Save Miramichi Salmon Inc.'s Request to the Standing Committee on Fisheries and Oceans to Initiate a Study On Fisheries and Oceans Canada's Management of Striped Bass and Atlantic Salmon in the Miramichi River

Submitted by

Save Miramichi Salmon Inc.

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Table of Contents

1. Request for Study

We are Save Miramichi Salmon Inc. ("**SMS**"), a not-for-profit company whose purpose is to advocate for the protection and survival of Atlantic salmon populations that spawn in the famous and historic Miramichi River in New Brunswick. SMS was created in response to the ecological disaster facing Miramichi salmon, spurred on by a complacent Fisheries and Oceans Canada ("**DFO**").

We respectfully request that this House of Commons Standing Committee on Fisheries and Oceans ("this Committee") initiate a new study into DFO's management of Atlantic salmon and striped bass in the Miramichi River, including DFO's use of science to inform its management decisions. Such a study will increase public understanding of, and bring attention to, the extent of the crisis affecting a renowned Canadian fishery, and will encourage greater public accountability on the part of DFO and the Minister of Fisheries, Oceans and the Canadian Coast Guard (the "**Minister**"), who, on the advice of her department, is managing this iconic Canadian species to extinction, contrary to her legal and constitutional duties.

Since the last time this Committee examined this issue, the crisis has only worsened and the extirpation of Atlantic salmon from the Miramichi River is now imminent. Overwhelming scientific evidence collected and published over the last decade proves striped bass are predating Atlantic salmon at an unsustainable rate, causing population-level impacts and threatening the survival of those Miramichi salmon populations that have sustained communities and cultures for millennia.[i] The status of Atlantic salmon in the Miramichi is so dire that is has recently garnered national and international media attention.[ii]

DFO, however, refuses to acknowledge the clear and compelling evidence provided by scientists (including from peer-reviewed studies), Indigenous Nations, local stakeholders and riparian owners, fishers, and a host of others pursuing the protection of Miramichi Atlantic salmon, that maintaining striped bass populations at current numbers is hastening the collapse of the river's salmon population.[iii]

In 2020, this Committee conducted a study into striped bass in the Miramichi River and recommended that DFO adjust its management of the fishery, specifically the limit reference point (the minimum population that must be maintained), based on "justifiable scientific evidence".[iv] An intransigent DFO has simply ignored this recommendation, relying on out-of-date and fundamentally flawed science to maintain an artificially high and scientifically irrational minimum population for striped bass, while refusing to consider any evidence that could undermine DFO's decision.[v]

This lack of reliable, impartial, and transparent science and decision-making is not unique to the Miramichi River. Multiple governmental agencies, courts, and inquiries – including those conducted by this Committee – have raised serious concerns about DFO's ability to manage Canada's fisheries without bias and to make decisions based on reliable and justifiable scientific rationale.[vi]

In November 2024, after witnessing record low numbers of Atlantic salmon in the Miramichi River, SMS sent a letter to the Minister demanding that the Minister and DFO take immediate action to address the critical status of Miramichi Atlantic salmon, including revisiting the restrictive management measures for Gulf of St. Lawrence striped bass. Neither DFO nor the Minister ever provided a substantive response to our demand.

2. The Minister's Legal Duties[vii]

Parliament derives its power to regulate and legislate in respect of the fisheries from section 91(12) of the *Constitution Act, 1867*. This provision empowers ***regulation of fisheries***[viii] and confers on Parliament the power to "regulate, protect and preserve the fisheries".[ix]

The Minister and DFO,[x] are charged, by Parliament, with a duty to protect, manage and conserve Canada's fishery for the benefit of all Canadians, in the public interest. While the Minister has broad discretion to manage access to Canada's fisheries, she is under a much stricter obligation to protect and conserve the resource. Canada's fisheries are a "common property resource" which belong to all peoples of Canada.[xi] The Minister's paramount legal duty is to protect and conserve the fishery for the benefit of all Canadians,[xii] so as to preserve it for future generations.[xiii] The highest courts have likened this duty to that of a trustee.[xiv]

Leading authorities have repeatedly affirmed that the "paramount regulatory objective [of the *Fisheries Act*] is the conservation of the resource",[xv] that "conservation is of such overwhelming importance to Canadian society as a whole",[xvi] and as such, when exercising her authority under the *Fisheries Act*, the Minister's first priority ***must*** *be* conservation.[xvii]

The duty to conserve inheres certain legal obligations, most importantly, the precautionary principle, which the Supreme Court of Canada adopted as an element of statutory interpretation for conservation-oriented statutes.[xviii] This principle requires that "environmental measures anticipate, prevent and attack the causes of environmental degradation", and that scientific uncertainty is not used as a reason to delay measures to prevent environmental harm in the face of serious or irreversible damage.[xix] It "implies a reversal of the burden of proof",[xx] meaning the onus is on DFO to prove that harm is ***unlikely to occur***, rather than for others to prove that harm will or is occurring. The Federal Court has twice found that specific decisions made by the Minister under the *Fisheries Act* and its regulations must respect the precautionary principle, and has overturned DFO policies for, in part, not adhering to the precautionary principle or the Minister's mandate under the *Fisheries Act* to protect and conserve fish.[xxi]

Causing the extinction or extirpation of an important component of Canada's fishery is plainly inconsistent with the Minister's duty to conserve Canada's fisheries. It is inconceivable that the Minister's authority would permit the complete and intentional (or reckless) extinguishment of a fishery, in whole or in part.[xxii]

3. Atlantic Salmon and Striped Bass in the Miramichi River: Out of Balance

Decline of Miramichi Atlantic Salmon

Miramichi Atlantic salmon are an iconic and historic species in Canada. They have been present in the river since the end of the last ice age and are central to the culture of Indigenous and non-Indigenous peoples along the Miramichi. The Miramichi River was once one of the largest salmon producing rivers in the western Atlantic, with annual runs of up to half a million fish, capable of supporting entire communities. It has long been considered one of the greatest salmon rivers in North America.

However, beginning in or around 2012, Miramichi Atlantic salmon populations began to decline drastically: between 2011 and 2024, ***the population declined by 93%***.[xxiii] It is clear that without urgent and drastic intervention, Atlantic salmon in the Miramichi River will not survive.

Despite these critically low numbers, DFO and the Minister refuse to take urgent action. In 2025, DFO released its Atlantic salmon policy, which proposes to recover and rehabilitate salmon stocks over a 12-year period.[xxiv] Based on their current trajectory, Miramichi salmon will collapse in that time.

DFO Management Leads to Explosion of Striped Bass in the Miramichi River

Striped bass in the Miramichi River have been on an inverse trajectory to Atlantic salmon. In the 1990s, DFO determined that Gulf of St. Lawrence striped bass (including those in the Miramichi River) needed to be protected to allow populations to recover, and implemented a series of strict management measures, including a moratorium on all Indigenous, recreational, and commercial fishing of striped bass.[xxv]

At the time, DFO set a target population of approximately 30,000 striped bass. Importantly, in 2014, the population was considered stable enough to sustain a harvest at ***31, 200*** adult spawners. Despite this, DFO inexplicably imposed a limit reference point – being the minimum population the species can fall to before, according to DFO, there is a high probability of serious harm – of ***330,000*** adult spawners. This is ***over 10 times greater*** than the number DFO previously determined could sustain a harvest. As discussed below, DFO provides no justifiable scientific rationale for maintaining the excessive limit reference point and ignores any evidence that demonstrates it can and should be reduced.

Striped bass are known for being prolific spawners. Before DFO's moratorium on striped bass fishing in the 1990s, it is estimated that the population was below 5,000. Beginning in or around 2010, the annual striped bass spawner numbers in the Miramichi River increased exponentially, and since 2017, has exceeded the limit reference point five times.[xxvi] In 2023, the population reached ***half a million*** adult spawners. To put this number in perspective, the total annual abundance between 1963 to 1996 averaged 36,000.[xxvii]

Erosion of Natural Separation

The subsequent and critical decline in Atlantic salmon populations in the Miramichi River coincided with the increase in the population of Gulf of St. Lawrence striped bass, particularly after annual bass spawner numbers exceeded 100,000.[xxviii] The decline of other valuable species, including smelt, has also coincided with the explosion of striped bass in the Miramichi watershed.

Like most other anadromous salmon species, mature Atlantic salmon spawn in freshwater from the headwaters of the Miramichi to the lower non-tidal end of the river. After hatching, salmon spend 2-3 years in the river. In May and June each year, smolts (juvenile salmon) undertake their outmigration, where they travel from the freshwater of the river to the ocean. They then spend one, two, or three years at sea before returning to the watershed to spawn. Unlike Pacific salmon, they can survive spawning and some return to the rivers to spawn multiple times.

Striped bass, while historically native to the Gulf of St. Lawrence and the Miramichi watershed, were never a dominant species in the overall ecosystem, nor were they established in any significant numbers beyond the head of tide. There thus existed a natural separation within the ecosystem between adult striped bass, which generally frequented tidal waters, and juvenile salmon, which were primarily found in non-tidal waters. With the explosion of the striped bass population as a result of DFO's restrictive management measures, the natural separation between adult striped bass and Atlantic salmon smolts eroded, with striped bass spreading throughout the river, where they now attack salmon at all levels of their juvenile development. Between May and June each year, striped bass congregate at unprecedented numbers at the head of tide for spawning. This coincides with the salmon outmigration, when salmon must swim through the gauntlet of voracious pre-spawning, spawning, and post-spawning bass at the constricted head of tide to make it to the ocean.

Acoustic tagging – a tracking method used to monitor and study fish movement, behaviour and survival – has proved that the percentage of salmon smolts that survive passage through the Miramichi River and the Miramichi estuary (which the Northwest and Southwest Miramichi branches flow into) into the ocean has plummeted in the last 15 years. According to annual tracking conducted by the Atlantic Salmon Federation and the Miramichi Salmon Association, from 2003 to 2008, 60% to 70% of Northwest Miramichi smolts made it to the ocean.[xxix] Today, ***only between 5-10%*** survive passage through the Northwest estuary (where ***most*** striped bass congregate to spawn) and ***approximately only 20% to 40%*** of Southwest Miramichi (where some striped bass spawn) smolts survive to the same point.[xxx] The population is not sustainable at these numbers.

4. Evidence Striped Bass Are Contributing to the Decline of Miramichi Atlantic Salmon

The decline and critical status of Miramichi Atlantic salmon is accepted and well documented. According to DFO, in 1992, 185,000 adult salmon returned to the Miramichi; in 2024, only 5,315 returned.[xxxi] Miramichi stocks are declining exponentially in relation to comparative rivers, which either do not have striped bass, or do not have striped bass at the levels of the Miramichi.[xxxii] There is overwhelming evidence that striped bass are causing this unprecedented decline in Atlantic salmon in the Miramichi River:

- Atlantic salmon smolt tagging experiments conducted by the Atlantic Salmon Federation and the Miramichi Salmon Association conclusively show that 95% of outgoing tagged smolts in the Northwest Miramichi, and 65% from the Southwest Miramichi do not survive estuary passage. A 2023 predator tagging study conducted by the Canadian Rivers Institute indicated that approximately ***70% of the tagged smolts from both branches combined were consumed by bass***, 20% by birds, and 3% to 5% by mammals (mink, otter, or seals).[xxxiii]

  - These experiments track smolts down the river and show that nearly all mortality is occurring when the salmon approach the bass spawning areas.

  - Data collected prior to the explosion of the striped bass population in 2010 recorded that 75% of smolts were reaching the ocean out of the Miramichi. This is similar to the current survival rate of smolts in other comparative rivers.

  - A historic rule-of-thumb was that 5% of salmon and grilse (a salmon returning to spawn after one year at sea) returns from the ocean would allow population sustainability. In recent years, repeat spawning has provided a considerable portion of the egg deposition: the percentage now required to sustain the salmon population is likely approximately between 3.5% to 5% of adult returns. Given that significant mortality occurs when the salmon are at sea, increasing smolt survival is critical to recovering the population – the fewer smolts that make it to the ocean, the fewer adults that return to spawn. If only 5% are making it to the ocean, it is statistically impossible that those smolts will survive their ocean migration with less than 1.5% point mortality over one or two years at sea and return as adults to their spawning grounds in sufficient numbers to sustain the population.[xxxiv]

- Other comparative rivers, where there is no substantial striped bass population in their estuaries, tagged smolt mortality rate is approximately 10%, meaning 90% of smolts survive to the ocean.[xxxv] There are reports that for the first time in recorded history, striped bass from the Miramichi have infiltrated the salmon pools in the nearby Restigouche River, with the river's salmon population coincidentally drastically declining.

- According to DFO's own science, there is a significant ***negative*** correlation between striped bass abundance and the survival of tagged salmon smolts, and striped bass abundance and adult salmon returns the next year in the Miramichi River,[xxxvi] meaning the higher the striped bass population is, the fewer salmon smolts make it to the ocean and the fewer adults return to spawn.

5. DFO Relies on Flawed Science to Ignore the Overwhelming Evidence of Harm

DFO refuses to acknowledge the evidence of harm, instead claiming, without scientific justification, that there is no evidence of population-level effects on Atlantic salmon from striped bass, and that the decline in salmon evidenced by the data is attributable to other factors. In particular, DFO relies on fundamentally flawed assessments, which are out-of-date and inconsistent with scientific standards and the weight of evidence approach, to justify its inaction in the face of the imminent collapse of Miramichi salmon:

- **Instead of using objective and reliable science to inform its management of striped bass in the Miramichi River, DFO simply ignores or minimizes scientific findings and results that conflict with its own management decisions.**

- **The more adult spawning striped bass in the Miramichi River, the fewer salmon smolts survive and the fewer adult salmon return to spawn.**

    - The author of Chaput (2022/30) acknowledges that striped bass eat juvenile Atlantic salmon and documents a ***significant negative*** correlation between bass abundance and the survival of salmon smolts, and the number of adult salmon returns the following year for the Northwest Miramichi, and between bass abundance and adult salmon returns the following year for the Southwest Miramichi.[xxxvii]

    - Despite documenting this evidence of population-level harm, the author concludes that there is no population-level effect from striped bass on Atlantic salmon.[xxxviii]

    - DFO ignores this negative correlation specific to the Miramichi River, maintaining that mortality at sea is the driver of Atlantic salmon population decline across the North Atlantic. This, however, does not explain why Miramichi Atlantic salmon are declining at an exponentially higher rate than populations in comparative rivers, and is inconsistent with the 2025 publication of the International Council for Exploration of the Sea – co-authored by DFO scientist, Chaput – that expressly found that "***management actions to improve survival in***, and production from, t***he in-river***, estuarian, and coastal waters are ***key to species and stock resilience***" (emphasis added).[xxxix]

- **Striped bass are sustainable at significantly lower population levels than 330,000 adult spawners.**

    - Chaput (2022/029) explains that the lowest abundance levels Miramichi striped bass had recovered from was 4,500 spawners between 1996 to 2000.[xl]

    - The authors conclude that maintaining a limit reference point of 330,000 adult spawners is sufficient to avoid harm to the striped bass population.[xli] Although 4,500 is too low to maintain as a limit reference point according to guidelines for the conservation of species set out by COSEWIC,[xlii] the authors offer no explanation as to why a limit reference point ***73 times*** greater is necessary and specifically note that this number does not consider other species.[xliii]

    - The authors also omit any consideration of historic bass population numbers, which numbered in the tens of thousands (averaging 36,000) and were considered healthy and stable, or that DFO determined the population stable enough to support a harvest with ***31, 200*** adult spawners in 2014. The authors do not explain why striped bass populations must now be maintained at a rate 10 times higher than what was previously determined to be healthy and capable of sustaining a harvest.

- **DFO provides alternate explanations for the Miramichi salmon decline which are unsupported by science and contrary to accepted scientific standards to undermine evidence of harm from striped bass to Atlantic salmon.**

    - Chaput (2018)[xliv] baldly asserts that acid runoff from a long since decommissioned mine – with its site run-off successfully treated – caused delayed mortality in tagged smolts and that it was this poisoning, not striped bass predation, that was responsible for the large-scale mortality in those tagged smolts.

        - The site was decommissioned in October 1999 and at the time ***– 20 years earlier*** – had severe adverse impacts on salmon.[xlv] However, there is no evidence that salmon populations were still being impacted by 2018 and the authors provide no results of any study on the mine or data from the tagged smolts which indicated that this could be a factor in smolt survival. Notably, the mine was only located on the Northwest branch of the Miramichi, however, populations in the Southwest branch are suffering nearly identical declines without the risk of a decommissioned mine. There is furthermore no explanation for why this runoff would cause a sudden and precipitous decline in salmon populations some 20 years after the mine's decommissioning. Tellingly, the authors also provide no indication that DFO intends to remediate the mine or the surrounding waters given the purported fatal acid contamination.

    - Chaput (2018) states that the negative correlation between Atlantic salmon smolt survival and adult returns, and striped bass abundance, could be due to smolts tagged in years with higher striped bass abundance being smaller.[xlvi]

        - No evidence or justification for this statement is provided.

    - Chaput (2018) purports that the results of acoustic tagging studies, which conclusively found striped bass consumed 95% and 65% of tagged salmon smolts in the Northwest Miramichi and the Southwest Miramichi, respectively, were biased and unreliable due to the impacts of tagging on behaviour and survival of tagged fish.[xlvii]

        - The scientific community overwhelmingly accepts and uses acoustic tagging to study salmon smolts. It is a broadly established and defined study method, with more than 5,400 studies using acoustic tagging reported on Google Scholar, and more than 250 being used so far in 2025 alone.

        - DFO provides ***no evidence*** that tagging had any measurable impact on the smolts studied, or that Miramichi River smolts would behave differently than smolts studied in the over 5,400 studies that have used acoustic tagging.

- Importantly, the studies DFO attempts to undermine are peer-reviewed according to widely accepted scientific standards for independent peer-review, unlike those papers relied on by DFO.

- **DFO relies on 9.5-year-old data to inform its management decisions for the Miramichi River.**

    - Chaput (2022/030) only relied on data up to 2016. Data collected in subsequent years make the negative correlation between striped bass numbers in the Miramichi and the survival of Atlantic salmon smolts even stronger.

6. DFO's Reliance on Flawed Science and its Consequent Mismanagement of the Fisheries is not Isolated to the Miramichi River

Issues regarding DFO's bias and lack of objectivity in its use of science and management of Canada's fisheries are long-standing and well-known:

- **1993:** DFO's own report into the collapse of the Atlantic cod fishery in 1992 found that DFO "***[m]anagement is fostering an attitude of scientific deception, misinformation, and obfuscation*** in presenting and defending the science that the department undertakes and the results it achieves" and that "[i]t has become far too convenient for resource managers and others to publicly state that their decisions were based on scientific advice ***when this is clearly not the case***" (emphasis added).[xlviii]

- **2015-2020**: Decisions of the Federal Court and Federal Court of Appeal confirm DFO failed to adhere to the precautionary principle and its core mandate to protect and conserve fish.[xlix]

- **2018:** The Office of the Chief Science Advisor of Canada found that DFO science is not objective and recommended that an External Advisory Committee and Departmental Science Advisor be appointed to address issues of bias;[l] and the Auditor General concluded that DFO was vulnerable to claims that it prioritized interests of BC's aquaculture industry over its mandate to protect and conserve fish.[li]

- **2022:** The Information Commissioner ordered DFO to release decade-old research discovering that a pathogen from a BC fish farm was associated with fatal disease in a Pacific salmon species, finding DFO had no lawful reason to withhold the information from an *Access to Information* request.[lii]

- **2023:** This Committee released its report, *Science at the Department of Fisheries and Oceans*.[liii] Numerous witnesses, including scientists and various stakeholders across Canada, provided extensive evidence confirming a deep distrust in DFO science and its ability to make objective and informed management decisions. Indeed, the supplementary report tabled by the Conservative Party committee members was titled "***Crisis of Trust in DFO Science***".

- This Committee made multiple recommendations aimed at addressing issues of bias and transparency in DFO science and management decisions raised by witnesses across different backgrounds, including, amongst others:
  - that given the numerous concerns with the CSAS process, including undue influence and lack of objectivity, "that DFO conduct robust peer reviewed, non-biased science with academic organizations" and that the government "initiate an independent audit of how and to what degree DFO has implemented their science integrity policy" (Recommendations 17 and 18, respectively);
  - that Canada's Chief Science Advisor investigate:
    - how DFO managers influence DFO scientists and ***if that influence is ethical*** (Recommendation 33); and
    - the viability of restructuring DFO systems and processes to "ensure that science advice is independently collated, assessed and delivered to DFO managers and decision-makers by DFO scientists" (Recommendation 34);
  - that the government "develop and table legislation that establishes a science-based fisheries management framework and a requirement for the government […] to ensure that DFO decisions align with the science-based management framework" (Recommendation 36);
  - an independent audit into if, and to what degree, DFO has implemented the Sustainable Fisheries Framework (Recommendation 37); and
  - an independent review of DFO risk assessments, including factors that resulted in the suppression of material evidence, and an independent audit to determine "the accuracy and decision-informing value" of information presented to the Minister (Recommendation 45).
- Notably, the Minister's response to the March 2023 Report provided no commitments to undertake the investigations or audits recommended by this Committee, and only made a vague commitment to "enhance [DFO's] use of independent experts" in DFO's science review processes. We have not seen this commitment realized.

7. Conclusion

Like the Atlantic cod fishery in 1992, DFO is driving yet another iconic Canadian species of fish to collapse. Without urgent and decisive intervention, DFO's persistent mismanagement of Canada's fisheries and refusal to act according to the best-available science and practices will result in the total loss of the Miramichi River's Atlantic salmon population.

We urge this Committee to exercise its authority to initiate a study into DFO's management of Atlantic salmon and striped bass in the Miramichi River, including DFO's use of science to inform its management decisions. Such a study can build upon those studies already conducted by this Committee in 2020 and 2023 on striped bass in the Miramichi River and the use of science by DFO, respectively, follow up on DFO's efforts to implement the Committee's previous recommendations, and update and develop recommendations which incorporate critical science published in the intervening years.

The SMS is available and would request the opportunity to appear before you in Ottawa, to provide evidence and witnesses for any study undertaken by the Committee on the issues outlined in this submission, including with respect to the ecological legal and socio-economic consequences of DFO's management actions.

Additionally given your committees previous directive to DFO in 2019 and DFO's gross failure to adequately address this worsening gross ecological imbalance; and given DFO's ongoing intransigence, all at the risk of the extirpation of Atlantic Salmon on the Miramichi; given these facts, we would include as part of this submission a request that further to the powers identified in Article 2 and Article 10 of the procedural guide for House of Commons Committees entitled "*Committees Practical Guide , ninth edition (Revised),* FOPO convene a subcommittee on Striped Bass in the Southern Gulf to assist and monitor and report on the issues and progress of implementation of any FOPO's reports and direction .

For any questions regarding these submissions or a future study on any of the issues identified in these submissions, please contact:

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Ian Knapp, Legal Counsel for SMS, iknapp@macfuj.com.

We thank you for your consideration.

Endnotes

[i] See sections 3 and 4 below.
[ii] See the following stories in *The Guardian*: https://www.theguardian.com/environment/2025/sep/11/canada-new-brunswick-miramichi-river-salmon-striped-bass-mikmaq-fisheries-ecology; and *CBC News*: https://www.cbc.ca/news/canada/new-brunswick/salmon-pool-prices-down-1.7632628.
[iii] See section 5 below.
[iv] See Report of the Standing Committee on Fisheries and Oceans, *Striped Bass in the Southern Gulf of St. Lawrence and Miramichi River: Striking a Delicate Balance*, Recommendation 1, available here, https://www.ourcommons.ca/Content/Committee/421/FOPO/Reports/RP10510226/foporp23/foporp23-e.pdf.
[v] See section 5 below.
[vi] See section 6 below.
[vii] Should the Committee wish a more fulsome briefing on the Minister's legal duties or Canadian fisheries law, we would be happy to have our solicitors provide a memorandum addressing any questions you may have.
[viii] As opposed to fish, generally. See G.V. La Forest and Associates, *Water Law in Canada: the Atlantic Province* (Information Canada: 1973)
[ix] *The Queen v. Robertson*, (1882) 6 S.C.R. 52
[x] Pursuant to the *Fisheries Act*, *Oceans Act* and *Department of Fisheries and Oceans Act*.
[xi] *Comeau's Sea Foods Ltd*, para 37.
[xii] *Comeau's Sea Foods Ltd. v. Canada (Minister of Fisheries and Oceans)*, [1997] 1 S.C.R. 12 [*Comeau's Sea Foods*], para 37. See also *R. v. Marshall*, [1999] 3 S.C.R. 533 [*Marshall*], para 40, citing: *R. v. Gladstone* [1996], 2 S.C.R. 723 [*Gladstone*].; *R v. Nikal,* [1996] 1 S.C.R. 1013; *R. v. Adams*, [1996] 3 S.C.R. 101; *R. v. Côté,* [1996] 3 S.C.R. 139; and *Delgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010.
[xiii] *R. v. Agawa* [1988], O.J. No. 1248 [*Agawa*] (leave to appeal ref'd, Nov 8, 1990), para 49.
[xiv] *In re British Columbia Fisheries*, (1913) 47 S.C.R. 493 [*Re British Columbia Fisheries*], pages 512-513, aff'd (1914) A.C. 153 (P.C.).
[xv] *Marshall*, citing *Gladstone*, *R v. Nikal,* [1996] 1 S.C.R. 1013, *R. v. Adams*, [1996] 3 S.C.R. 101, *R. v. Côté,* [1996] 3 S.C.R. 139, and *Delgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010.
[xvi] *Gladstone*, para 74.
[xvii] *Sparrow SCC*, page 1116; and *Gladstone*, para 54.
[xviii] *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*, 2001 SCC 40.
[xix] *Spraytech*, para 31.
[xx] *Morton v. Canada (Fisheries and Oceans)*, 2019 FC 143 [*Morton 2019*], para 160.
[xxi] *Morton v. Canada (Fisheries and Oceans)*, 2015 FC 575, paras 40-48 and 96-99; and *Morton 2019*, paras 125, 140, 192-193 and 213.
[xxii] In *R v. Sparrow*, [1990] 1 S.C.R. 1075 [*Sparrow SCC*], pages 1097-1099 and *Gladstone*, paras 31-32, the Supreme Court of Canada expressly rejected Canada's contention that the *Fisheries Act* extinguished rights to fish. See *R v. Sparrow*, (1986) 36 D.L.R. (4th) 246, (B.C.C.A.), page 26, aff'd in *Sparrow SCC*.
[xxiii] The 2011 counts were 74,273 (CSAS Research Document 2015/49, *Assessment of Atlantic Salmon (Salmo salar) in Salmon Fishing Area 16 of the southern Gulf of St. Lawrence to 2013*, available here: https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/361937.pdf). In 2024, the counts were approximately 5,315 (David Roth, Atlantic Salmon Federation, personal communication to John Bagnall, biologist and director of the SMS)..
[xxiv] See, *Canada's national strategy to ensure the future of Atlantic salmon 2024-2036*, available here: https://www.dfo-mpo.gc.ca/species-especes/publications/salmon-saumon/national-strategy-strategie-nationale/atlantic-atlantique-eng.html.
[xxv] CSAS Science Response 2025/011, *Update Of Spawner Abundance And Biological Characteristics Of Striped Bass (Morone Saxatilis) in the Southern Gulf Of St. Lawrence to 2024* ("**CSAS 2025/011**"), available here: https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41290987.pdf.
[xxvi] CSAS 2025/011.
[xxvii] CSAS 2025/011, p. 4.
[xxviii] CSAS Research Document 2022/030, *Multi-species Considerations for Defining Fisheries Reference Points for Striped Bass (Morone saxatilis) from the Southern Gulf of St. Lawrence* ("**Chaput (2022/030)**"), available here: https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41058537.pdf.
[xxix] Jason Daniels, Biologist / Research Scientist, Atlantic Salmon Federation, personal communication to J. Bagnall.

[xxx] G. Chaput and S. Douglas, CSAS Research Document 2022/029, *Fisheries Reference Points for Striped Bass (Morone saxatilis) from the Southern Gulf of St. Lawrence* ("**Chaput 2022/029**"), available here: https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41058501.pdf.
[xxxi] North Shore Mi'kmaq Tribal Council, *Plamu First 2024 | 5 Year Strategic Plan (2025-2030)*, available here: https://nsmtc.ca/wp-content/uploads/2025/05/Plamu-First-2024-Five-Year-Strategic-Plan-2025-2030.pdf, page 7.
[xxxii] J. Ritter report to SMS, *Is Striped Bass (Morone Saxatilis) Predation the Cause of the Decline in and Low Atlantic Salmon (Salmo Salar) Returns to the Miramichi River?* Available here: https://www.bradburnsfishing.com/wp-content/uploads/2024/05/Assessment-of-Miramichi-Salmon-Decline-20242.pdf.
[xxxiii] G. English, et al. "Determining early marine survival and predation by endothermic predators on acoustically tagged Atlantic salmon (Salmo salar) post-smolts" (2023) *Canadian Journal of Fisheries and Aquatic Sciences*. 81(4): 387-402. https://doi.org/10.1139/cjfas-2023-0206.
[xxxiv] AJF Gibson, CSAS Research Document 2006/016, *Population Regulation in Eastern Canadian Atlantic salmon (Salmo salar) populations*, available here: https://www.dfo-mpo.gc.ca/csas-sccs/publications/resdocs-docrech/2006/2006_016-eng.htm.
[xxxv] G. Chaput, et al., *Atlantic salmon (Salmo salar) smolt and early smolt migration and survival inferred from multi-year and multi-stock acoustic telemetry studies in the Gulf of St. Lawrence, northwest Atlantic,* (2018) ICES Journal of Marine Science, https://doi.org/10.1093/icesjms/fsy156.
[xxxvi] Chaput (2022/030), pages 13-15.
[xxxvii] Chaput (2022/030), pages 13-15.
[xxxviii] Chaput (2022/030), page 15.
[xxxix] ICES. 2025. Working Group on North Atlantic Salmon (WGNAS). ICES Scientific Reports. 7:44. 435 pp. https://doi.org/10.17895/ices.pub.28777226.
[xl] Chaput (2022/029), page 36.
[xli] Chaput (2022/029), page 38.
[xlii] Being the Committee on the Status of Endangered Wildlife in Canada.
[xliii] Chaput (2022/029), pages 36-38.
[xliv] G. Chaput et al. *Atlantic salmon (Salmo salar) smolt and early post-smolt migration and survival inferred from multi-year and multi-stock acoustic telemetry studies in the Gulf of St. Lawrence, northwest Atlantic,* (2018) *ICES Journal of Marine Science*, https://doi.org/10.1093/icesjms/fsy156, page 12.
[xlv] Decommissioning October - 1999. ZINC DIVISION: Farewell to a Pioneer: Heath Steele Mine and Mill. *Canadian Mining Journal*.
[xlvi] Chaput (2018), page 12.
[xlvii] Chaput (2018), page 12.
[xlviii] "Unnatural Disaster: How Politics Destroyed Canada's Atlantic Groundfisheries," by Elizabeth Brubaker, printed as Chapter 5 in *Political Environmentalism: Going Behind the Green Curtain*, edited by Terry L. Anderson, Hoover Institution Press, Stanford University Press, 2000, p. 168, quoting the 1993 *Science Council Final Report* conducted by DFO.
[xlix] *Morton v. Canada (Fisheries and Oceans)*, 2015 FC 575; *Morton v. Canada (Fisheries and Oceans)*, 2019 FC 143; and *'Namgis First Nation v. Canada (Fisheries, Oceans and Coast Guard)*, 2020 FCA 122.
[l] Office of the Chief Science Advisor of Canada, *Report of the Independent Expert Panel on Aquaculture Science December 2018*, pages 14 and 20, available here: https://science.gc.ca/site/science/sites/default/files/attachments/2022/Aquaculture_EN_final.pdf.
[li] *2018 Spring Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada Report 1 – Salmon Farming*, see paras 1.17, 1.49 and 1.75.
[lii] See *The Guardian*, "Canada ignored warnings of virus infecting farmed and wild salmon": https://www.theguardian.com/world/2022/apr/14/infected-farmed-wild-salmon-canada-virus-report; and *The Globe and Mail*, "Why a federal salmon study that found viruses at B.C. fish farms took 10 years to be released": https://www.theglobeandmail.com/politics/article-federal-salmon-study-that-found-viruses-at-fishfarms-released-10/.
[liii] Available here: https://www.ourcommons.ca/Content/Committee/441/FOPO/Reports/RP12052941/foporp08/foporp08-e.pdf.