

**DFO Response to a Question Raised at the October 6 Meeting
of the Senate Standing Committee on Fisheries and Oceans (POFO)**

Question:

1. Senator Manning (Conservative Party of Canada) asked for the latest seal population assessments.

Response:

The table below lists the most recent Canadian Science Advisory stock assessments of Canadian seal populations.

| Canadian Science Advisory report |
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| DFO. 2022. Stock assessment of Northwest Atlantic grey seals (<i>Halichoerus grypus</i>) in Canada in 2021. Science Advisory Report 2022/018 https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41063648.pdf |
| DFO. 2022. Stock Assessment of Pacific Harbour Seals (<i>Phoca vitulina richardsi</i>) in Canada in 2019. Science Advisory Report 2022/034 https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41073654.pdf |
| DFO. 2020. 2019 Status of Northwest Atlantic Harp Seals, <i>Pagophilus groenlandicus</i>. Science Advisory Report 2020/020 https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/40878478.pdf |

Question:

2. Senator Cordy (Progressive Senate Group) asked about the effects of seals on fish populations.

Response:

Impacts of Grey Seals on Fish Populations in Eastern Canada

| Canadian Science Advisory report |
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| DFO. 2010. Impacts of Grey Seals on Fish Populations in Eastern Canada. Science Advisory Report 2010/071 https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/343116.pdf |

Studies on the impact of Atlantic seal predation on Southern Gulf cod, white hake, Northern cod, and Winter skate.

| Publication |
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| Neuenhoff RD, P Douglas, D Swain, S. Cox, MK McAllister, AW Trites, CJ Walters, MO. Hammill. 2018. Continued decline of a collapsed population of Atlantic cod (<i>Gadus morhua</i>) due to predation-driven Allee effects. Canadian Journal of Fisheries and Aquatic Sciences https://doi.org/10.1139/cjfas-2017-0190 |
| DFO. 2017. Recovery potential assessment of winter skate (<i>Leucoraja ocellata</i>), Gulf of St. Lawrence population. Fisheries and Oceans Canada https://publications.gc.ca/collections/collection_2017/mpo-dfo/Fs70-6-2016-059-eng.pdf |

Hammill, M.O., G.B. Stenson, D.P. Swain and H.P. Benoît. 2014. **Feeding by grey seals on endangered stocks of Atlantic cod and white hake.** ICES J. Mar. Sci.
<https://doi.org/10.3354/meps09844>

Studies on Northern cod and/or capelin abundance in the Newfoundland region.

| Publications |
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| DFO. 2021. 2020 Stock Status Update for Northern Cod. Science Response 2021/004 https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/40966458.pdf |
| Buren, A. D., M. Koen-Alonso and G. B. Stenson. 2014. The role of harp seals, fisheries and food availability in drive the dynamics of northern cod. Mar. Ecol. Prog. Ser. https://doi.org/10.3354/meps10897 |
| Buren, A.D., M. Koen-Alonso, P. Pepin, F. Mowbry, B. Nakashima, G. Stenson, N. Ollerhead, W.A. Montevecchi. 2014. Bottom-up regulation of capelin, a keystone forage species. PLoS One https://doi.org/10.1371/journal.pone.0087589 |

Question:

3. Senator Manning (Conservative Party of Canada) asked for information on studies conducted in the past few years relating to seals and other mammals that are detrimental to fish stocks.

Response:

The two enclosed tables contains some examples of completed studies referencing: a) consumption by seals; and b) consumption by other predators. Studies underway are not included.

a) Studies that reference consumption by seals

| Published studies |
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| Koen-Alonso, M, U Lindstrøm and A Cuff. 2021. Comparative Modeling of Cod-Capelin Dynamics in the Newfoundland-Labrador Shelves and Barents Sea Ecosystems. Front. Mar. Sci., Sec. Marine Fisheries, Aquaculture and Living Resources. https://doi.org/10.3389/fmars.2021.579946 |
| Lidgard, D. C., Bowen, W. D., & Iverson, S. J. 2020. Sex-differences in fine-scale home-range use in an upper-trophic level marine predator. Movement ecology. https://doi.org/10.1186/s40462-020-0196-y |
| Swain DP, HP Benoît, MO Hammill, JA Sulikowski. 2019. Risk of extinction of a unique skate population due to predation by a recovering marine mammal. Ecological Applications. https://doi.org/10.1002/eap.1921 |
| Hernandez KM,AL Bogomolni, JH Moxley, GT Waring RA DiGiovanni Jr., MO Hammill, DW Johnston, L Sette, MJ Polito. 2019. Seasonal variability and individual consistency in gray seal (Halichoerus grypus) isotopic niches. Canadian Journal of Zoology https://doi.org/10.1139/cjz-2019-0032 |
| Hammill, M.O., and C. Sauvé. 2017. Growth and condition in harp seals-evidence of density dependent and density independent influences. ICES J. of Marine Science. https://doi.org/10.1093/icesjms/fsw237 |

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| Weitzman, J., C. den Heyer, and W. D. Bowen 2017. Factors influencing and consequences of breeding dispersal and habitat choice in female grey seals (<i>Halichoerus grypus</i>) on Sable Island, Nova Scotia. <i>Oecologia</i> . https://doi.org/10.1007/s00442-016-3764-5 |
| Stenson, G.B., A.D. Buren and M. Koen-Alonso. 2016. The impact of changing climate and abundance on reproduction in an ice-dependent species, the Northwest Atlantic harp seal, <i>Pagophilus groenlandicus</i>. <i>ICES. Journal of Marine Science</i> 73:250-262. https://doi.org/10.1093/icesjms/fsv202 |
| Bowen, W. D., C. E. den Heyer, McMillan, JI, Iverson SJ. 2015. Offspring size at weaning affects survival to recruitment and reproductive performance of primiparous gray seals. <i>Ecology and Evolution</i> . https://doi.org/10.1002/ece3.1450 |
| Hammill, M.O., G.B. Stenson, T. Doniol-Valcroze and A. Mosnier. 2015. Conservation of Northwest Atlantic harp seals: past success, future uncertainty? <i>Biological Conservation</i> . https://doi.org/10.3354/meps09844 |
| Hammill, M.O., G.B. Stenson, D.P. Swain and H.P. Benoît. 2014. Feeding by grey seals on endangered stocks of Atlantic cod and white hake. <i>ICES J. Mar. Sci.</i> https://doi.org/10.3354/meps09844 |
| Stenson, G.B. and M.O. Hammill. 2014. Can ice breeding seals adapt to habitat loss in a time of climate change? <i>ICES J. Mar. Sci.</i> https://doi.org/10.1093/icesjms/fsu074 |
| Harvey, V., M.O. Hammill, D.P. Swain, G.A. Breed, C. Lydersen and K.M. Kovacs. 2012. Winter foraging by a top predator, the grey seal, in relation to the distribution of prey. <i>Marine Ecology Progress Series</i> https://doi.org/10.3354/meps09844 |
| DFO. 2012. Estimating consumption of prey by Harp Seals (<i>Pagophilus groenlandicus</i>) in NAFO Divisions 2J3KL. Research Document - 2012/156 https://publications.gc.ca/collections/collection_2013/mpo-dfo/Fs70-5-2012-156-eng.pdf |
| Hammill, M.O. and G.B. Stenson. 2000. Estimated prey consumption by Harp seals (<i>Phoca groenlandica</i>), Hooded Seals (<i>Cystophora cristata</i>), Grey seals (<i>Halichoerus grypus</i>) and Harbour seals (<i>Phoca vitulina</i>) in Atlantic Canada. <i>J. Northwest Atlantic Fisheries Science</i> . https://doi.org/10.2960/J.v26.a1 |

b) Studies that reference consumption by other predators

| Published studies |
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| Skern-Mauritzen M, Ulf Lindstrøm, M Biuw, B Elvarsson, T Gunnlaugsson, T Haug, KM Kovacs, C Lydersen, MM McBride, B Mikkelsen, N Øien and G Víkingsson. 2022. Marine mammal consumption and fisheries removals in the Nordic and Barents Seas. <i>ICES Journal of Marine Science</i> . https://doi.org/10.1093/icesjms/fsac096 |
| Koen-Alonso, M., Pepin, P., Fogarty, M. J., Kenny, A., and Kenchington, E. 2019. The northwest Atlantic fisheries organization roadmap for the development and implementation of an ecosystem approach to fisheries: structure, state of development, and challenges. <i>Mar. Pol.</i> https://doi.org/10.1016/j.marpol.2018.11.025 |
| Spitz, J., V. Ridoux, A.W. Trites, S. Laran and M. Authier. 2018. Prey consumption by cetaceans reveals the importance of energy-rich food webs in the Bay of Biscay. <i>Progress in Oceanography</i> . https://doi.org/10.1016/j.pocean.2017.09.013 |
| Smith, L.A., J.S. Link, S.X. Cadrin, D.L. Palka. 2015. Consumption by marine mammals on the Northeast US Continental shelf. <i>Ecological Applications</i> . https://doi.org/10.1890/13-1656.1 |

DFO. 2014. **Results and recommendations from the Ecosystem Research Initiative – Newfoundland and Labrador’s Expanded Research on Ecosystem Relevant but Under-Surveyed Splicers.** Science Advisory Report 2012/058
<https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/347549.pdf>

Buren, A. D., M. Koen-Alonso and G. B. Stenson. 2014. **The role of harp seals, fisheries and food availability in drive the dynamics of northern cod.** Mar. Ecol. Prog. Ser.
<https://doi.org/10.3354/meps10897>

Buren, A.D., M. Koen-Alonso, P. Pepin, F. Mowbry, B. Nakashima, G. Stenson, N. Ollerhead, W.A. Montevicchi. 2014. **Bottom-up regulation of capelin, a keystone forage species.** PLoS One
<https://doi.org/10.1371/journal.pone.0087589>

DFO. 2012. **Recent DFO (Newfoundland & Labrador Region) studies of the Grand Banks benthos at small and large spatial scales.** Research Document - 2012/114
<https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/347898.pdf>

Question:

- Senator Francis (Progressive Senate Group) asked a question about seal harvest license-holders that actively participate in the commercial harvest in Canada’s Atlantic and Arctic regions and the proportion of those harvesters that are Indigenous.

Response:

Number of commercial licences issued and active sealers in the 2022 seal hunt

| Province | Total Commercial Licences Issued | Active Licences in 2022 | Number of Indigenous Sealers |
|---------------------------|----------------------------------|-------------------------|------------------------------|
| Newfoundland and Labrador | 3,582 | 307 | Unknown |
| Nova Scotia | 45 | 13 | Unknown |
| New Brunswick | 11 | 0 | Unknown |
| PEI | 17 | 0 | Unknown |
| Quebec | 827 | 63 | Unknown |
| Total | 4,482 | 380 | N/A |

It is unknown how many of the sealers are Indigenous as the licensing system does not ask them to self-identify.

Question:

- Senator Quinn (Canadian Group of Senators) asked for the most recent stock assessment of the number of seals on the West Coast.

Response:

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| Canadian Science Advisory report |
| DFO. 2022. Stock Assessment of Pacific Harbour Seals (<i>Phoca vitulina richardsi</i>) in Canada in 2019. Science Advisory Report 2022/034 https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41073654.pdf |

Question:

6. Senator Manning (Conservative Party of Canada) asked a question about market development strategies for seal products.

Response:

Canada has been the largest global exporter of seal products for decades. However, market access restrictions in the European Union (EU) and other jurisdictions have negatively impacted our exports. Notwithstanding market access challenges in certain jurisdictions, prospects for crafts, fashions, oil for human health and meat products for human consumption, pets and aquaculture appear to be promising, particularly across Asia.

Fisheries and Oceans Canada (DFO) provides support to further develop the Canadian seal product market through various funding programs. Through the Canadian Fish and Seafood Opportunities Fund, the Fur Institute of Canada and Seals and Sealing Network have received \$2.6 million in funding for a three-year project meant to implement activities to strengthen sector organization and market conditions for Canadian seal products in both domestic and international markets. In recent years, the Atlantic Fisheries Fund has funded projects to strengthen systems needed in the production of seal oil capsules, and to build the professional and economic capacity for humane harvesting and full utilization processing.

In 2015, DFO established the Certification and Market Access Program for Seals (CMAPS) with \$5.67M in dedicated funding for Indigenous and commercial stakeholders to explore new markets and work to address market access challenges for Canadian seal products. CMAPS has been the only federal program focused on market access for seal products, with funding split between DFO, the Canadian Northern Development Agency and the Atlantic Canada Opportunities Agency. This funding has been used to support projects for Indigenous communities to develop capacity to leverage access to the EU market through the Indigenous Exemption and to renew market access domestically and internationally. Since 2015, CMAPS has supported 47 projects, 36 of which are focused on capacity building for Indigenous communities. The program was scheduled to expire in 2020 however DFO temporarily extended CMAPS funding while a program review was conducted. Using a co-developed approach with Ulnoweg Development Group, a designated Indigenous institution based in Atlantic Canada, a program review was conducted in 2021 that revealed the continued need for the program and recommendations to better meet the needs of Indigenous communities. CMAPS funding remains available today to support Indigenous communities in the seal industry.

DFO remains committed to exploring market development opportunities for Canadian seal products, while respecting the latest science advice and ensuring that seal harvesting is both sustainable and humane. The Department organized a Seal Summit in St. John's, Newfoundland and Labrador on November 8-9, 2022. The Seal Summit was designed to facilitate further discussion and collaboration between Indigenous partners, the commercial fishing and sealing industry, academia, and provincial and territorial representatives and the federal government on seal science, product development and market innovation. Participants had the opportunity to exchange ideas about seal product innovation and discuss business growth and accessing new markets for seal products.

Question:

7. Senator Francis (Progressive Senate Group) wanted to know whether DFO collects data and publishes yearly statistics on how many seals and which species are harvested for food, social and ceremonial purposes and if so, how this data collected and whether it's shared with Indigenous communities and the public.

Response:

In almost all cases, DFO does not issue licences for the harvest of seals for food, social and ceremonial (FSC) purposes which is consistent with the Marine Mammal Regulations. Therefore, the reporting function that is typically a condition of licence, is not available in FSC seal harvests and landings are not tracked. Landings from such harvests, however, are unlikely to be significant from statistical and conservation perspectives.

Question:

8. Senator Manning (Conservative Party of Canada) asked for a copy of any report produced following the Seal Summit.

Response:

A report following the Seal Summit is currently in development and will be provided as soon as it is available.