

Recommendations for marine herring policy change in Canada: Aligning with Indigenous legal and inherent rights

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ABSTRACT

The time of Indigenous “inclusion” into state-led marine policy making is ending. Indigenous peoples are increasingly asserting their rights to *primary* roles in policy- and decision-making that affect their traditional homelands, freshwater bodies and oceans. Pacific herring governance is an important illustration of how coastal Indigenous nations, are reasserting legal and inherent rights to fisheries governance. Based in the empirical setting of British Columbia, Canada, this research examines (1) pressures for change to federal herring policy in the context of Indigenous rights and self-determination, and (2) the compatibility of Canadian federal marine policies with Indigenous herring governance. Findings suggest that Canada has an opportunity to implement new and strategic policy alternatives on herring that: better reflect emergent legal precedents; accommodates gains in Indigenous influence over decision-making; and supports the self-determination goals of coastal Indigenous nations. Given the context of fisheries uncertainty and a clear need to address Indigenous legal and inherent rights, Canada has an opportunity to position itself as a global leader in marine policy to reflect Indigenous inherent and legal rights.

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1. Introduction

“The literature connecting Canada's Indigenous peoples to ... its strategic prospects on the global stage, has yet to be written.... For now, the contours of the norms for this new dance are being drawn faster on the ground than the pens of intellectuals and the rhetoric of the political classes can bear. But mentalities will soon shift, as the opportunities will prove overwhelming, just as failure to seize them will, for Canada, prove overwhelmingly painful.” [1]

“We have attempted to work with government and others to conserve herring stocks. But for far too long catch levels were too high, fleets became increasingly efficient, and government officials were reluctant to take painful but necessary steps to sustain and rebuild populations.” [2]

State-based marine policy and management have entered a

new era in which Indigenous peoples are again playing a central, rather than secondary or tokenistic, role in the governance of marine resources. In a broader movement toward self-determination and survival [3], there are examples globally where Indigenous coastal peoples have made some gains toward again managing the marine resources within their traditional homelands. Affirmed by the United Nations Declaration on the Rights of Indigenous Peoples [4] (UNDRIP), coastal Indigenous nations¹ have continued to assert both their legal and inherent rights to fisheries and ocean resources, including the associated management and policy. For example, in 2008, the High Court of Australia [5] overruled the authority of the Federal Government to grant access rights to the inter-tidal zone in Blue Mud Bay, Australia, in favor of the exclusive right of Indigenous owners of the ocean area and the marine property within it [6]. In Vanuatu, Indigenous peoples have

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¹ The term “Indigenous coastal nations” is used in this paper to refer to Indigenous peoples, tribes, or nations from coastal territories which they have traditionally owned, occupied or otherwise used or acquired. The term Indigenous is the preferred term used in this paper. The term Aboriginal, which includes First Nations, Métis, and Inuit peoples, is also used here when referencing the Canadian legal context.

gained state recognition of customary marine tenure systems which allow them to regain control activities in marine areas of their traditional homelands [7,8]. In New Zealand, Maori pressure on the National Government resulted in the Settlement Act guaranteeing the Maori fishing quotas, Maori seats on fisheries statutory bodies, and customary fishing rights [9].

Canada is similarly notable in terms of Indigenous gains in rights to and control over traditional homelands and marine resources. From a legal standpoint, the Tsilhqot'in decision [10] made by the Supreme Court in favor of the non-coastal Tsilhqot'in Nation denotes observable success in the broader Indigenous struggle to re-establish rights. Considered by legal observers to be the "most important Supreme Court ruling on aboriginal rights in Canadian history" [10], arguably "in the world" [11], the decision granted title to the Indigenous nation of 1700 square kilometers of land within their traditional territory. This case was built upon the precedents of previous rights cases in Canada, including those pertaining to the Aboriginal fishing rights and coastal ancestral lands (e.g., *R. v. Sparrow* [1990]; *R. v. Van der Peet* ([1996] 2 S.C.R. 507; *R. v. Gladstone*, [1996] 2 S.C.R. 723). Since 2013, coastal Indigenous nations in British Columbia (BC), the focus of this paper, have gained a series of further fishing rights through the courts: In January 2014, five Nuuchah-nulth Nations were affirmed the aboriginal right to fish and sell any species of fish ([2013] BCCA 30). A month later the Nuuchah-nulth Tribal Council won an injunction ([2014] FC 197) which prohibited the DFO from opening a commercial roe herring (*Clupea pallasii*) fishery in the waters of their asserted traditional territory. Finally, during the commercial fishery the following year, the Council of the Haida Nation won an injunction ([2015] FC 290) to halt the commercial herring roe fishery in Haida Gwaii. In concert, the court rulings in favor of Indigenous nations signify mounting pressure on how marine resources are and will be managed in the context of Indigenous traditional territories.

The achievements in the Canadian courts are only one way in which coastal Indigenous nations are reasserting legal and inherent rights to marine resources. On the west coast of Canada, First Nations are challenging federal management authority on policy and management, demanding recognition as the stewards of their lands and resources, and demanding a fair share in harvesting rights [12]. Beyond just the interest in marine resources, these demands are emblematic of a broader global phenomenon of Indigenous struggles being pursued by Indigenous nations to reinstate self-determination, as well as inherent and legal rights to traditional homelands and resources [4,13–15]. This paper examines this broader phenomenon of Indigenous self-determination in the context of the Canadian Pacific herring fishery. This paper is based on empirical research investigating the pressure being applied by BC coastal Indigenous nations for changes to federal administration of the herring fishery policy and management.

Under the *Fisheries Act*² [16], the Canadian Department of Fisheries and Oceans (DFO) asserts authority over all fisheries and issuance of fishing licences in Canada. The Dominion of Canada first formally asserted this authority on the Pacific coast of Canada in 1871 as BC joined the Canadian confederation. The colonization of the west coast by the British Crown in the early 1800s, displaced and marginalized Indigenous coastal peoples from their traditional homelands and ocean fishing grounds [17,18]. Displacement and marginalization of Indigenous coastal peoples from their herring

fishing grounds was largely a result of purposeful action by the Canadian state to curtail Indigenous access to herring spawn harvest and trade through (1) the creation of an "Indian food fishery" [19], (2) the implementation of a reserve system for Indigenous peoples which effectively displaced their former ways of living on the land and sea, and (3) the alienation of coastal land parcels for newcomers [17]. These actions to displace and marginalize Indigenous peoples by the Canadian state were intensified by the devastating residential school system established for Indigenous peoples in Canada. From the late 1800s through the late 1900s, residential schools in BC removed Indigenous children from their families in an effort to extinguish their culture, traditions and language [20]. This systematic exclusion from fisheries resources and oppression of Indigenous coastal peoples reduced opportunities for Indigenous coastal peoples to harvest herring and undertake cultural, political, and economic practices related to that fishery [21,22]. Since herring for food, oil, bait, and spawn³ have long played a crucial role in Indigenous livelihoods on the Pacific coast for food, trade, ceremonial and social traditions [9,23], this colonial legacy has been damaging to the livelihoods of coastal peoples whose way of life has depended on herring and herring spawn for millennia [23,24].

Today the Canadian Government continues to act with little deference to the rights and governance authority of coastal Indigenous nations to herring. For example, in both 2014 and 2015, former Canadian DFO Minister Shea overruled formal requests made by three coastal Indigenous nations in BC for the herring fishery to remain closed [25–27], and instead authorized the opening of the commercial herring fishery. The reaction of these three Indigenous nations (Haida, Nuuchah-nulth, and Heiltsuk (Fig. 1)) to these openings have been embedded in broader actions of Indigenous self-determination.⁴ These nations have found legal and other means to halt or minimize the opening of the herring fishery in their respective territories. Outside of the courts, the Council of the Haida Nation circumvented the DFO's decision in 2014 by negotiating directly and privately with commercial herring fishermen to stay out of Haida waters [28]. These coastal Indigenous nations, along with the Kitasoo/Xai'Xais, have further asserted their inherent rights and responsibility to herring governance through a formal *Herring Declaration of Solidarity of B.C. First Nations* which affirms their inherent rights to manage their sea resources [29]. Inherent rights imply Indigenous rights (including those to herring) that exist outside of colonial legal processes, and that precede and were not dissolved by colonization [30]. Consequently, the dominant role played by the DFO in herring governance, coupled with the historical and ongoing commercial-scale herring harvest occurring in Indigenous traditional territories, plays a major role in driving coastal Indigenous nations in BC to protect herring and their long-standing relationship to herring.

In a bid to regain a more primary role in herring governance and policy-making, coastal Indigenous nations in BC are increasingly finding ways to mitigate the dominant roles of DFO and the commercial herring industry. Driven in part by a need to change dominant federal fisheries policies which do not reflect Indigenous values [31], coastal Indigenous nations are applying a variety of tools and strategies to force change (Author, in review). These circumstances of increased pressure for a change to policy and

² In addition to the *Fisheries Act* legislation, a number of regulations also affect the herring fishery and licensing, e.g., *Fishery (General) Regulations* SOR/93-53, *Aboriginal Communal Fishing Licences Regulations* SOR/93-332, *Pacific Fishery Regulations* SOR/93-54, and *Pacific Fishery Management Area Regulation* 2007 SOR 2007/77.

³ Herring spawn on kelp (SOK) is the term that describes the fishery where herring eggs are collected from kelp (or boughs) after herring have spawned. It is a traditional harvest of Indigenous coastal nations [48].

⁴ This paper focuses on actions of self-determination and resistance that occurred during the field research. However, Indigenous resistances have been occurring since contact. For a timeline of the interaction between DFO and Indigenous peoples of the BC central coast over herring, see Gauvreau 2015.

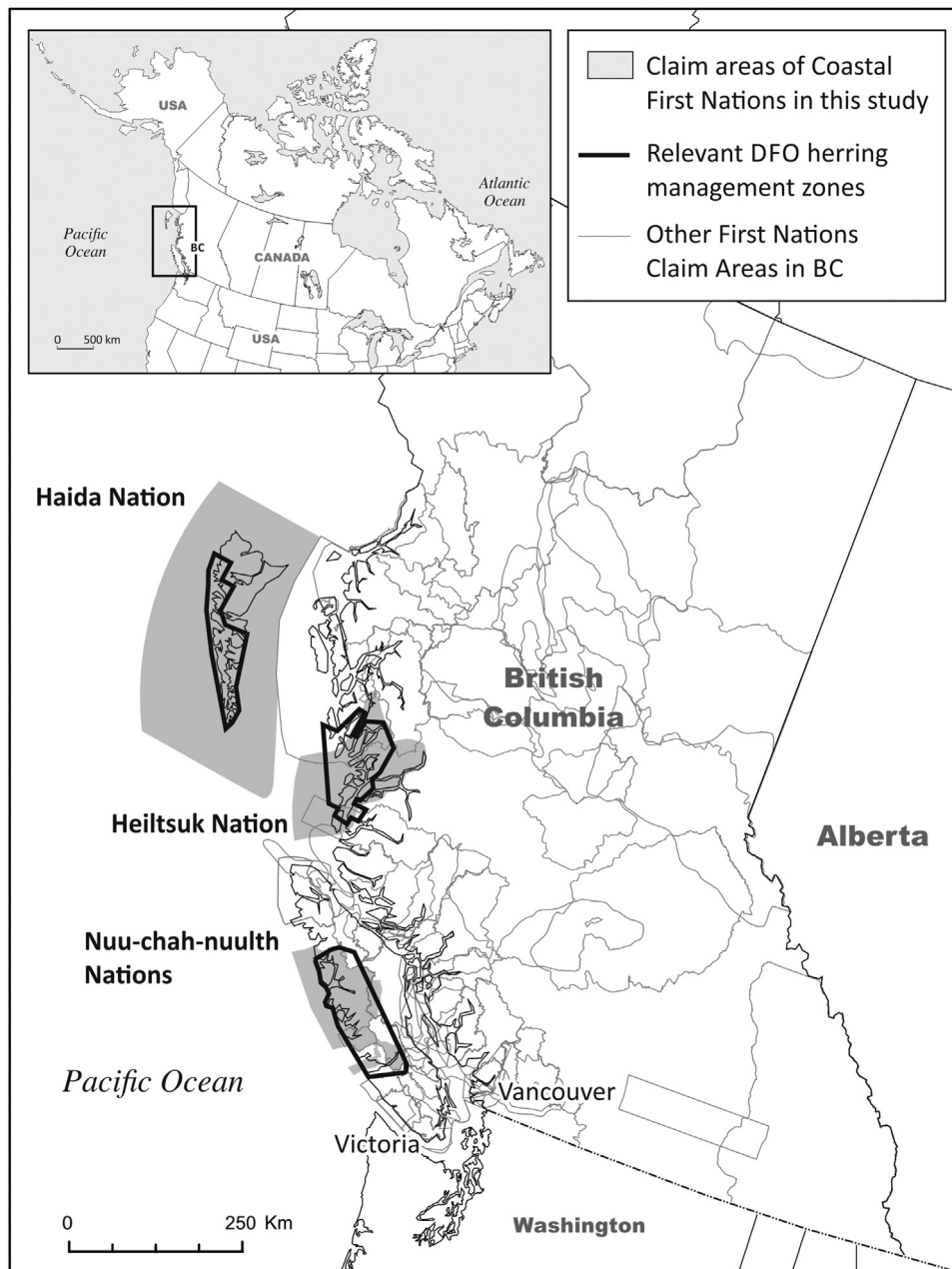


Fig. 1. Claim areas of traditional territories of three the coastal Indigenous nations used in this case study on the Pacific Coast of Canada.

governance, in addition to declining herring populations and habitat [23], thus pose a mounting challenge to federal policy makers who can no longer easily manage herring fisheries under the current status quo. This paper presents the findings from research which examined state-dominated herring governance in the context of Indigenous self-determination. The study examined the legal and political pressure being applied by three coastal Indigenous nations in BC on federal herring policy-makers, as well as policy challenges and solutions which arose from interviews and other data. This paper thus presents the emergent findings on possible policy alternatives for Canada to modify its approach in light of ongoing turmoil related to the herring fishery on the west coast.

2. Positionality

The four authors have come to collaborate on this topic from

different areas of expertise. The first author is a white settler/scholar living on the unceded homelands and waterways of the Squamish Nation. Her interest in this research comes from to goal to act in solidarity with the leadership of Indigenous people in decolonizing Canada. The second author is a white settler/scholar living on the unceded homelands and waterways of the Coast Salish. Her anthropology-based research with coastal Indigenous peoples in the Pacific Northwest has allowed her to work in the traditional territories of and, in collaboration, with several coastal Indigenous nations in BC. The third author is Anishinaabe from Wiigwaskingaa and brings expertise to this research on Indigenous knowledge as it related to the environment. The fourth author is a white settler/scholar living on the unceded homelands and waterways of the Attawandaron, Haudenosaunee, Ojibway/Chippewa, and Anishinabek. She brings expertise to this research in the realm of contested ocean space and marine resource

management in the context of Indigenous traditional territories in BC.

3. Methods

Canada's Pacific coast overlaps with the claim areas of the traditional territories of multiple coastal Indigenous nations in BC (see Fig. 1). In BC, most Indigenous nations have not signed historic treaties with the Government of Canada, and thus have not relinquished ownership or control of their lands and oceans. These circumstances of largely unceded coastal lands, which contravene colonial claims to the lands and oceans by the Canadian government, created a rich setting for this research, in particular examining the interplay between Indigenous resistance and federally governed marine resources.

A qualitative single case study approach [32,33] was used to (1) observe changes in the influence of Indigenous nations over their traditional marine resources, (2) examine the legal, political and strategic measures being utilized by and among Indigenous nations to regain control over the herring fishery and (3) to learn observe challenges and alternatives to policy-making in the Pacific region of Canada. This single case study examined the interactions of three coastal Indigenous nations, the Haida, Nuu-chah-nulth, and Heiltsuk whose traditional territories overlap with DFO herring management zones (Fig. 1), among themselves as well as with Canada (via DFO) and industry. This setting, rife with ongoing political-legal struggles among players over herring, was ideal for observing the processes of Canadian herring governance juxtaposed with the reinvigoration of Indigenous forms of herring governance.

Four criteria were used to select the Indigenous nations in BC for this study. First, the Indigenous nation had to be a coastal nation with a history of traditional use of herring and/or herring spawn. Second, the nation had to be actively engaged in influencing Indigenous governance of herring. Third, the Indigenous nation had to be located within the DFO's Pacific Region of fisheries management (which includes the whole BC coast) (Fig. 1). Fourth, the nations selected were leaders of prominent and distinct actions with respect to legal and inherent rights to the BC herring fishery. Data collection in the form of interviews, meetings, and the gathering of documents, related audio and video recordings, and media, occurred between May 2014 and December 2015 over two herring fishing seasons on the west coast. Interviews were sought from Indigenous leaders and from federal policy-makers. The study maintained anonymity of the interview respondents. The data collection was focused on the Haida, Heiltsuk, and Nuu-chah-nulth. However, additional data from other sources (e.g., media and videos), included non-Indigenous informants, informants from other Indigenous nations in BC and the United States (Table 1), government agents, lawyers, and researchers. In addition to the audio and interview data sources presented in Table 1, the first author attended three meetings with First

Nations, DFO, industry, lawyers, and researchers focused on the planning of the herring fishery.

During the data collection period, 122 relevant documents were gathered (Table 2). The documents selected were publicly available and were directly related to matters of governance of herring on the Pacific coast. Documents were from a variety of sources including online and print media, First Nations, industry and DFO.

QSR NVivo 10 software was used to catalogue, code, analyze and triangulate the data from meetings, interviews, documents, and audio sources. Interviews and audio recordings were transcribed, then analyzed with the documents using first-pass codes to identify broad themes related to the research question. Next, the data were analyzed using axial second-pass coding to identify emergent concepts and connections among themes [34,35]. Finally, themes were systematized to match policy challenges with emergent alternatives and solutions.

4. Results

This research revealed four major findings concerning marine policy related to the management of herring. The first two findings identified both (1) legal and (2) political pressure by coastal Indigenous nations on the Canadian Federal Government to change existing herring policies and management. The other major findings were the emergence of (3) specific policy problems related to herring in light of Indigenous inherent and legal rights and (4) prospective solutions that could address perceived and court-mandated needs for changes. First, the findings related to the Indigenous pressures for policy and management change are presented. These are followed by Table 3 which pairs findings on challenges related to Canadian federal herring policies with emergent solutions.

4.1. DFO response to Indigenous legal pressure for policy change

This research revealed occurrences of legal pressure being applied by coastal Indigenous nations on the DFO to change its policies and management approach related to herring. The relevance and effect of past [36] and ongoing legal challenges appeared consistently throughout the data, including documents and interviews. This mounting pressure has been reinforced in part by the direction of the supreme and lower courts in Canada as described in the introduction of this paper. The effect that these legal pressures have had on the DFO are outlined by a former DFO employee:

There were a bunch of court cases in the early 90s that really started to put First Nations fishing rights at the forefront... that really started to not just establish fishing rights, but also consultation rights. There was a lot of pressure on DFO ...to change the way they were doing things. They had been operating [with the assumption of], "obviously we are governing the entire resource we don't really need to share management with any other people". First Nations are basically treated as a stakeholder at the table. As soon as their legal rights got pushed to the forefront, DFO started to [say] "we need to change some things". There has been a shift, and they are starting to shift.

The understanding within the DFO of the need for policy and managerial change was reiterated by a DFO manager speaking at a herring workshop:

I know that from a policy perspective, and hopefully from an operational perspective, we see a greater role for First Nations and stakeholders in policy development, and decision-making.DFO is certainly shifting from a centralized top-down form of management, to a model-based co-management shared stewardship partnership. ...that is gradually being integrated into our core

Table 1
Audio and interview data sources.

Source	DFO	Haida	Heiltsuk	Nuu-chah-nulth	Other Indigenous Nations	Informant (e.g., lawyers, researchers) ^b
Interviews	5	4	3	3	–	1
Other audio ^a	4	2	24	6	6	6

^a Other audio data sources included recorded conference and workshop presentations, video recordings of individuals, radio interviews, and online videos from social media.

^b Industry representatives did not respond to requests for interviews.

Table 2
Document data types.

Document type	News article	Open letter	News release	Report	Other ^a	Court document	First Nation legal ^b	Meeting minutes	Federal legislation
Total	56	16	11	11	13	7	3	3	2

^a Other sources included academic articles, legal agreements, books, bulletins, posters, presentation slides, radio interview transcripts and emails.

^b The First Nation legal documents were the Haida-Heiltsuk Peace Treaty [34], a Herring Declaration [29], and the Haida Constitution [35].

business and the type of work that we do. It is a painfully slow process.

These quotations demonstrate an acknowledgment by the DFO that coastal Indigenous nations desire a greater role in marine decision making. The findings from this research, particularly from interview and document sources, suggest that legal pressures have played a role in forcing this acknowledgment.

For example, the connection between the court decisions and the need for coastal Indigenous nations to have a greater decision making role beyond that of an included “stakeholder”, is expressed by two different Indigenous leaders in the following quotations:

We do have an aboriginal title and right to harvest roe on kelp commercially which we won in the highest courts in the land. So it is important to us to be fully involved in the rebuilding of the herring stocks and to be fully involved in the management of the herring fishery.

Because of the court cases and because of the fact that First Nations have implicitly said that as owners we have title and rights and we have a responsibility to manage the resources, such as the herring stock, we now have the opportunity to sit down with the Department of Fisheries to discuss the integrated fishery management plans... we have historically said that First Nations are owners, so we should not have to sit with stakeholders to discuss the management of a specific fishery such as the herring fishery.

Data sources repeatedly pointed to a disparity between the Aboriginal fishing rights won in court and the translation of this into policy or management. For example, two different Indigenous leaders noted that the DFO has not carried out or enforced the legal precedents:

The Nuu-cha-nuulth, just after the herring decision, there was a Supreme Court ruling on rights. Which DFO has been dragging their heels on for a couple of years now. [The Supreme Court] just agreed with what the lower court said [that Nuu chah nuulth rights to fish any species of fish (including herring) and to sell fish will be upheld (Ahousaht v. Canada 2013 BCCA 30)]. So that came out and [DFO] weren't complying with that [court] direction.

We also come from a place where we see the case law, Sparrow [R v Sparrow, [1990] 1S.C.R.], Van der Peet [R v Van der Peet, [1996] 2S.C.R.], Gladstone [R v Gladstone, [1996] 2S.C.R.], and even now currently the Nuu-cha-nuulth [Ahousaht v. Canada 2013 BCCA 30], and get told to negotiate [with DFO], try to reconcile... I have nothing against the frontline DFO people, I find a lot of them very nice, but I keep getting told that they are only messengers... We need real decision-makers, and we need to know why case law, which should be the law, is only informing policy and not enforced.

These two quotations indicate the presence of gaps between the courts' directions on herring governance, and actual management by the DFO. Specifically, these court cases on Aboriginal rights to herring, directed the DFO to engage in meaningful negotiations with First Nations and gave DFO a “mandate to negotiate fisheries that accommodate” Aboriginal fishing rights [37]. Indigenous respondents in this study expressed a dissatisfaction that both older and recent court rulings related to fisheries had not translated meaningfully into DFO policies or management. This growing need for the DFO to allow First Nations a meaningful role

in the governance of herring, via policy or discretionary decisions, is increasingly being supported by both lower and supreme courts [38].

4.2. Political pressure for policy and management change: Indigenous nations demanding greater control of herring fisheries

In addition to court rulings on Aboriginal fisheries in BC, the research revealed many avenues through which coastal Indigenous nations were applying pressure on DFO policy makers to gain more Indigenous control over herring fisheries decision making. To do this, coastal Indigenous nations used a variety of tools, actions and strategies such as collaborating with Indigenous and non-Indigenous allies; blockades and on-the-ground protection of Indigenous traditional territories; media exposure (social and mainstream); political leveraging at provincial and national levels; and negotiating privately with industry.

There were several driving forces behind the use of these strategies. The perceived need for change to herring governance was based in part on concern over declining herring stocks and loss of habitat, but also over Indigenous inherent rights, Indigenous livelihoods, and approaches to management. These concerns are represented in the following quotations from three different Indigenous leaders:

The systems of managing herring has to change. We can't continue on the way it is going. Herring is a very important species to the Heiltsuk people, and we don't want to see it depleted the way it has been. We want to see that the DFO are rebuilding the stocks and they work with Aboriginal people to do that.

What we hope to achieve at the end of the day is we have a bigger say, and we guarantee access our fishery according to the doctrine of priority as second to food, social, ceremonial. In order for us to do that, we have to change the fisheries management structure to accommodate that.

[Herring] belongs to all of us. We [First Nations] have to step outside of your [DFO] policies and regulations and the *Fisheries Act*... Your hands are tied by your policy, and your regulation[s], even if you know personally that the right thing to do is this, you can't, and you won't. And we have to get around it.

These quotations are representative of the perceptions expressed by the Indigenous coastal interviewees in this study. They illustrate widespread collective and perceived need for change to DFO policy and management, accompanied by a need for significantly greater Indigenous decision-making related to herring. For example, one interviewee, an employee of the DFO, demonstrated an understanding of the need for change to herring management and the current power structure within the DFO:

We need to work toward non-unilateral decision-making. More consensus-based decision-making. But at the end of the day the [DFO] Minister is like ‘I have the authority’. So it is like, ‘well yes we [DFO] will agree to this consensus, but at the end of the day we can still do whatever we want’.

Another non-Indigenous employee of one of the coastal Indigenous nations gave a different perspective on the inclusion of First Nations into herring decision-making:

If you look over time, and I guess I give DFO credit for this, with the including First Nations in herring advisory processes... You

Table 3

Findings on policy challenges and solutions in herring fisheries governance in coastal British Columbia, Canada.

Policy challenge (conflict/problem/need)	Policy solutions (options/strategic alternatives)
<p>Scale of approach to herring management</p> <p>Problem: The DFO herring policies which apply uniformly to the BC coast create local-scale difficulties for Indigenous nations:</p> <p>(a) Some DFO herring fishery decisions are made in Ottawa where local circumstances of herring, people, and implementation are not well understood.</p> <p>(b) National-level herring policy disempowers Indigenous nations from making local and in-season decisions about herring.</p> <p>(c) Regions of herring management are different than First Nations traditional territory boundaries and individual stocks.</p> <p>(d) Herring management based on assumptions of single herring stocks incongruent with First Nations knowledge of stocks.</p> <p>Economic certainty</p> <p>Need: There is a need for more certainty surrounding herring for Indigenous nations for future subsistence and income:</p> <p>(a) Indigenous individuals perceive a decline in the abundance of herring since the 1950s; as such there is a lack of certainty for Indigenous peoples about herring abundance in the future.</p> <p>(b) Coastal Indigenous nations have stated the need for certainty of access to subsistence and commercial herring fishery, and priority over non-Indigenous commercial herring fisheries access.</p> <p>Incongruence between DFO and indigenous laws and policies</p> <p>Problem: The difference between Indigenous policies and DFO policy creates incongruent approaches to herring management:</p> <p>(a) National-scale DFO herring policies don't accommodate internal policies or traditional laws of Indigenous nations on local harvest, allocation to individuals and families, and monitoring.</p> <p>(b) DFO herring policies do not account for the existence of, and ongoing creation of, intertribal and inter-nations fishing protocol agreements among coastal Indigenous nations.</p> <p>(c) The UNDRIP has not yet been incorporated into policy related to Indigenous peoples and herring.</p> <p>Indigenous rights to decision-making</p> <p>Problem: Courts and Indigenous nations are demanding a greater role for First Nations in the management of fisheries:</p> <p>(a) DFO policies and decisions related to herring are 'top-driven' and tend to exclude First Nations from meaningful involvement.</p> <p>(b) First Nations need better communication with DFO throughout the year, and open talks with industry at the table to avoid ongoing conflict over decision making.</p> <p>(c) Indigenous nations perceive that they are unjustly handed-down herring policies and plans rather than creating them.</p> <p>Co-Management</p> <p>Need: The DFO has not defined its approach to co-management with First Nations to manage herring fisheries:</p> <p>(a) Some coastal Indigenous nations are hesitant to agree to co-manage fisheries with DFO which has not defined its co-management policy framework.</p> <p>(b) Attempts by DFO to co-manage with First Nations have been perceived by First Nations as unequal in terms of their meaningful input into herring fisheries management.</p> <p>Environmental Protection</p> <p>Need: Indigenous nations perceive a need for greater environmental protection of herring fish and their habitat:</p> <p>(a) The DFO policy and management framework used to assess herring populations are considered to be outdated in terms of validity by some DFO staff as well as many Indigenous leaders.</p> <p>(b) Perceived need by Indigenous nations and non-DFO fisheries scientists for DFO policy that better protects herring and habitat in light of commercial fishing, climate change, and other threats.</p> <p>(c) Existing DFO policies do not accommodate for Indigenous nations' vision of managing herring on a 100+ year scale, and instead manages on a shorter-term year-to-year basis.</p> <p>Knowledge Systems</p> <p>Need: Indigenous knowledge systems need to have a meaningful role in DFO herring policy or management.</p> <p>(a) Indigenous nations need policies which value and utilize Indigenous knowledge systems, not exclusively Western scientific knowledge, for herring decision making.</p>	<p>Strategic alternative: Redraw the Pacific coastal herring management region (see Fig. 1) to reflect local Indigenous and practical circumstances:</p> <p>(a) Shift management regions or spatial references from coast-wide to ones that are meaningful to coastal Indigenous nations and differing local needs and realities.</p> <p>(b) Policy that allows for local and in-season decision making by Indigenous nations regarding herring.</p> <p>(c) Use First Nations traditional territories to delineate local management areas.</p> <p>(d) Policy that allows for multiple herring stocks to be managed as individual stocks and year-to-year fluctuations in migration.</p> <p>Policy solutions: Create policies which increase access of First Nations to herring fisheries and that apply court rulings related to herring:</p> <p>(a) Policy outlining sharing arrangements between Canada and First Nations.</p> <p>(b) Herring policy which reallocates First Nations a "minimum 50 per cent share of all fisheries, with the understanding that this may eventually reach 100 per cent in some fisheries" [9].</p> <p>(c) Set aside exclusive herring fishing areas for First Nations harvest for both food, social, ceremonial and economic needs.</p> <p>Policy solutions: Create policy which allows for the co-existence of Indigenous policies:</p> <p>(a) Amend federal law to allow an equal role for Indigenous nations' codified traditional laws to be applied to herring allocation, harvest, monitoring, and in-season decision-making within traditional territories.</p> <p>(b) Amend DFO policy to accommodate for existing and future intertribal and inter-nation fishing agreements, management plans and policies between and among coastal Indigenous nations.</p> <p>(c) Amend DFO policy pertaining to herring to include the UNDRIP Indigenous rights related to resources (fish) for coastal Indigenous nations.</p> <p>Strategic alternative: The DFO creates policy which relinquishes some decision-making power to coastal Indigenous nations and meaningfully engaging with First Nations on herring management decisions:</p> <p>(a) The DFO works to recognize, in both policy and management, its legal duty to engage in meaningful consultation and accommodate of First Nations.</p> <p>(b) Indigenous nations are handed over the role of assessing herring stocks and managing agreed-upon aspects of the herring fishery from DFO.</p> <p>(c) Coastal Indigenous nations are set aside exclusive fishing areas to allow them to exercise their right to decision-making on herring.</p> <p>Policy solutions: The DFO writes a policy framework on co-management agreements with First Nations in the context of BC fisheries:</p> <p>(a) DFO writes a co-management policy framework that defines Indigenous nations as nations, rather than as stakeholders or interest groups, and lays out a clear intent.</p> <p>(b) DFO creates a co-management framework that requires an equal partnership with First Nations in terms of decision-making power, veto, implementation, stock assessment, allocation, and licencing.</p> <p>Policy solutions: Amend DFO policy related to herring fish and habitat that reflects new environmental threats and realities:</p> <p>(a) DFO updates its policy and management frameworks pertaining to the assessment of herring stocks that are both congruent with the up to date methods and that are transparent for Indigenous fisheries managers.</p> <p>(b) DFO creates updated policy which allows for rigorous measurements of the impacts of climate change, commercial fishing and other environmental threats to habitat, herring populations and herring migration.</p> <p>(c) Creation of new DFO policy which allows for Indigenous nations to take the lead on managing herring habitats and harvest with longer time scales and local observation.</p> <p>Policy solution: Create herring policy which utilizes Indigenous knowledge and/or leaves space for Indigenous knowledge holders to apply it:</p> <p>(a) Write policy or a management framework which enables Indigenous nations leadership over herring to a degree that allows them to apply their Indigenous knowledge to herring governance.</p>

Table 3 (continued)

Policy challenge (conflict/problem/need)	Policy solutions (options/strategic alternatives)
(b) There is lost potential in science-based marine policy which does not also draw upon Indigenous knowledge on herring.	(b) Write policy which does or has the potential to directly apply Indigenous knowledge alongside science-based herring policies.
<p>Levelling the playing field</p> <p>Problem: DFO has an unfair human, financial and resource capacity advantage relative to small coastal Indigenous nations:</p> <p>(a) The ability for Indigenous nations to engage with DFO in negotiations on herring is compromised by a lack of comparative capacity in the form of resources, size and personnel.</p> <p>Prioritization of Sustainable Fisheries (SOK)</p> <p>Need: coastal Indigenous nations perceive the need for the prioritization of spawn on kelp (SOK) fisheries at a policy-level:</p> <p>(a) Need for separation in policy and management between the commercial SOK fishery and the less sustainable roe fishery</p> <p>Circumvention of federal policies</p> <p>Issue: DFO herring policies and management are triggering Indigenous nations to circumvent and thus undermine the relevance of the policies and management authority:</p> <p>(a) Coastal Indigenous nations are using the courts to assert their rights to change DFO policies and management related to the herring fisheries, e.g., commercial rights to sell fish.</p> <p>(b) The Haida Nation has circumvented DFO herring management decisions by negotiating directly with industry to achieve a different outcome than that called for by DFO.</p>	<p>Strategic alternative: DFO (or other agents of Canada such as Indigenous Affairs) provides resources to Indigenous nations to “level the playing field”:</p> <p>(a) Resources in the form of compensation for travel and time, and monies to hire experienced personnel could be provided to First Nations for them to engage fully in herring negotiations in a nation-to-nation process with Canada.</p> <p>Strategic alternative: Manage the commercial spawn on kelp fishery and roe fishery with different policies and objectives:</p> <p>(a) Create policy which prioritizes the spawn on kelp fishery with its own assessment and cut-offs, and more strategically coordinated with roe fishery.</p> <p>Strategic alternative: Create policy which empowers local Indigenous nation managers to implement their own Indigenous policies relevant to their nation and to make decisions about herring fisheries:</p> <p>(a) Create policy which proactively affords Indigenous nations broad fishing rights in order to ease pressure on the need for both DFO and First Nations to negotiate through the time- and resource-intensive court system.</p> <p>(b) Devolve herring governance power to First Nations to allow for existing and growing First Nation alliances on herring management (e.g., Central Coast Indigenous Resource Authority), as well as Indigenous alliances with industry.</p>

hear from First Nations that they don't think their voices are heard, but 20 years ago there was no voice at all, it was just industry and DFO. So look at it now where First Nations have experienced staff, they go into a meeting and they work with academic groups ... [who] First Nations are relying on in terms of being able to do battle on a level playing field with [DFO] department staff, with science staff in particular who live and breathe this stuff.”

This quotation gives perspective on the evolution of the role of coastal Indigenous nations in relation to herring and the DFO. It also indicates how coastal Indigenous nations have engaged to change policy and have a say in the science driving decision making. However, an op-ed article published during the data collection phase of this study by BC Provincial MLA Andrew Weaver paints a less optimistic view of genuine change in DFO approaches to herring over time:

The DFO releases an annual ‘Pacific Herring Integrated Fisheries Management Plan’, which, on the surface, appears to be a comprehensive report. Reading ten years’ worth of these documents, however, only further convinced me that the DFO not only has a limited understanding of herring’s ecological importance, requirements, or how to safely manage them, they also don’t seem to care. Take this section of the 2004 report...: ‘At this time there is no information available on the appropriate conservation limits for the ecosystem as it pertains to the herring stocks’. It ...ends with: ‘Research is ongoing to better understand these ecosystem processes and the role herring plays in maintaining the integrity and functioning of the ecosystem.’ ...I then read the exact, word for word, statement in the 2013 report. Nine years later they have failed to do any of the conservation research they claimed to be working on, and they don’t even care enough to write a new excuse.

Weaver’s critique of the DFO mirrors the opinions voiced by other non-Indigenous individuals calling for changes to herring policies and/or supporting the stance of BC coastal Indigenous nations on calls for policy reform. Findings from this study indicated that a growing number of dissenting voices, including Canadian environmentalists, scientist, members and leaders of the commercial fishing union, and some federal politicians, supported coastal Indigenous nations’ stance on DFO on herring policy. However, very little data were gathered or readily available from

commercial industry advocates and non-Indigenous licence-holders.

4.3. Policy challenges and solutions

Table 3 summarizes the findings of specific policy challenges and matches them with corresponding findings related to policy solutions or strategic alternatives. The table summarizes the ten major policy challenges as either an issue, problem, or need. The responses to these problems found in the data set were then consolidated as either a policy recommendation or a strategic alternative. All of the challenges (column 1) and the alternatives (column 2) come directly from the research findings, including interviews (Indigenous and DFO), documents, observations, and other aforementioned data sources. Thus, the results in Table 3 are assembled directly from the voices and perspectives of the experts and Indigenous leaders who contributed to the data collected in this research. Because of the large volume of rich data from which these results were derived, Table 3 provides a condensed and practical summary of the challenges for herring policy and management in the Pacific Region of Canada, and ways in which future policy and management can answer existing legal and political pressures.

5. Discussion

Four main themes emerged from the analysis: coastal Indigenous nations in BC are applying (1) legal and (2) political pressure to DFO policy-makers to gain greater Indigenous control of herring governance within claimed traditional territories and oceans; (3) there are problems with DFO’s approach to policy and management of herring in the context of unrelinquished Indigenous territories (Table 3, column 1); and (4) there are practical policy alternatives (Table 3, column 2) which have the potential to shift current approaches to DFO herring management in Indigenous coastal territories (Fig. 1). These emergent alternatives create avenues for federal policy makers to lead change in marine policy and management, rather than expending resources to maintain the status quo. These findings are significant because

they indicate not only mounting pressure for change for marine policies in the context of Indigenous traditional territories and the herring fishery, but also tangible ways in which novel changes to policy can be made by the Canadian federal government.

The findings from this research suggest concrete alternatives for policy change in light of Indigenous struggles toward self-determination and related tensions over herring governance. There is no single policy solution to these pressures or barriers to doing so, but rather a range of opportunities for the DFO to enact forward-looking policies on herring. For example, policy which generates exclusive fishing areas for Indigenous nations within their territories has the potential to safeguard habitat, meet Indigenous food and economic needs, re-implement aspects of traditional ownership systems [9,39], and support self-determination goals of individual Indigenous nations. Similarly, respondents and documents revealed problems related to the exclusivity of Western science in present-day herring fisheries decisions. Findings correlated to a policy opportunity to enact regulations requiring the use of Indigenous knowledge systems in herring fisheries decision as a way to alleviating those problems [21]. For example, when it comes to Indigenous and Western knowledges, Bartlett et al. suggest taking an approach of “two-eyed seeing” wherein individuals “familiar with both knowledge systems can uniquely combine the two ...in the context of environmental crises” [40, p. 114]. Giles et al. advance the idea that using the two-eyed seeing approach in the context of overlapping knowledge systems in the Canadian context builds mutual respect between knowledge holders and helps respond to the “spirit and content of the Canadian Constitution, existing Treaties and rights and course decisions” [41, p. 179]. Ever bolder potential policy changes which emerged from this research centred on the DFO’s devolution of asserted authority over herring fisheries to local coastal Indigenous nations. For the DFO to hand greater power over herring fisheries decision-making back to coastal Indigenous nations through policy changes has the potential to solve a wide range of issues identified in this research. Examples of potential advances suggested by the data include: (1) avoiding ongoing litigation between DFO and First Nations; (2) allowing Indigenous nations to implement intertribal and inter-nations fishing protocol agreements; and (3) reducing the perceived need for Indigenous nations to circumvent DFO policies.

Changes to legislative and regulatory instruments have the potential to create a platform for innovation in marine policy as it relates to Indigenous peoples. However, the application of those policies through the *management* of fisheries is at least as important. Some of the issues related to DFO administration of fisheries in Indigenous territories stem from the DFO Minister’s discretionary decision making. For example, there are no statutes that decree quotas for the herring fishery, nor that define characteristics of herring fishing licences and their transferability [38]. Thus, within existing policy, there is also room for DFO to initiate a novel approach to the management of the Pacific herring fishery: one that reinvigorates the local leadership of Indigenous nations for decisions on whether to fish, when to fish, how much fish can be harvested, access, monitoring and habitat restoration. A change in approach such as this would then shift the onus back to Indigenous nations to (re-)establish effective governance of herring fisheries [9] based in their long-standing systems of governance that promoted sustainable fishing over generations [23]. The findings support the idea of an Indigenous-managed fishery as a way to address problems ranging from economic uncertainty and environmental concerns, to levelling the playing field and incorporating Indigenous knowledge systems (Table 3). As directed by Justice Garson, Canada must now “proceed on a different footing than has heretofore taken place” regarding Aboriginal constitutional rights to fish [38]. An Indigenous-directed herring

fishery has the potential to move tensions away from litigious attempts to solve problems toward more direct decision-making. There is an opportunity for Canada to amend laws, policies and management which together make room for the reinvigoration of Indigenous laws on fisheries governance. This would resolve at least some of the ongoing uncertainty and frustration experienced by coastal Indigenous nations [9].

Canada and coastal Indigenous nations are in a distinctive position to negotiate a new way forward on marine governance. As it stands, both Canada and many coastal Indigenous nations maintain their asserted authorities to the land and surrounding ocean waters. For example, in the Gwaii Haanas Agreement [42] between the Council of the Haida Nation and the Government of Canada, the two parties hold divergent views on the ownership of Haida Gwaii. The Haida assert ownership to the lands and waters of Haida Gwaii, while Canada views it as Crown land “subject to the sovereignty of her Majesty the Queen” [42]. Given these divergent title assertions and the advancing political pressures on fisheries such as herring, this research points to an important opportunity for Canada to make change and reset the global stage for modern-day marine policy and management within Indigenous homelands. With global reinvigoration of Indigenous nations and increasing attention on access to marine resources, the timing is ripe for policy which reinvigorates Indigenous control of fisheries governance.

6. Ways forward

Recent events in Canada suggest the early development of the changes in herring management suggested in this paper. For instance, in November 2015, Canada appointed an Indigenous Minister, Hunter Tootoo, to the DFO. Minister Tootoo stated shortly thereafter that the “Government of Canada is absolutely committed to a renewed nation to nation relationship with Canada’s Indigenous peoples” [43]. Such relationships should include fisheries policy and management. Further developments toward the beginnings of a nation to nation relationship occurred in January 2016 as the DFO and Heiltsuk Nations jointly developed a management plan for the 2016 herring fishery [44]. The plan includes a lower herring harvest rate, the closure of fishing in areas designated by the Heiltsuk, and the meaningful incorporation of Heiltsuk knowledge into herring management [45]. This stride highlights the importance of the findings of this paper, that marine resources must be managed with a new approach that recognizes Indigenous legal and inherent rights and responsibilities. Despite these incremental successes, oppositional relations with other coastal nations persist: in a 2016 Band Council resolution, the Sliammon First Nation has opposed the commercial herring fishery, resolving if the DFO proceeds with it, the Tla’amin Nation “will take steps to restrain the mismanagement of the fishery” [46]. This essay argues that marine policy in Canada would benefit from the observation of the findings which emerged from this study: Canada should design laws and policies which not only accommodate, but that prioritize Indigenous leadership on the governance of herring fisheries. “Power-sharing”, such as the Heiltsuk 2016 joint management of herring and the Gwaii Haanas Agreement [42], is what Canada needs to further cultivate in order to demonstrate the moral and legal leadership to “play a leadership role in setting the world standard with respect to the universal recognition of [Indigenous] rights” [47, p. 324]. The recommended changes presented in this research have the potential to align Canada with the multiple court directions to manage Aboriginal fishing rights differently. Beyond that basic compliance, the recommendations present an opportunity for Canada position itself at the forefront of Indigenous marine resources management.

Axworthy and Kinew [1] state that Canada is “entering uncharted territory” in terms of the country's relationship with Indigenous peoples. As with the prospect for change within the herring fishery revealed by this research, Axworthy and Kinew argue that in the bigger picture, seizing the “Indigenous opportunity” presented by converging circumstances could position Canada to advance broader social, cultural, environmental and economic objectives. Change to marine policy and management of the Pacific herring fishery would be a meaningful step in the direction of such leadership.

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