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Balancing privacy with access to information for commercial fisheries data: A critical review of Fisheries and Oceans Canada's "rule of five" policy

Nicole Tomasic[a*]

[a]Ecojustice, 520 – 1801 Hollis St, Halifax, NS B3J 3N4, Canada

*nicole.tomasic@dal.ca

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Abstract

Although Canada's oceans are a public resource, commercial fisheries data are routinely withheld from researchers and the general public by Fisheries and Oceans Canada (DFO) due to privacy obligations. However, data can be released if considered sufficiently de-personalized through an internal guideline called the "rule of five," under which data sources are aggregated to a threshold of five to allow for data publication or disclosure. This article provides an overview of the "rule of five," summarizes key legislative provisions that have bearing on the "rule" and potential for its reform, and discusses the findings from two tools used to collect information on the "rule" and its use in Canada: (1) an Access to Information and Privacy request and (2) an anonymous survey conducted to evaluate the impacts of the "rule" on various stakeholders. The "rule of five" is not mandatory but rather represents a conservative approach to access to information that can be detrimental to independent researchers and the public interest in transparent fisheries data. The article concludes with recommendations to further a rebalancing of privacy and access to information, including emphasizing existing legislative exemptions that could allow for data disclosure when the "rule of five" is not met.

Key words: rule of five, Fisheries and Oceans Canada (DFO), commercial fisheries data, landings data, data transparency, access to information

Introduction

Canada, bordered by the Pacific, Arctic, and Atlantic oceans, features the largest area of coastal waters in the world (Hutchings 2016). Although the preamble to the federal *Oceans Act* acknowledges these three oceans as "the common heritage of all Canadians," Fisheries and Oceans Canada (DFO or the Department) has exclusive responsibility for fisheries management and control over related data. As stakeholders in the country's oceans and marine resources, Canadians have an interest in transparent, accessible fisheries data to enable independent researchers to evaluate DFO's management decisions and improve our understanding of the oceans and how we relate to and impact them. However, the public interest in fisheries data can be outweighed by privacy protections for private, commercial interests that render the data inaccessible outside of DFO through the "rule of five."

As a government institution, DFO has legal obligations under Canada's *Privacy Act* and *Access to Information Act*, and it uses the "rule of five" to meet them. In short, under the "rule of five," data sought by third parties or under consideration for public release, such as fisheries landings, are

aggregated to a minimum of five data sources—fishing licenses or license holders, vessels, or buyers. Aggregation is intended to reduce the likelihood that anonymized information could be linked to an identifiable fisher or legal entity, such as a corporation. If the data cannot be aggregated to capture five parties, it generally will not be released unless the parties the data pertain to consent to its release. Alternatively, DFO can expand the geographic area or timeframe to capture five parties within a lower spatial or temporal resolution.

The discussion proceeds by providing an overview of the "rule of five," followed by a summary of the provisions of the federal *Privacy Act* and *Access to Information Act* that have bearing on the "rule" and potential for its reform. Two tools were used to collect information on the "rule of five" and its use in Canada: (1) a formal Access to Information and Privacy (ATIP) request on the "rule of five" and (2) an anonymous survey to evaluate whether the "rule of five" affects researchers seeking commercial fisheries data. Through presentation on the origin of the "rule of five" and results from the ATIP request and survey, the review is intended to contribute to an understanding of the "rule" and its impacts on various stakeholders as well as identify critiques and proposals for reform. The "rule of five" survey responses are discussed to foster contemplation on the detrimental impacts of the "rule"; the lack of clarity surrounding it; its inconsistent application; and attempts to balance competing interests through the "rule."

Discussion

Overview of DFO's "rule of five"

DFO's internal "Guidelines for the Informal Release of Information" explain the "rule of five" as follows: "[it] means there should be at least five people or personally identifying variables aggregated in the data set," because "[w]ith data sets smaller than five, the likelihood of disclosing information about identifiable individuals increases" (p. 4). Relevant identifying variables include fishing licenses or license holders, vessels, and buyers (Koropatnick and Coffen-Smout 2020, p. 12; ATIP Response Package). The "rule of five" protects data pertaining to landings and vessel-specific geographical information, such as vessel monitoring system data, that relates to either individual fishers or commercial entities. The data are protected as personal information in the case of individual fishers or partnerships, and sensitive, proprietary information for commercial entities such as corporations (Koropatnick and Coffen-Smout 2020, p. 12; ATIP Response Package). When the "rule of five" is met, otherwise protected data can be released in public DFO materials or to third parties because it is considered sufficiently de-personalized to prevent re-identification and thereby uphold DFO's legal obligations under the *Privacy Act* and *Access to Information Act*.

Despite its name, the "rule of five" is not a binding rule within DFO but rather a discretionary guideline recommended by DFO's ATIP Secretariat and contained within the Department's internal "Guidelines for the Informal Release of Information." Although the "rule of five" ostensibly does not limit scientists within DFO, its use can be impactful and detrimental to external researchers who wish to utilize Canadian fisheries data. The "rule of five" will increasingly impact researchers if the fishing industry, including buyers, becomes more consolidated.

Although the "rule of five" is recommended by DFO's ATIP Secretariat as best practice, it is not required by either the *Privacy Act* or *Access to Information Act* or the federal government. In the words of the Acting Deputy Director of DFO's Policy and Privacy Division within the ATIP Secretariat, writing to the author in May 2020 (email on file with author):

> . . . there is no official Government of Canada policy on the rule of 5 or data aggregation that I am aware of, DFO's use of aggregation and the rule of 5 have resulted from the department's

> responsibility to safeguard information under the *Privacy Act*, the *Access to Information Act*, and associated Treasury Board policy instruments.

Given that the "rule of five" is not mandatory, DFO's "Guidelines for the Informal Release of Information" note that "[o]ther standards may be used, provided a risk assessment has been conducted to verify that information about third parties is not inappropriately disclosed" (p. 5). Other standards include DFO's use of a similar but less stringent "rule of three" instead of "five," which increases the likelihood that fisheries data will be publicly released as the threshold of fishers or buyers in a given area is lower while still sufficiently protecting privacy.

Relevant *Privacy Act* and *Access to Information Act* provisions

The *Privacy Act* and the *Access to Information Act* are separate but intertwined pieces of federal legislation that bear on DFO's "rule of five" policy. These federal statutes were reviewed to contextualize the rationale for the "rule of five" and identify legislative exemptions that can allow for the disclosure of otherwise protected data. Whereas the *Privacy Act* aims at protecting personal information that is held by government institutions and is not publicly available (ss. 2, 69(2)), the *Access to Information Act* aims "to enhance the accountability and transparency of federal institutions in order to promote an open and democratic society and to enable public debate on the conduct of those institutions" (s 2(1)). The *Access to Information Act* interacts with the *Privacy Act* in that the latter outlines the rights of individuals whose information is sought by third parties under the former.

Generally, access to information requests by third parties will be denied when a record contains personal information (*Access to Information Act*, s. 19(1)). Personal information does not include, however, "information relating to any discretionary benefit of a financial nature, including the granting of a license or permit, conferred on an individual, including the name of the individual and the exact nature of the benefit" (*Privacy Act*, s. 3(l) at "personal information"). In other words, some information related to licenses is not protected and can be released. Data elements related to commercial fishing licenses that can be released to external parties include license number; name of license holder; allowable fishing area(s), species, and original, but not remaining, quota; license conditions; vessel name; and total allowable catch (Fisheries and Oceans Canada: ATIP Secretariat 2015, Appendix B). However, other fisheries data are withheld unless the relevant disclosure "rule" is met. These include data pertaining to landings, whether by volume or value, which are withheld as they are not considered related to a financial, discretionary benefit (Fisheries and Oceans Canada: ATIP Secretariat 2015, Appendix B). Vessel-specific geographical information "related to fishing routes and strategy" is similarly withheld (Fisheries and Oceans Canada: ATIP Secretariat 2015, Appendix B).

In addition to withholding data to protect personal information, disclosure can be refused under the *Access to Information Act* for several reasons applicable to commercial fishing. These include when a record contains a third party's trade secrets, such as fishing grounds; "financial, commercial, scientific or technical information that is confidential information supplied to a government institution" that "is treated consistently in a confidential manner by the third party"; "information the disclosure of which could reasonably be expected to result in material financial loss or gain to, or could reasonably be expected to prejudice the competitive position of, a third party"; or information that "could reasonably be expected to interfere with contractual or other negotiations of a third party" (*Access to Information Act*, ss. 20(1)(a)–(c)). It is clear that DFO has various clauses in the *Access to Information Act* under which requests for information may be refused unless its "rule of five" is met.

However, there are several exemptions that can allow for the public release of otherwise protected commercial fisheries data. It has been mentioned that personal information can be released with the consent of the individual to whom it pertains, as outlined in the *Privacy Act* (ss. 7, 8(1)), although it

is not clear whether or how often DFO seeks fishers' consent before refusing to release data when the "rule of five" is not met, or how likely fishers might be to consent to data disclosure. Furthermore, DFO's internal "Guidelines for the Informal Release of Information," used by DFO staff faced with data requests, do not mention the option to seek fishers' consent for data disclosure.

In addition, both the *Privacy Act* and the *Access to Information Act* contain a public interest exemption that can allow for the disclosure of otherwise protected data (*Privacy Act*, s. 8(2)(m)(i); *Access to Information Act*, s. 20(6)(a)). While the three oceans are the common heritage of Canadians, the Supreme Court of Canada (SCC) has further acknowledged in *Ward v Canada*, among other cases, that fisheries are a public resource (para. 2). Accordingly, it is arguable that Canadians have a strong public interest in transparency regarding what is being taken out of the oceans, from where, and to what extent.

While DFO's mandate includes "protecting Canada's 3 oceans and waterways, [and] ensuring they remain healthy for future generations," the Department is also tasked with "providing economic opportunities to Canadians and coastal communities" (Government of Canada: Fisheries and Oceans Canada 2021). The SCC in *Ward v Canada* acknowledged that one aspect of the public fisheries resource is "to yield economic benefits to its participants and more generally to all Canadians" (para. 2). Senior scientists from the Royal Society of Canada have acknowledged that DFO has conflicting mandates in that it is charged with both the conservation and the exploitation of fish stocks, and the Department has the discretion to craft a balance, or imbalance, between the two (Weber 2019; Hutchings et al 2019). In cases where the "rule of five" threshold is not met, DFO has sole access to commercial fisheries data, which does not leave room for public oversight of fisheries management despite a clear public interest in transparency. If the public wants to monitor DFO's marine stewardship to ensure that its conservation mandate is appropriately balanced with that of the commercialization of fish stocks, transparency is imperative.

The public interest exemptions for the release of otherwise protected data exist but may not be practically useful in the fisheries context as the threshold needed for the public interest to trump privacy and allow for data disclosure is quite high. The language in the *Privacy Act* requires that "the public interest in disclosure clearly outweighs any invasion of privacy that could result from disclosure" (s. 8(2)(m)(i)), while the *Access to Information Act* similarly requires that the public interest in disclosure clearly outweighs any prejudice to commercial interests (s. 20(6)(b)).

A perhaps more promising exemption for the disclosure of otherwise protected data is the *Privacy Act* exemption through which disclosure may be permitted "to any person or body for research or statistical purposes" (s. 8(2)(j)). However, this exemption can only be utilized if the government agents considering disclosure are satisfied of two things. First, that "the purpose for which the information is disclosed cannot reasonably be accomplished unless the information is provided in a form that would identify the individual to whom it relates"; and second, that the party seeking the information provides a written guarantee "that no subsequent disclosure of the information will be made in a form that could reasonably be expected to identify the individual to whom it relates" (*Privacy Act*, ss. 8(2)(j)(i)–(ii)).

The research or statistical purpose exemption relies on DFO staff discretion but has the potential to counter the research impediments posed by the "rule of five." The exemption could permit researchers to use protected data and publish their findings in a manner that does not identify individuals, while withholding the raw data. Survey responses did not indicate that this exemption for research or statistical purposes is used or divulged by DFO. In fact, DFO's internal "Guidelines for the Informal Release of Information" do not mention this exemption.

ATIP request on the "rule of five"

A preliminary search for details about the "rule of five" was performed in April 2020 through a Google search for ("rule of five" AND "DFO") as well as ("rule of five" AND "Fisheries and Oceans Canada"). There were no relevant results containing a clear articulation of the "rule" besides one DFO technical paper on spatial data products that offered a brief explanation (Koropatnick and Coffen-Smout 2020). It is worth noting that the same search terms similarly did not yield information on the "rule of five" from DFO sources in a May 2022 Google search.

Given the lack of publicly available information regarding the "rule," a formal ATIP request regarding the "rule of five" was submitted to DFO under the *Access to Information Act* in April 2020. Although the Department's internal "Guidelines for the Informal Release of Information" were received in May 2020, the final ATIP response package was not received until March 2022. The ATIP response package, aside from the "Guidelines for the Informal Release of Information," provided little insight into the "rule of five." However, the ATIP response package materials evidence confusion surrounding the "rule of five" among staff within DFO. For example, the ATIP response package contains internal DFO emails in which staff ask for documentation that the "rule of five" is a requirement and are informed that it is not an official rule or policy but rather "best practice," "a guiding principle," "a general rule," a non-mandatory "benchmark," or a "just a convention." The ATIP response package also contains internal DFO emails in which staff seek clarification regarding whether the "rule of three" or "rule of five" should be used.

One noteworthy finding within the ATIP response package is the history of DFO's use of the "rule of three," which governed the Department's approach to the release of fisheries data previously. Since 2013, however, the Department has favored the "rule of five" because of consultations with Statistics Canada and the Privacy Commissioner—the details of which were not discussed in the ATIP response package—as well as concerns over increased computing power and the potential for greater data matching and statistical re-identification capability. It is not clear whether the concerns are warranted, but the ATIP response package materials note that "[i]n developing this *non-mandatory* guidance, we [DFO] felt it best to err on the side of caution" (emphasis added). Regardless, DFO's current "Guidelines for the Informal Release of Information" state that for landings specifically, the "rule of three" "may be acceptable provided total landings sufficiently obscure individual landings to balance privacy, confidentiality and sustainability reporting requirements" (Appendix B).

Despite general departmental preference for the "rule of five," the "rule of three" persists in some DFO regions. In ATIP response package materials dated from 2014, DFO summarized the different approaches to the release of data in the Quebec, Gulf, Newfoundland, Maritimes, Central, Arctic, and Pacific regions.[1] Whereas the Quebec, Gulf, and Pacific regions applied the "rule of three," the Maritimes region released all information if a form were signed by both the requester and the license holder outlining a period of permitted information sharing. The Newfoundland region applied the strict "rule of five," and the Central and Arctic regions, in which all fisheries have less than five license holders, assessed all data requests on a case-by-case basis. While current practice in different DFO regions is not clear, the more recent survey results discussed below suggest that the "rule" or approach applied in response to data requests is still quite variable between DFO regions.

"Rule of five" survey

In addition to individual research and analysis of the results of the ATIP response package, an anonymous, qualitative survey was conducted over 2 weeks in June 2020 (Dalhousie University Research

[1]Note that the ATIP response package materials do not delineate the different regions discussed here.

Ethics Board File # 2020-5179). The survey was distributed by email to various researchers, Canadian academic departments, and non-governmental organizations in the fields of biology, conservation, and marine affairs and management, who were encouraged to further share it to increase participation. The survey asked for responses to two simple questions:

> Q1: Please share any examples of how Fisheries and Oceans Canada (DFO)'s "rule of five" policy has impacted your work.
>
> Q2: Do you have any other feedback on DFO's "rule of five"?

Respondents were able to answer either or both questions.

Although the "rule of five" survey was conducted during the first summer of the COVID-19 pandemic when many individuals and organizations were in flux, it garnered responses from twenty-six respondents (on file with author). The following discussion contains information from twenty-four out of the total twenty-six respondents; two respondents did not offer substantive comments on the "rule of five." Of the twenty-four respondents included in the following discussion, four provided a response only to Q1, whereas the remaining twenty respondents answered both Q1 and Q2. The anonymous survey was self-selective in nature. Given this limitation, it is not possible to analyze the makeup of respondents and the responses may lack certain perspectives or the voices of some "rule of five" stakeholders.

The "rule of five" survey responses discussed below are grouped into general themes that arose throughout the responses, which provided insights into and critiques of the "rule of five" as well as a few recommendations for its reform. The discussion as well as the conclusion and recommendations feature the respondents' words as much as possible; all quotes are from the anonymous survey data. Respondents' experiences are anecdotal in nature.

Detrimental impacts of the "rule of five"

One survey respondent considered the "rule of five" to be "one of the largest obstacles to marine science in recent times" due to the way in which it "impacts transparency and accountability." This sentiment was echoed throughout the survey responses. One respondent linked this notion to their belief that fish stocks comprise "a public good, belonging to Canadians," and as such "[f]ishing is hence a privilege and making those data confidential impacts … transparency of fishing activities and hence Canadian public resources." Relatedly, another respondent stressed that "[a]n industry exploiting a public commons such as fish should be required to be fully transparent and observable."

Half of respondents expressed concerns that many geographic areas do not meet the "rule of five" threshold, resulting in problematic gaps in commercial fisheries data that "significantly hindered" research efforts and resulted in "incomplete and spotty" knowledge. This trend could increase "[a]s the fishing industry becomes more and more consolidated, with fewer vessels and bigger boats." One respondent highlighted that one company, Clearwater Seafoods, essentially held a monopoly on the offshore lobster fishery at the time of the survey, which was framed as "a serious conce[r]n," while another noted that spatial fishing data on cod by large vessels in the 3Ps Northwest Atlantic Fisheries Organization area, south of the island of Newfoundland, are virtually inaccessible.

In instances where DFO meets the "rule of five" by increasing the geographic scale, spatial data can be rendered "of little value" or even "of no use" depending on the research aim. This can occur, for example, in a fishing area monopolized by one or a few license holders or buyers, in which case data could only be released by expanding the area until at least five data sources were captured. This can render the data unsuitable for third parties' needs, for example, in the case of a researcher who seeks to study

a specific location, utilize data from a specific time period, or conduct fine-scale data analyses. One respondent noted that this potential is relevant for examining "[h]abitat impacts of fishing gear" which "occur at small spatial scales, often in areas where only a single vessel fishes." Another respondent, by contrast, noted that their work examining "broad-scale trends" has not been affected by the "rule."

Whether the "rule of five" is limiting by negating data availability or diluting its utility for some researchers, one respondent expressed their sentiment that "it is wrong to be making decisions in the absence of the best available data," which can facilitate "decisions that maximally protect ecological features while minimizing the economic impacts and access to user groups," such as those pertaining to marine protected area networks. Relatedly, one survey respondent noted that "applying the rule of 5 may have a potentially negative impact on licence holders" if it is detrimental to sound marine policy decisions. It should be noted however that the "rule of five" ostensibly does not limit scientists working internally within DFO but rather limits the disclosure of data held by DFO to external parties or through publishing information publicly.

Other respondents cited similar concerns with respect to environmental assessments and strategic environmental assessments as well as bycatch, which one respondent believed to be "understudied" and "critical to truly sustainable fisheries." Although survey responses typically concerned data for scientific use, some highlighted the potential for DFO to overlook socio-economic, governance, and policy considerations in its management and application of commercial fisheries data, without the oversight that could be provided by its publication in cases where the "rule of five" threshold is not met.

Lack of clarity on the "rule of five"

The survey respondents expressed concerns over the impacts of the "rule of five" but also concerns over the "rule" itself in that there is not "clear guidance on when, how and why the rule was developed and applied." One respondent, who voluntarily self-identified as a DFO employee, expressed that "[t]he rule of 5 is not clearly defined and leaves decisions/interpretation about how to apply it to technical staff" and suggested that "[i]t should be clearly defined nationally, one standard for all." This respondent also questioned the sensibility of strictly applying the "rule of three" or "rule of five" policies to data sets that span multiple years.

Several respondents noted that it is unclear why the "rule of three" is at times applied in lieu of the "rule of five," nor why or when the historically favored threshold of "three" appeared to have been abandoned by DFO in favor of the current default of "five," at least in Atlantic Canada. While the research undertaken for this article revealed that DFO officially transitioned from a "rule of three" to a "rule of five" around 2013, it is unclear why researchers continue to face different iterations of the "rule" across DFO regions, a trend which is discussed further below.

A respondent who engaged with DFO in an external capacity expressed that "the Rule of Five is often invoked by managers to avoid doing research in certain areas or to avoid even having the conversation" and "is almost a chant at this point." Another respondent expressed a similar concern that "[w]ithout clear instruction on when it is necessary and what data requires protection, data restrictions are commonly applied as a default without proper evaluation," resulting in "DFO employees wanting to err on the side of caution" to the detriment of access to information.

Respondents also noted that it is unclear whether the "rule of five" applies to buyers, which appeared to be an issue in NL as well as in BC where it was considered "difficult to analyze the oligopsonistic role of major fish processors"; an oligopsony is a market in which there are relatively few buyers, in

this case of fish, compared to sellers, which can create problematic market power for buyers as sellers have few options for their products. DFO's internal "Guidelines for the Informal Release of Information" provide that the names of seafood buyers cannot be released "when attributable to an individual licence holder" (Appendix B).

One respondent shared that they "have repeatedly asked for someone to provide [them] with a document that actually articulates this rule and no one ever has." Similarly, the research for this report began with a fruitless search for a clear articulation of the "rule of five" before it appeared necessary to submit a formal ATIP request. It is clear that the "rule," typically cited by DFO as though it were a binding policy, does not exist in any primary document but rather is an internal DFO guideline referenced in the Department's "Guidelines for the Informal Release of Information."

Inconsistent application of the "rule of five"

It is not only problematic that researchers and other data seekers lack a clear articulation of the "rule of five," but also that the "rule" and its variations are not applied consistently across DFO regions, despite the fact that the federal Department spans coast to coast to coast. One respondent's request for DFO data across three regions garnered uneven results. DFO's QC regional office appeared to use the "rule of three" and provided all requested data, whereas the same data request resulted in access to 80% of the requested records from DFO's Maritimes office, which cited a "rule of 3 or 4." This same data request yielded only 50% of the data from DFO's NL office, which cited "a strict 'rule of five.'" Another respondent from BC had only heard of or encountered the "rule of three" not "five." Relatedly, another respondent had encountered not only the "rule of three" and "rule of five" when requesting data from DFO but also the "rule of four" and found that the variable rule "changes from day to day" in interactions with the Department.

DFO's discretion in applying various iterations of the "rule" is a cause for concern because of the imbalance it creates for researchers and the confounding uncertainty surrounding its use both within and without the Department. As one respondent expressed succinctly, "DFO has been given the freedom to adapt the rule to whatever degree of restriction they see fit, resulting in high variability in data access between regions." Additionally, it has been noted above that the ATIP response package materials evidence confusion surrounding the "rule of five" among staff within DFO.

One respondent cited an understanding of "the overarching rationale for why [the 'rule'] is in place" but found it "rather outdated" and expressed skepticism over "whether fishermen still care about it (or if they ever did) or if it stays in use purely for bureaucratic/legal reasons." Relatedly, another respondent's research was frustrated on several occasions when seeking DFO data pertaining exclusively to "discarded bycatch of no commercial value" with the explicit request "for any personal information to be omitted," including license holder or company names, vessel identification, and landings. This respondent, whose bycatch data requests were unsuccessful, understandably "fear[s] that the original intent of the rule – to protect personal and/or financial information – has been grossly distorted over time."

Competing interests and the "rule of five"

Several respondents acknowledged the role of the "rule of five" for commercial fishers yet expressed that other interests should take priority. One respondent claimed to "respect business' effort [sic] to maintain a competitive advantage" yet concluded that "the paucity of data around total production in Canada severely impacts food security research." Another respondent recognized that "individual harvesters or companies have developed specialized knowledge that they do not want publicly shared" but expressed that the "rule of five should not hinder assessment and management" nonetheless. It is worth noting again that the "rule of five" ostensibly does not limit scientists within DFO, however.

By contrast, one respondent found that "offering a degree of anonymity to fishers encourages their participation in data collection as they would have less to fear about an abundance of fishers utilizing the data to locate prolific grounds that are not as widely known," which allows fishers "to operate and cooperate with researchers more freely." Interestingly, DFO's "Guidelines for the Informal Release of Information" recommend that staff contact their ATIP Secretariat when considering whether to release information that "[w]ould create a 'chilling effect' on the provision of candid advice" (p. 9). It is unclear why there are concerns over a chilling effect on commercial fishers' provision of data when doing so is generally a condition of a commercial license to fish and profit from a public resource.

Survey respondents provided thought-provoking feedback regarding balancing the various interests at play in the realm of commercial fisheries. One respondent wrote that they "question the justification for why a company's private interests trump the right to information for the public," particularly with Canadian food security at stake. As another respondent noted, "[w]e don't expect mining, forestry, agriculture, etc. to hide where and how they harvest, because they can't. Why do we let the fishing industry hide behind privacy rules[?]" (a comparison of privacy rules in mining, forestry, or agriculture as opposed to Canadian fisheries was beyond the scope of this paper). One respondent worried that the "rule of five" can favor industry "to the detriment of managers, scientists and the general public," "creating a black box for commercial fisheries to operate in as they see fit with very limited potential for oversight by anyone outside the system."

Respondents' recommendations

One respondent recommended that DFO "make public data a condition of licenses," or alternatively, release data after a 1 year time lag. Although researchers would certainly benefit from open access to commercial fisheries data, eventual access is certainly a more balanced compromise than no access. Another respondent suggested that the "purpose and end-use of fisheries data should be a consideration when determining if and when the rule of 5 should be applied." Similarly, another respondent recommended that the "data should be supplied entirely to valid/vetted researchers" who are subject to a non-disclosure agreement and DFO guidelines on the data's publication. This recommendation could come to fruition through the use of the exemption in the *Privacy Act* for research or statistical purpose use of otherwise protected data, although it has been noted that the relevant determinations would rely on the discretion of DFO staff.

Conclusion and recommendations

Although one survey respondent labeled DFO's "rule of five" policy "absurd" and another labeled it "questionable," DFO is subject to real legal obligations under both the *Privacy Act* and *Access to Information Act* that concern commercial fisheries data. However, the "rule of five" arguably exceeds these obligations with an abundance of caution to the detriment of transparency and research. While privacy concerns for commercial fishers and buyers are a consideration, it is arguable that the public interest for Canadians in transparency regarding the oceans warrants a rebalancing of privacy and access to information with respect to fisheries data. Whether commercial fishers retain the privacy protection that the "rule of five" provides, the detrimental impacts of the policy warrant its re-evaluation. One respondent summarized well why the barriers to researchers posed by the "rule of five" deserve consideration:

> Non-governmental fisheries researchers are vital to fisheries science and management: they can help fill-in research gaps that DFO cannot address with its current resources, address important questions that are potentially too politically sensitive for DFO to lead, improve transparency and accountability in fisheries, and perhaps most importantly can contribute

external resources, funding, and data to help support maintenance of healthy ecosystems in Canada. In its current state, the 'rule of 5' is harmful not only to independent researchers, but limits the ability of Canada to be at the forefront of sustainable fisheries management.

The following recommendations with respect to DFO's use of the "rule of five" are offered, in addition to those outlined by survey respondents, as possible means of rebalancing commercial fishers' privacy with transparency and access to information with respect to commercial fisheries data:

- DFO's approach to data requests should be consistent nationwide, and the approach should be formally posted and publicly available. If an anti-disclosure rule remains in place, this should entail use of the less restrictive "rule of three" rather than the "rule of five."The "rule of three" was used by DFO in the past, continues to be employed by some DFO regions, and could satisfy privacy obligations while increasing access to fisheries data.
- If the "rule of five" remains, in accordance with the "Guidelines on the Informal Release of Information," DFO should ensure staff are aware that the "rule of three" may be used for landings data. This caveat is located in a footnote in an Appendix in the "Guidelines," rather than alongside the explanation of the "rule of five," which reduces the likelihood that DFO staff faced with data requests will be aware of the ability to employ a less restrictive "rule" for landings.
- DFO should update the "Guidelines on the Informal Release of Information" to ensure staff are aware that they can first seek fishers' or buyers' consent before refusing to disclose data under the "rule of five." The "Guidelines" do not currently explain this potential avenue for data disclosure. Alternatively, DFO could consider particularizing its fisheries data collection approach to encourage fishers and buyers to categorize data submitted to DFO as private or non-private.
- DFO should update the "Guidelines on the Informal Release of Information" to ensure staff are aware of the *Privacy Act* exemption for research or statistical purposes and its privacy safeguards. The "Guidelines" do not currently mention this exemption for data disclosure.
- DFO should clarify whether data on bycatch that are neither retained nor landed can justifiably be subjected to the "rule of five" and update the "Guidelines on the Informal Release of Information" accordingly.

These recommendations should be considered within DFO as well as by external researchers, who may be able to advocate for data disclosure despite the "rule of five" through awareness of relevant legislative exemptions and the potential for the "rule of three" to be used for landings.

It should be remembered that the "rule of five" is neither fixed nor inflexible. The ATIP response package materials contain the following from DFO staff regarding privacy: "Privacy is heavily subjective and contextual. As a result, it is neither helpful nor effective to impose hard and fast rules about what can or cannot be shared; how to de-identify or aggregate information, etc." Despite this guidance, the "rule of five" appears to be invoked in response to data disclosure requests as though it were a binding, non-discretionary rule, which is not the case. Other approaches are possible, and should be considered, to enable independent researchers to utilize fisheries data and Canadians more broadly to actualize their stake in the public fisheries resource. Meanwhile, the recommendations discussed here should be considered to rebalance privacy and access to information with respect to commercial fisheries data.

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Author contributions

NT conceived and designed the study. NT performed the experiments/collected the data. NT analyzed and interpreted the data. NT contributed resources. NT drafted or revised the manuscript.

Competing interests

The author has declared that no competing interests exist.

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