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To: Marisa Keefe
Fisheries and Oceans Canada
401 Burrard Street, Vancouver, BC
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Dear Marisa Keefe,

Pacific Wild Alliance (PWA) is submitting the following as per the request for input pertaining to the 2023/2024 Integrated Fishery Management Plan (IFMP) for Pacific herring. We appreciate the opportunity to comment on the draft Pacific herring IFMP for 2023/2024 and would like to remain engaged in consultation moving forward.

In short, we continue to advocate for a rapid transition to ecosystem-based management of Pacific herring and a coast-wide moratorium of the gillnet and seine roe fisheries until such a time that herring populations have had time to recover in all five major fishing areas across the B.C. coast. PWA supports the legal and constitutional rights of First Nations in managing herring populations in their respective territories, including the opening of the commercial Spawn On Kelp (SOK) fishery where applicable, and annual openings for Food, Social and Ceremonial (FSC) harvest.

Pacific herring is a cornerstone of marine biodiversity on the British Columbia (B.C.) coast, has been an important part of First Nations' economy and culture since time immemorial, helping to support local coastal communities. It was only during the last century, when the commercial herring fishery began, that this critically important forage fish drastically declined in the order of 99 per cent, and even collapsed, in many places along Canada's Pacific coast.¹

We would like to extend our thanks to the department for presenting multiple harvest options in the 2023/2024 IFMP for Pacific herring. We are relieved that the federal government appears to be finally accepting feedback on the IFMP from First Nations, coastal communities, and a wide array of British Columbians in a meaningful way by presenting different harvest options. However, we are still very concerned about several harvest options presented for consideration

¹ Morin, J., Evans, A.B., Efford, M. (2023). The Rise of Vancouver and the Collapse of Forage Fish: A Story of Urbanization and the Destruction of an Aquatic Ecosystem on the Salish Sea (1885–1920 CE). *Human Ecology*, 51, 303–322. <https://doi.org/10.1007/s10745-023-00398-w>

and some of the fishing grounds that are subject to opening under the draft IFMP. Highest on our list of concerns is the suggestion of a 20% harvest rate (16,083 ton total allowable catch [TAC]) in the Strait of Georgia (SoG). The Strait of Georgia (SoG) is considered the last stronghold for herring on Canada's Pacific Coast. The large range and high degree of uncertainty at which Pacific herring is estimated to return (44,040-146,621 tons) in the SoG in 2023/2024 is concerning. If the low end of DFO's prediction (44,040 tons) returns to spawn, a 16,083 ton TAC would represent nearly a 37% harvest rate which vastly exceeds sustainable levels and fails to meet conservation objectives. Second, the potential of opening the west coast of Vancouver Island to commercial harvest despite the fact this stock has persisted in a low-biomass, low-productivity state for many years and has been slow to show signs of recovery is extremely concerning. We urge you not to lose momentum in the positive steps you have made toward conservation of this foundational species in recent years. We urge you to maintain closures in severely depleted fishing grounds. In the SoG, we recommend a closure, but at a minimum, would urge you not to increase the harvest rate.

Please find our feedback and recommendations on the following harvest options presented in the 2023/2024 IFMP for Pacific herring for each major fishing area below.

Haida Gwaii (HG):

PWA supports the department's recommendation to keep Haida Gwaii closed to commercial harvest.

Prince Rupert District (PRD):

PWA can not fully support any of the harvest options for consideration for PRD. We are disappointed to see that a harvest option supporting FSC and commercial SOK openings while keeping roe herring fisheries closed is not an option presented for consideration in the draft IFMP.

Central Coast (CC):

PWA supports harvest option 2, allowing for a harvest rate up to 10 per cent total allowable catch (TAC) to support FSC and commercial SOK fisheries only.

Strait of Georgia (SoG):

PWA supports harvest option 1, no commercial fishery, FSC access only.

West Coast Vancouver Island (WCVI):

PWA supports harvest option 1, no commercial fishery, FSC access only.

PWA emphasizes that the SoG has been losing herring spawn in a generally south-to-north direction for decades. A number of small local subpopulations have already been extirpated from the SoG after the massive stock collapse in the 1960s, likely decreasing the genetic

diversity of herring stocks overall.² Within the SoG, Area 19 has not hosted significant spawning activity since before 1950 and spawning in Area 18 has not returned after a sudden and severe collapse in the 1980s. Furthermore, spawning activity has been minimal from Nanaimo north to Lantzville in the last two years. PWA reinforces the concern of the Marine Conservation Caucus (MCC) that the ongoing loss of spawning in the SoG is now encroaching on the region north of Nanaimo, which represents the last stronghold of consistent and significant herring spawn in the SoG.³ Taking into consideration that the SoG hosts a significant percentage of the remaining herring biomass in B.C., with approximately 38% of all herring on the coast spawning in Baynes Sound alone., this is of utmost concern.

Concerningly, we have seen no evidence that DFO has identified the drivers of spawn loss in the SoG, indicating that the stock is being managed in the absence of this understanding. Recent research indicates that DFO is currently using an already shockingly shifted baseline and severely depressed modern population of Pacific herring to inform fisheries management strategies (Morin et al. 2023). The failure to adequately acknowledge and manage resident sub-stocks, identify drivers of spawn loss, and account for shifting baseline syndrome in the SoG contributes to the chronic mismanagement of fisheries in B.C..

We are far from alone in our concern about the efficacy of fisheries management and the state of fish stocks in B.C.. In 2023, the Office of the Auditor General of Canada released a report summarizing that:

“[DFO] still does not have a complete picture about the amount of fish harvested and their biological characteristics to make informed decisions...[DFO] does not have the important information it needs to support the sustainable management of fisheries, and it runs the risk that fish stocks are overexploited” (Office of the Auditor General of Canada, 2023, pg iii, para 3-4).⁴

A public opinion poll by Research Co. in November 2023 overwhelmingly indicates that British Columbians are concerned about the state of our fish stocks and believe marine conservation is of utmost importance. “Marine conservation” was rated as the most important sector to the future of the coastal economy by 93 per cent of British Columbians surveyed. On issues of concern to B.C. coastal communities, “declining fish stocks” was at the top of the list. 92 per cent of British Columbians expressed concern for fish stocks, including 68 per cent who identify as “very concerned”. Conversely, “loss of commercial fishing jobs” (78 per cent) and “excessive government restrictions on fishing” (65 per cent) were rated as the two lowest concerns by

² Pitcher, T.J., Lam, M.E., Kaiser, M, White, A. (S.J.), Pakhomov, E. (2017) Hard of Herring. In Tortell, P. (ed) *Reflections of Canada: Illuminating our Opportunities and Challenges at 150 years*. UBC Press, PWIAS

³ MacDuffee, M. (2023). *MCC response to the 2023/2024 Herring Fishery | Pacific Marine Conservation Caucus*. Pacific Marine Conservation Caucus.

<https://www.mccpacific.org/2023/11/mcc-response-to-the-2023-2024-herring-fishery/>

⁴ Office of the Auditor General of Canada. (2023). *Monitoring Marine Fisheries Catch—Fisheries and Oceans Canada*. Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada. (Report 9).

https://www.oag-bvg.gc.ca/internet/English/parl_cesd_202311_09_e_44372.html

British Columbians represented in the survey.⁵

Below are PWA's recommendations for consideration for the current and future management plans of Pacific herring:

1. Move towards Ecosystem-Based Management (EBM)

The Sustainable Fisheries Framework is outlined in the IFMP and includes policies for adopting EBM approaches. This is a step in the right direction. Canada must not allow commercial fishing to proceed as usual while surrounding stocks remain depleted. While we speculate, we still do not fully understand Pacific herring's value as a foundational species in the marine ecosystem and its correlation to the endangered status of Chinook salmon and Southern Resident Killer Whales. EBM allows for a holistic analysis of the herring fishery in relation to the ecosystem, rather than simply at a species level.

2. Outline a more consistent plan to integrate TEK into management

The 2023/2024 Pacific herring IFMP mentions the need to integrate Traditional Ecological Knowledge (TEK) and Indigenous Knowledge (IK) into DFO management plans. Consulting with First Nations is a necessary step in Fisheries Reconciliation and ensuring access to fishing rights. Direct action and steps in accomplishing the integration of TEK and IK should be outlined and incorporated into the IFMP. We are in support of Indigenous commercial SOK fisheries that have been proven to be sustainable and have been occurring since time immemorial.

3. Identify migratory and resident herring populations in the IFMP

The spatial distribution of herring stocks is still not adequately recognized in the Pacific herring management plan. The IFMP assigns stocks to the area in which they are fished – however, there is sufficient evidence to suggest that many regions are home to both local and migratory populations of herring. As such, they cannot be managed as the same unit. This crucial information has remained under-researched and unmentioned in management plans despite the acknowledgement of the existence of local, non-migratory herring populations as early as 1934. Citing Tester(1934), the commissioner identified this in the 1934 provincial fisheries report:

“... the intensity of the fishing in any area must not be permitted to endanger the perpetuity of the local stocks. In conclusion the author says: ‘Local and general depletion must be avoided at all costs, for not only is the fishery itself a great asset, but the intermediate role of the herring as food for other species is of inestimable economic importance to the Province.’ In this connection Mr. Tester points out that it is essential that overfishing be guarded against, especially in respect to a non-migratory species such as the herring, as such species is more quickly depleted and the consequences more disastrous than in the case of a migratory species.”⁶

⁵ Canseco, B. M. (2023). B.C. Coastal Issues poll finds strong consensus on future of coastal economy. Research Co. <https://researchco.ca/2023/11/22/coastal-issues-bc/>

⁶ Tester, A. (1934). The herring fishery of British Columbia: Past and Present. In the BC provincial report of the commissioner of fisheries (1934). Victoria, BC: Legislative Assembly, King's Printer.

DFO should be aware that management mitigations must be prepared for both migratory and non-migratory populations of herring. Numerous recent studies have indicated the potential conservation risks of ignoring sub-stock level dynamics in Pacific herring.^{7,8,9,10,11} When small local stocks are fished as part of a larger-scale quota, they may collapse. In B.C., many of these small local stocks have already been extirpated after the massive stock collapse in the 1960s.¹² We commend DFO Haida Gwaii, the Council of Haida Nation, Parks Canada and the University of British Columbia for all recognizing that resident sub-stocks of Pacific herring exist and must be managed separately.

4. Create recovery plans based on the historical abundance of Pacific herring in B.C. and the recognition of sub-stocks.

PWA calls on DFO to develop recovery plans for each of the stocks occurring in the five major fishing areas in B.C.. We were pleased with initiative taken to create the Draft Haida Gwaii 'íináng | iinang Pacific Herring: An Ecosystem Overview and Ecosystem-based Rebuilding Plan and urge DFO to repeat a similar process in the other four major fishing grounds in B.C.. Creation of additional recovery plans should be through a process involving First Nations, independent scientists, other levels of government, relevant non-government organizations and expert opinion. A moratorium on all commercial fishing of herring in B.C. should be instituted immediately while more research and planning is being conducted and until such a time populations recover to the level decided upon by the herring recovery plans. As Pacific herring form the foundation of B.C.'s marine food web, the precautionary principle must be put first.

5. Prioritize SOK fisheries over other harvesting methods

SOK fisheries are a sustainable method of harvesting and should not be suffering while gillnetters and seiners continue to profit. SOK fisheries are likely to struggle to yield sufficient herring eggs in the population collapse of Pacific herring. In 2022 DFO announced the closure of the commercial harvest of herring SOK in the central coast while seining and gillnetting

⁷ Benson, A. J., Cox, S. P., Cleary, J. S. (2015). Evaluating the conservation risks of aggregate harvest management in a spatially-structured herring fishery. *Fisheries Research*, 167, 101–113. <https://doi.org/10.1016/j.fishres.2015.02.003>

⁸ Okamoto, D. K., Hessing-Lewis, M., Samhoury, J. F., Shelton, A. O., Stier, A., Levin, P. S., Salomon, A. K. (2020). Spatial variation in exploited metapopulations obscures risk of collapse. *Ecological Applications*, 30(3). <https://doi.org/10.1002/eap.2051>

⁹ MacCall, A. D., Francis, T. B., Punt, A. E., Siple, M. C., Armitage, D. R., Cleary, J. S., Dressel, S. C., Jones, R. R., Kitka, H., Lee, L. C., Levin, P. S., Mclsaac, J., Okamoto, D. K., Poe, M., Reifenstuh, S., Schmidt, J. O., Shelton, A. O., Silver, J. J., Thornton, T. F., Woodruff, J. (2018). A heuristic model of socially learned migration behaviour exhibits distinctive spatial and reproductive dynamics. *ICES Journal of Marine Science*, 76(2), 598–608. <https://doi.org/10.1093/icesjms/fsy091>

¹⁰ Stier, A. C., Olaf Shelton, A., Samhoury, J. F., Feist, B. E., Levin, P. S. (2020). Fishing, environment, and the erosion of a population portfolio. *Ecosphere*, 11(11). <https://doi.org/10.1002/ecs2.3283>

¹¹ Rogers, L. A., Salomon, A. K., Connors, B., Krkošek, M. (2018). Collapse, Tipping Points, and Spatial Demographic Structure Arising from the Adopted Migrant Life History. *The American Naturalist*, 192(1), 49–61. <https://doi.org/10.1086/697488>

¹² Pitcher, T.J., Lam, M.E., Kaiser, M, White, A. (S.J.), Pakhomov, E. (2017). Hard of Herring. In Tortell, P. (ed) *Reflections of Canada: Illuminating our Opportunities and Challenges at 150 years*. UBC Press, PWIAS

remained open in the Strait of Georgia. In 1996 the Supreme Court of Canada affirmed that the Heiltsuk had a right to conduct a commercial SOK fishery, as they have since pre-European contact. Furthermore, the *Sparrow* decision set out a doctrine that put conservation of herring stocks as a first priority, followed by FSC fisheries, then an Aboriginal commercial fishery, and then a non-Aboriginal fishery if herring stocks were healthy enough to allow it. Indigenous owned and operated SOK fisheries must be prioritized above other harvesting methods to fulfill Canada's duty to honor the rights and titles of First Nations and foster reconciliation.

Sincerely,

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Marine Specialist

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