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Cover: Ellen Chenoweth uses a telemetry antenna to track a humpback whale in Tenakee Inlet, Alaska. Photo credit: Julia Burrows.

Gutting Canada's Fisheries Act: No Fishery, No Fish Habitat Protection

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ABSTRACT: *Revisions to Canada's national fisheries legislation have eviscerated the country's ability and responsibility to protect most fish habitat. Changes to the Fisheries Act, passed by Parliament in 2012 and supported by new regulations in 2013, stipulate that habitat will now be protected only for fish that are considered part of a fishery or that support a fishery. The habitats of most freshwater fish species in Canada, including the majority of threatened and endangered fishes, will no longer be protected. Contrary to responsible management practices for the protection of native fishes, the act now inadvertently prioritizes habitat protection for some nonnative species—even hatchery-produced hybrids—as long as they are part of a fishery. Changes to the Fisheries Act were not supported by scientific advice (contrary to government policy) and are inconsistent with an ecosystem-based approach to management. Politically motivated dismantling of habitat protection provisions in the Fisheries Act erases 40 years of enlightened and responsible legislation and diminishes Canada's ability to fulfill its national and international obligations to protect, conserve, and sustainably use aquatic biodiversity.*

Desentrañando el Acta Pesquera Canadiense; No Pesca, No Destrucción de Hábitat

RESUMEN: *Las revisiones de la legislación pesquera de Canadá han desentrañado la habilidad y responsabilidad del país para proteger la mayor parte de los hábitats para peces. Los cambios al Acta Pesquera canadiense, aprobados por el parlamento en 2012 y apoyados por nuevas regulaciones establecidas en 2013, señalan que se protegerá el hábitat sólo de aquellas especies de peces que sean parte u objetivo de una pesquería. Los hábitats del grueso de las especies de peces de agua dulce de Canadá, incluyendo gran parte de los peces amenazados y en peligro, ya no estarán protegidos. En oposición a las prácticas de manejo responsable para la protección de especies nativas, inadvertidamente el acta prioriza la protección del hábitat de algunas especies de peces no nativas e incluso de especies híbridas—producidas en criaderos—en tanto éstas formen parte de una pesquería. Los cambios al acta pesquera no fueron apoyados por la información científica (contrario a la política de gobierno) y éstos son inconsistentes con el enfoque de manejo de pesquerías basado en el ecosistema. Motivado por intereses políticos, el retiro de la protección del hábitat estipulado en dicha Acta Pesquera, elimina 40 años de legislación responsable y merma la habilidad de Canadá de cumplimentar sus obligaciones nacionales e internacionales de proteger, conservar y utilizar de forma sostenible su biodiversidad acuática.*

INTRODUCTION

In the spring of 2012, the government of Canada announced profound changes to the habitat protection provisions of the federal Fisheries Act (FA), the statutory framework that describes most of the government's responsibilities for Canada's fisheries and fish habitat. Changes to the FA were passed by Parliament in June 2012. In April 2013, Fisheries and Oceans Canada (formerly Department of Fisheries and Oceans, and commonly identified as DFO) released new regulations pertaining to habitat protection in the revised act. The near elimination of fish habitat protection represents a clear signal that protection of habitat—the single greatest factor responsible for the decline and loss of commercial and noncommercial species on land and in water (Venter et al. 2006; Schipper et al. 2008)—no longer merits explicit protection under Canadian fisheries management law.

In 1976, the FA was strengthened considerably by the addition of text that provided strong and effective habitat protection for all fishes. Specifically, Section 35(1) stipulated that:

> *No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.*

This text was excised in 2012 and replaced with the following:

> *No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.*

Although scientists were later asked to develop supportive documents after the revisions had taken effect (e.g., Kenchington et al. 2012; Koops et al. 2012), there is no evidence to suggest that the revisions themselves were based on consultation with, or advice received from, DFO science directors, fisheries scientists, or habitat biologists. Among other limitations, this lack of scientific engagement is in direct contravention of DFO and government of Canada policies concerning the use of

science in decision making (e.g., Government of Canada 2002). Indeed, based on personal communications with DFO scientists and divisional managers, it appears that scientists were not consulted at all. By all accounts, DFO scientists and managers were surprised by the degree and types of changes in the revised act. According to one very highly placed science director (in a confidential communication to one of the authors), he was unaware of the March 2012 provisions in the legislation until he heard of the government's finalized revisions on a news broadcast.

ECOSYSTEM CONSEQUENCES OF STATUTORY RELAXATION OF HABITAT PROTECTION

It can be argued that there are positive elements to the FA revisions, such as (1) statutory recognition of the importance of recreational and Aboriginal fisheries, (2) provision for the establishment of regulations to control aquatic invasive species and prohibit their import, and (3) increased penalties and fines for contravention of the act. But, in our opinion, the negative consequences to Canada's aquatic ecosystems generated by the revisions to the act outweigh these benefits, none of which actually required changes to the existing habitat protection provisions of the FA.

First, it will no longer be illegal to harmfully alter or disrupt fish habitat. The revised act only renders it illegal to cause serious harm to fish that are part of a commercial, recreational, or Aboriginal fishery or to fish that support such a fishery. "Serious harm" is defined by the act as "the death of fish or any permanent alteration to, or destruction of, fish habitat" (Fisheries Act 2013). A legal opinion prepared for the Environmental Managers Association of British Columbia concluded that serious harm does not prohibit the disruption or temporary alteration of fish habitat, concluding that many situations prohibited under the previous legislation will no longer be covered by the revised act (Miller Thompson 2012). Another legal opinion concurs (Ecojustice 2013).

Second, the revisions weaken Canada's numerous obligations, under national law and international convention (e.g., Convention on Biological Diversity), to protect species at risk of extinction. It is well established in the scientific literature, and articulated by Canadian government policy and statute, that the protection of habitat constitutes the most effective means of ensuring that species do not become extinct. The federal Species at Risk Act (SARA 2002), for example, acknowledges that "the habitat of species at risk is key to their conservation."

We estimate that 80% or more of the 71 wildlife species (which includes species, populations, and groups of populations; SARA 2002) of freshwater fish at risk of extinction in Canada would not be considered "fish that are part of a commercial, recreational or aboriginal fishery, or … fish that support such a fishery" (e.g., Channel Darter, *Percina copelandi*; Coastrange Sculpin, *Cottus aleuticus*; Plains Minnow, *Hybognathus placitus*; Salish Sucker, *Catostomus* sp.; Figure 1). Unless the "critical habitat" of a threatened or endangered fishery-unrelated species has been identified in a recovery strategy or associated action plan (and thus protected under SARA), that habitat will no longer be protected by the FA. Indeed, the 2007 recovery strategy for Coastrange Sculpin states: "There are no habitat protection provisions specifically for [this] Sculpin, however, the species likely benefits from existing legislation (*Fisheries Act*) that protects fish habitat generally" (Fisheries and Oceans Canada 2007a). This legislative protection has now been eliminated.

There are additional limitations to relying upon SARA as the sole means of protecting the habitat of fishery-unrelated species. Recovery strategies and the prohibitions of SARA do not apply to all species at risk, such as those assessed as "special concern" (species that may become threatened or endangered). Species assessed as being threatened or endangered are not protected by SARA unless the federal government accepts the scientific assessment advice to list, a decision-making time frame that can last more than 5 years (Powles 2011; Waples et al. 2013). And although recovery strategies are required shortly after listing (1 year for endangered species, 2 years for threatened species), the legislated time frames are not often met (Mooers et al. 2010). Furthermore, the action plans required to implement the recovery strategies have no legal timelines for completion (VanderZwaag et al. 2011). This means, for example, that if critical habitat is not initially identified in the recovery strategy (McCune et al. 2013), there are no legal timelines thereafter for identifying or protecting such habitat under SARA (Mooers et al. 2010). Lastly, we note that removal of the protection of habitat for fishery-unrelated species also removes the habitat protection afforded indirectly to other threatened and endangered aquatic life that share Canada's waters with fish, such as amphibians, reptiles, mussels, crayfish, and numerous aquatic plants and insects.

Third, by selectively favoring some species over others, the revisions to the FA contravene the DFO's stated objective to adopt an ecosystem approach to the sustainable management of aquatic resources (Fisheries and Oceans Canada 2007b). An ecosystem approach requires that fisheries management decisions consider the impact of a fishery not only on the target species but also on nontarget species and the ecosystems of which these species are a part. Revisions to the FA mean that fisheries habitat protection decisions will focus not on the ecosystem but on fishery-related fishes only.

Fourth, a key reason for revising the act—a perceived need to expedite or "streamline" environmental reviews (Canada Gazette 2013)—has been shown to lack an empirical basis. There was a perception among some politicians that the act needed to be changed because it was deemed unduly obtrusive and prevented any number of activities from occurring. But analyses reported by Favaro et al. (2012) suggested otherwise. Between 2006 and 2011, only one proposal among thousands was denied by the DFO, and only 1.6% of 1,283 convictions under the FA between 2007 and 2011 pertained to the destruction of fish habitat (Favaro et al. 2012). As detailed by de Kerckhove et al. (2013), review times for projects under the previous FA actually

Figure 1. The Salish Sucker (*Catostomus* sp.) inhabits rivers of the lower Fraser Valley in southwestern British Columbia. It has been assessed as an endangered species. Permission to reproduce the photograph obtained from copyright holder Mike Pearson.

conform with the new mandated review times articulated by the 2012 revisions to Canadian environmental legislation. These scientific analyses run counter to the political discourse, which argues that environmental reviews are unduly lengthy and are bad for economic growth. In fact, review times in Canada were found to be faster, under the previous FA, than they were in the United States (de Kerckhove et al. 2013). The absence of a scientific basis for statutory change in this case is a telling example of how scientific advice can constructively assist decision makers before they revise legislation.

NEW REGULATIONS TO THE FISHERIES ACT

New regulations associated with the revised FA were released by the federal government in April 2013 (Canada Gazette 2013). The Government's Regulatory Impact Analysis Statement accompanying these regulations asserted that they will strengthen environmental protection (Canada Gazette 2013). We find that assertion difficult to reconcile with the substance of the new regulations.

When an individual or company applies for an application to undertake an activity that requires authorization by the Minister of Fisheries and Oceans under Section 35(2) of the revised FA, the primary—if not sole—responsibility for providing accurate information and data rests with the applicant, rather than with DFO habitat scientists and biologists. According to the new regulations (section 8), it appears that the requisite identification of "fish that are part of a commercial, recreational or Aboriginal fishery," or "fish that support such a fishery," at the location of the proposed work, will be the responsibility of the proponent/applicant to identify. Notwithstanding DFO scientific advice in this regard (Kenchington et al. 2012; Koops et al. 2012), one can ask whether (1) each proponent will have to apply the DFO's scientific standards in identifying fish that support a fishery and (2) who will determine the scientific validity and appropriateness of each proponent's assessment. Related questions include: Who is ultimately responsible for ascertaining whether serious harm is likely to occur? The proponent or DFO?

There does not appear to be a requirement for the DFO to undertake an on-site inspection by DFO scientific staff to verify information provided by an applicant. This change in responsibility explains the 33% reduction in DFO staff responsible for habitat protection reported by various Canadian media in 2012 (e.g., Langer 2012). This reduction in staff can only diminish the scientific integrity and scientific credibility of DFO's assessments of applications for the authorization of activities under 35(2)(b) of the FA that will result in the destruction of fish and fish habitat.

The regulations confirm that the revised FA will not protect any particular species of fish. Rather, protection will be provided only to "fish that are part of a commercial, recreational or Aboriginal fishery" or "fish that support such a fishery." This means, to take one of many examples, that Largemouth Bass (*Micropterus salmoides*) will be protected at a particular location if, *and only if*, those Largemouth Bass are considered to be part of a fishery *at that location*. Otherwise, Largemouth Bass will not be protected.

Somewhat perversely, changes to the act will result in habitat protection being afforded to nonnative fishes that have extended their range as a result of actions taken by fishery managers (species that have extended their range through human intervention are not considered wildlife species under SARA). Chain Pickerel (*Esox niger*) is not native to Nova Scotia but supports recreational fisheries in that province. The same is true for Rainbow Trout (*Oncorhynchus mykiss*) and Pacific Salmon (*Oncorhynchus* spp.) in the Great Lakes, Brook Trout (*Salvelinus fontinalis*) in western Canada, and Brown Trout (*Salmo trutta*) across Canada. Inadvertently, the FA can now be used to protect the habitat of an interspecific hybrid. The splake, produced primarily in hatcheries by breeding Brook Trout with Lake Trout (*Salvelinus namaycush*; limited natural reproduction has been documented), supports many recreational fisheries in Ontario (Kerr 2000).

We are hard-pressed to think of other national legislation, in Canada or elsewhere, that explicitly or implicitly affords enhanced protection for nonnative species, indeed even artificial species, than it does for native species.

NO HUMANS → NO FISHERY; NO FISHERY → NO PROTECTION; NO PROTECTION → NO STEWARDSHIP

The stipulation that fish be part of, or support, a fishery will have particularly egregious consequences for species that inhabit pristine or near-pristine habitat in Canada's vast wilderness. Under the revised FA, fish that inhabit lakes, rivers, and streams that are not regularly visited by humans do not warrant protection (Figure 2). Humans are necessary to render a fish part of a fishery. No humans, no fishery, and no fish habitat protection. This can only be interpreted as meaning that the vast majority of Canada's freshwater fishes will be deemed to not warrant habitat protection under the revised FA, even if those species are considered part of a fishery elsewhere in their range.

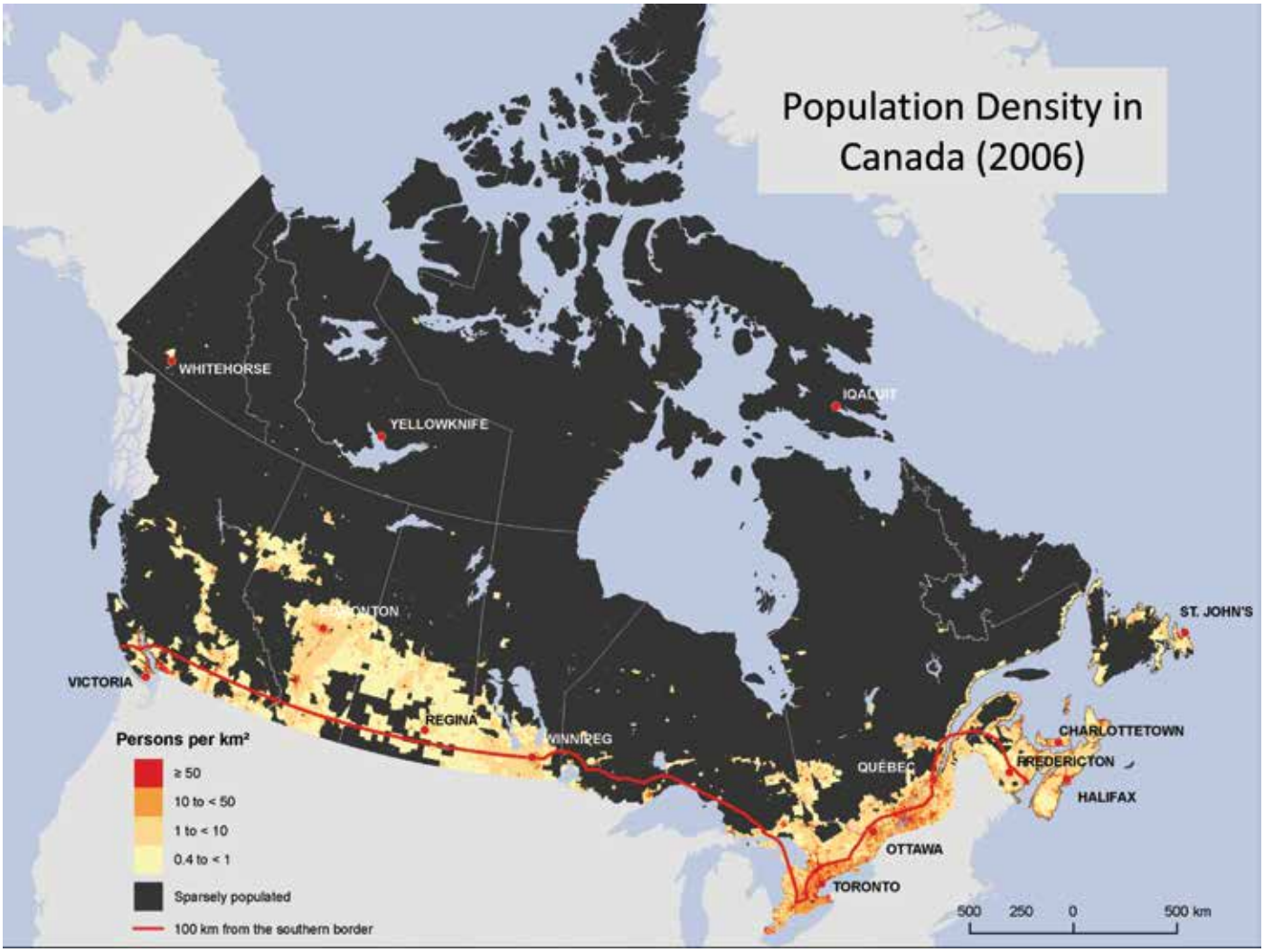

Figure 2. Population density (persons per square kilometer) of Canada in 2006. Black regions identify "sparsely populated" areas where the probability of the existence of a fishery can be expected to be low. Data source: Martel and Caron Malenfant (2007).

The multitude of aquatic systems that do not support a fishery, coupled with the extensive distributions of many Canadian fishes, will mean that habitat protection will not be provided for most fish species in most places.

By applying the "no humans, no fishery" criterion, the Minister of Fisheries and Oceans will have an easy time expediting applications for fish habitat destruction resulting from all manner of development. The lack of foresight inherent in the "no humans, no fishery" stipulation is also manifest by the likelihood that aquatic systems that do not support a fishery today (e.g., much of Arctic and northern Canada) might well do so in the future. But investment in future fisheries requires investment in appropriate habitat protection today. How is a fishery to develop down the road if the habitat is already gone?

Changes to the FA will further impair Canada's heavily criticized stewardship of aquatic biodiversity. A Royal Society of Canada expert panel report (Hutchings et al. 2012a, 2012b) concluded that Canada has fallen well short of the progress made by most developed nations in fulfilling national and international commitments to sustain marine biodiversity and that "many targets and obligations to conserve and to sustainably use biodiversity have not been met." In February 2013, the Office of the Auditor General of Canada, which is responsible for auditing federal government operations and performance, agreed. The Commissioner on the Environment and Sustainable Development observed that "the federal government has made limited progress on its commitments, both international and domestic, to protect Canada's marine biodiversity" (OAG 2013). Dismantling of the habitat protection provisions of the Fisheries Act, in addition to the stripping down of other federal environmental legislation (de Kerckhove et al. 2013), contributes to the country's faltering efforts. Failure to list, yet continue to harvest, endangered fishes is another (Powles 2011).

In closing, it is our opinion that the 2012 revisions to the habitat protection provisions of Canada's Fisheries Act will have negative consequences for: (1) the persistence and viability of fish that are neither part of nor supportive of a fishery; (2) the protection of native aquatic species at risk; (3) Canada's ability to implement an ecosystem approach to sustainable management; (4) the DFO's ability to evaluate the scientific validity of applications for habitat alteration and destruction; and (5) Canada's commitments to fulfill national and international obligations to sustain and conserve biodiversity.

Being the second largest country in the world, Canada is responsible for 20% of the globe's fresh water, one third of its boreal forests and associated aquatic environment, and the world's longest coastline. However, this geographical wealth comes with a responsibility to be internationally respected stewards of this vast environment. Politically motivated abrogation of the country's national and international responsibilities to protect fish and fish habitat suggests to us that Canada might no longer be up to the task.

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REFERENCES

Canada Gazette. Application for authorization under paragraph 35(2)(b) of the Fisheries Act Regulations. 2013. Part 1. Canada Gazette 147(15):769–778. Available: http://www.gazette.gc.ca/rp-pr/p1/2013/2013-04-13/pdf/g1-14715.pdf. (July 2013).

Consolidation: Fisheries Act. R.S.C. (1985), c. F-14. 2013. Available: http://laws-lois.justice.gc.ca/PDF/F-14.pdf. (July 2013).

de Kerckhove, D. T., C. K. Minns, and B. J. Shuter. 2013. The length of environmental review in Canada under the Fisheries Act. Canadian Journal of Fisheries and Aquatic Sciences 70:517–521.

Ecojustice. 2013. Legal backgrounder: Fisheries Act. Available: http://www.ecojustice.ca/files/fisheries-act. (11 July 2013).

Favaro, B., J. D. Reynolds, and I. M. Côté. 2012. Canada's weakening aquatic protection. Science 337:154.

Fisheries Act. R.S.C. 1985. c. F-14. 2013. Available: http://www.dfo-mpo.gc.ca/habitat/changes-changements/index-eng.htm. (October 2013).

Fisheries and Oceans Canada. 2007a. A new ecosystem science framework in support of integrated management. Fisheries and Oceans Canada, Ottawa. Available: http://www.dfo-mpo.gc.ca/Science/Publications/ecosystem/pdf/ecosystem-eng.pdf. (July 2013).

———. 2007b. Recovery strategy for Cultus pygmy sculpin (Cottus sp.) in Canada. Species at Risk Act Recovery Strategy Series, Fisheries and Oceans Canada, Ottawa. Available: http://sararegistry.gc.ca/virtual_sara/files/plans/rs_Cultus_Pygmy_Sculpin_1007_e.pdf. (July 2013).

Government of Canada. 2002. A framework for science and technology advice: principles and guidelines for the effective use of science and techology advice in government decision making. Industry Canada, Ottawa. Available: http://publications.gc.ca/collections/Collection/C2-500-2000E.pdf. (July 2013).

Hutchings, J. A., I. M. Côté, J. J. Dodson, I. A. Fleming, S. Jennings, N. J. Mantua, R. M. Peterman, B. E. Riddell, A. J. Weaver, and D. L. VanderZwaag. 2012a. Is Canada fulfilling its obligations to sustain marine biodiversity? A summary review, conclusions, and recommendations. Environmental Reviews 20:353–361.

———. 2012b. Sustaining Canadian marine biodiversity: responding to the challenges posed by climate change, fisheries, and aquaculture. Expert panel report prepared for the Royal Society of Canada, Ottawa. Available: http://rsc-src.ca/en/expert-panels/rsc-reports/sustaining-canadas-marine-biodiversity. (July 2013).

Kenchington, E., D. E. Duplisea, J. M. R. Curtis, J. C. Rice, A. Bundy, M. Koen-Alonso, and S. E. Doka. 2012. Identification of species and habitats that support commercial, recreational or Aboriginal fisheries in Canada. Fisheries and Oceans Canada, Canadian Science Advisory Secretariat Research Document 2012/110, Ottawa.

Kerr, S. J. 2000. F1 splake: an annotated bibliography and literature review. Fish and Wildlife Branch, Ontario Ministry of Natural Resources, Peterborough, ON.

Koops, M. A., M. Koen-Alonso, K. E. Smokorowski, and J. C. Rice. 2012. A science-based interpretation and framework for considering the contribution of the relevant fish to the ongoing productivity of commercial, recreational or Aboriginal fisheries. Fisheries and Oceans Canada, Canadian Science Advisory Secretariat Research Document 2012/141, Ottawa.

Langer, O. 2012. DFO habitat staff cuts. Watershed Sentinel. Available: http://www.watershedsentinel.ca/content/otto-langer-dfo-habitat-staff-cuts. (October 2013).

Martel, L., and É. Caron Malenfant. 2007. Portrait of the Canadian population in 2006: findings. 2006 Census Analysis series. Statistics Canada Catalogue number 97-550-XIE. Ottawa, Canada.

McCune, J. L., W. L. Harrower, S. Avery-Gomm, J. M. Brogan, A.-M. Csergő, L. N. K. Davidson, A. Garani, L. R. Halpin, L. P. J. Lipsen, C. Lee, J. C. Nelson, L. R. Prugh, C. M. Stinson, C. K. Whitney, and J. Whitton. 2013. Threats to Canadian species at risk: an analysis of finalized recovery strategies. Biological Conservation 166:254–265.

Miller Thompson. 2012. Bill C-38 amendments to the Fisheries Act: a new environmental era in Canada? Available: http://www.millerthomson.com/assets/files/article_attachments2/DLK_2012-09_EMApaper.pdf. (July 2013).

Mooers, A. O., D. F. Doak, C. S. Findlay, D. M. Green, C. Grouios, L. L. Manne, A. Rashvand, M. A. Rudd, and J. Whitton. 2010. Science, policy, and species at risk in Canada. BioScience 60:843–849.

Office of the Auditor General (OAG). 2013. Canada has made limited progress in protecting marine biodiversity. Office of the Auditor General of Canada, Ottawa, Canada. Available: oag-bvg.gc.ca/internet/English/mr_20130205_e_37754.html. (October 2013).

Powles, H. P. 2011. Assessing risk of extinction of marine fishes in Canada—the COSEWIC experience. Fisheries 36:231–246.

Schipper, J., J. S. Chanson, F. Chiozza, N. A. Cox, M. Hoffmann, V. Katariya, J. Lamoreux, A. S. L. Rodrigues, S. N. Stuart, H. J. Temple, et al. 2008. The status of the world's land and marine mammals: diversity, threat, and knowledge. Science 322:225–230.

Species at Risk Act (SARA). S.C. (2002), c. 29. 2002. Government of Canada. Available: http://http://laws-lois.justice.gc.ca/eng/acts/S-15.3/. (October 2013).

VanderZwaag, D. L., C. M. Engler-Palma, and J. A. Hutchings. 2011. Canada's Species at Risk Act and Atlantic salmon: cascade of promises, trickles of protection, and sea of challenges. Journal of Environmental Law and Practice 22:267–307.

Venter, O., N. N. Brodeur, L. Nemiroff, B. Belland, I. J. Dolinsek, and J. W. A. Grant. 2006. Threats to endangered species in Canada. BioScience 56:903–910.

Waples, R. S., M. Nammack, J. F. Cochrane, and J. A. Hutchings. 2013. A tale of two acts: endangered species listing practices in Canada and the United States. *BioScience* 63:723–734.