFO (2009). Policy on New Fisheries on Forage Species. https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/forage-eng.htm