



**SUBMISSION TO THE GOVERNMENT OF CANADA ON  
*ENVIRONMENTAL AND REGULATORY REVIEWS DISCUSSION PAPER*  
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As Wildlife Conservation Society (WCS) Canada scientists, we welcome this opportunity to provide our comments to the Government of Canada regarding its Environmental and Regulatory Reviews Discussion Paper (“Discussion Paper”), which outlines “changes” it is “considering for Canada’s environmental assessment and regulatory processes”. This input is based on our collective experience with provincial, northern and federal impact assessment (IA) processes in policy and practice. We are conservation biologists and wildlife ecologists who are actively engaged in conservation science and related policy in species at risk conservation and conservation planning, including IA, in northern Canada.

WCS Canada is a member of the Environmental Planning and Assessment Caucus of the Canadian Environmental Network (EPA Caucus); one of us (Ray) currently serves as a member of the Steering Committee. In this capacity, we have worked with many colleagues from environmental and academic institutions over the past year on a package of reforms that we have communicated with in various ways to the six federal ministries engaged in this regulatory review process since June 2016. These relate especially to governance of the new IA regime to enhance the likelihood that the Government of Canada meet its own commitments to restore public trust in how Canada’s natural resources are developed.

Our submission here, provided as comments on the Discussion Paper, focuses on the particular dimensions of IA with which we have the most expertise and experience. We start with the new impact assessment regime for which we provide general remarks followed by specific comments and recommendations on two of the seven themes described in the Discussion Paper: 1) Addressing Cumulative Effects; and 2) Science, Evidence and Indigenous Knowledge. We then consider the proposed changes to the *Fisheries Act*<sup>1</sup> (“Enhanced Protection for Canada’s Fish and Fish Habitat”).

## SUMMARY

**On Cumulative Effects**, the Discussion Paper signals a shift in federal IA to a more comprehensive approach that includes strategic- and/or regional-level assessments with adequately-scoped cumulative effects assessment. We support the need for a *legislated* framework enabling strategic or regional impact assessment in order to address cumulative effects more explicitly. These types of assessment are at the appropriate scale for cumulative effects assessment and both types of assessment can inform and complement project-level assessments as well as set a preferred direction and strategy for achieving sustainability in a region through the assessment of alternative scenarios, including under different climate change futures.

Our overall recommendation is that the best way to conduct meaningful cumulative effects analysis in project, strategic and regional assessments is to explicitly integrate decision-making across regional, strategic and project levels in a tiered approach. To ensure cumulative effects are considered more consistently and in a transparent manner in the new IA legislation, we recommend that the new law:

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<sup>1</sup> RSC 1985 c. F-14.

- 1) Establish legally-defined regional planning processes led by the federal government in conjunction with governments of provinces and indigenous groups to address potential cumulative effects, and provide authoritative guidance for particular undertakings, including project-level assessments;
- 2) Establish a legislated framework for strategic assessments of policies, plans or programs that could similarly address important cumulative effects, broad alternatives and other broad policy matters where the issues are not limited to a particular region (e.g., climate change, transboundary developments);
- 3) Require project proponents to explain how the project is consistent with existing strategic and regional undertakings that have been assessed under or in accordance with the Act;
- 4) Require the Assessment Agency to identify potentially important cumulative effects issues that cannot be addressed adequately by the proponent during the early planning phase (see below) and ensure the relevant government bodies address these matters in the assessment;
- 5) Define cumulative effects in the law to be more than just additive in nature, with appropriate consideration to the synergistic and interactive outcomes of multiple land-use practices, industrial developments, and climate change that aggregate over time and space;
- 6) Establish and apply CEA to a range of possible future development scenarios, going beyond the current practice in Canada of constraining evaluation of cumulative effects only to those from “certain” and “reasonably foreseeable” activities that tend to be narrowly scoped by the proponent.

We provide seven additional supporting recommendations to address the lack of detail in the Discussion Paper on how regional and/or and strategic impact assessments could be conducted.

**On Science, Evidence and Indigenous Knowledge**, having a strong evidentiary basis to impact assessment is fundamental to regaining public trust and establishing “new, fair” processes. The weakness of this aspect is a key underlying reason for lack of public trust in current practice and legislation in Canada. Moreover, there are many elements to a strong, evidentiary basis. Adequate attention needs to be paid to deliberately designing processes to help ensure adequate quality, rigorous testing (including monitoring), and transparent treatment of evidence/information that form the basis of any assessments.

We recommend the new law include all of the following essential elements:

- 1) Significantly strengthened agency with bolstered in-house expertise (including regional) and sufficient capacity to provide clear and consistent guidance, place greater evidence on cross-checks and validation of evidence, employ outside expertise where required, etc.;
- 2) Early planning phase that sets the stage for the assessment, establishes the leadership of the agency to provide guidance and expectations to proponents, develops a plan for information collection with associated responsibilities, and lays out the processes for assessment and review;
- 3) Enhanced public participation, including sufficient funding for interveners to engage qualified experts to contribute to the testing of evidence;

- 4) Regional and/or Strategic impact assessments to provide better guidance to project-level IA, particularly as they relate to cumulative effects;
- 5) Appointment of Joint Review Panels where required, with adequate scientific capacity and/or flexibility to contract services of qualified experts when required;
- 6) Transparency in decision-making and open data throughout; and
- 7) Comprehensive monitoring regime at appropriate scales with continuous oversight by the Assessment Authority.

We provide details on our recommendation to establish a Science Advisory Committee as one way to reinforce and expand on this area of a new IA law and to address governance. We then focus on two areas of the science/evidence theme, providing detail on 1) how to enforce rigour through peer reviews of science and evidence in the assessment phase and 2) moving toward an open science and data platform to access and integrate the available science.

**The Fisheries Act** is one of Canada's older environmental legislation. The Government of Canada's commitment to renewing the Fisheries Act is an unprecedented opportunity to create a legal and policy framework that will protect, restore, and sustain Canada's fisheries and the lakes, rivers, and oceans that they require for life for today and in the future. Overall, the Discussion Paper signals the intention by the Government of Canada to make legislative, regulatory, policy and program changes that could restore and strengthen habitat protection for all native fish and their habitats, ensure resources and capacity are in place to rebuild and support the administration, implementation and enforcement of a new Fisheries Act, and improve governance and decision-making by partnering with Indigenous peoples and create a collaborative committee to advise fish habitat protection, improve science and provide information on fish and fish habitat protection in more transparent way. These are important improvements from our perspective. The incorporation of principles of modern resource management and planning are also welcome and we recommend that these principles be binding in the application to all decisions made under the Act in order to meet the test of sustainability for Canada's freshwater and marine fish and their habitats.

## IMPACT ASSESSMENT AND REGULATORY PROCESSES

### GENERAL REMARKS

We recognize that the Discussion Paper is written at a high level, represents undecided or perhaps divergent positions among multiple ministries and departments on the themes that are presented, and remains fairly general. Accordingly, it does not commit the Government to any particular policy course nor does it provide any details on *how* Government will address the seven topic areas. We are encouraged by some signs of good intent, notably the emphases on transparency, attention to cumulative effects, attention to science/evidence, and co-decision-making with Indigenous governments. On balance, however, the discussion paper does invite significant concerns that the final legislation will fall short – perhaps significantly -- of the intentions set forth in June 2016 by the Government of Canada for this critical law reform.

WCS Canada scientists have been engaged in this lengthy consultation process since last year, beginning with our submission and testimonies to the Environmental Assessment Expert Panel, followed by meetings with and submissions to the staff of various Ministries involved in the process. Our input has consistently expressed particular concerns about the process and outcomes of federal environmental assessment in the context of planning for major new industrial developments, like metal mines and all-weather infrastructure, in remote, intact regions of the northern portion of provinces where the majority of the population are Indigenous Peoples with Aboriginal and/or treaty rights under the Canadian Constitution. We contend that ensuring that new development has lasting benefits, that outweigh adverse and cumulative social, economic, and environmental impacts, cannot be delivered adequately through project-level IA under the *Canadian Environmental Assessment Act, 2012*<sup>2</sup> (CEAA 2012) or under provincial acts with which we are familiar (e.g., Ontario's *Environmental Assessment Act*<sup>3</sup>). We have also placed specific focus on the role of scientific information and expertise in IA, in an effort to emphasize the part of the Ministers' mandate<sup>4</sup> to "ensure that decisions are based on science, facts, and evidence, and serve the public's interest".

Our review of the Discussion Paper pays close attention to the Government's commitment to protecting the environment. In our experience, under Canadian environmental assessment processes, the typical approach has been to address the "significant impacts" of individual projects, mitigating them until they are deemed "acceptable" (i.e., making impacts less bad), essentially as experiments with little monitoring and enforcement and learning from past efforts (*sensu* adaptive management). Both the practice and decision-making within IA consistently fail to consider the broader regional environmental change and the cumulative effects on social and ecological systems in which a project is embedded. They therefore undermine both environmental protection and social justice in the promotion of economic development. We also consider the specific information about the environment that is required for federal regulators to address environmental effects and support decision-making that protects sustainability.

The Discussion Paper considers seven broad topics in a new impact assessment regime: Addressing Cumulative Effects; Early Engagement and Planning; Transparency and Public Engagement; Science, Evidence, and Indigenous Knowledge; Impact Assessment; Partnering with Indigenous Peoples; Cooperation with Jurisdictions. Our comments focus primarily on two of these topics: 1) Addressing Cumulative Effects and 2) Science, Evidence and Indigenous Knowledge.

## ADDRESSING CUMULATIVE EFFECTS

The Discussion Paper notes that the Government is "considering a deliberate approach to the assessment and management of cumulative effects." The proposed approach being considered

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<sup>2</sup> *Canadian Environmental Assessment Act, 2012*, SC 2012

<sup>3</sup> <https://www.ontario.ca/laws/statute/90e18>

<sup>4</sup> <http://pm.gc.ca/eng/minister-environment-and-climate-change-mandate-letter>; <http://pm.gc.ca/eng/minister-natural-resources-mandate-letter>

includes: Developing and strengthening national environmental frameworks; conducting strategic assessments that explain the application of these frameworks to activities; regional assessments to guide planning and management of cumulative effects; making use of a proposed integrated open science and data platform to inform environmental frameworks and regional assessments.

We are supportive of the Discussion Paper’s focus on cumulative effects and its acknowledgement that project assessments will be challenged to plan for and mitigate the project’s contribution to cumulative effects in the absence of regional environmental assessments that consider all activities on the landscape or in a region. This emphasis is long overdue given that scientific reviews of 40 years of practice of assessing cumulative effects in Canada have shown that rigorous, useful, and tractable cumulative effects assessment (CEA) at the project-level remain elusive<sup>5,6</sup>.

The Discussion Paper proposes better attention to cumulative effects through the use of regional and strategic assessments (i.e., assessments centred on regional and strategic undertakings – policies, plans or programs). We support this idea and recommend that the new impact assessment legislation clearly integrate cumulative effects analysis in project, strategic and regional assessment and to explicitly integrate decision-making across regional, strategic and project levels in a tiered approach.

We suggest a regional-scale CEA would have particular value when conducted in “hotspots” where cumulative impacts are especially severe or are expected to occur in the future (e.g., following construction of region-opening (growth-inducing) roads or transmission lines such as those proposed for the “Ring of Fire” in Ontario’s Far North). Indeed, the best examples of robust cumulative effects analyses have been conducted at regional scales; however, the results are not successfully linked to regulatory decision-making, e.g., at the project level, and become stranded as relatively inconsequential advice. Sections that deal with cumulative effects in most project-level environmental impact statements (EIS) are also invariably insufficient, given the unrealistic expectation for a proponent to undertake meaningful analyses of impacts beyond those associated with the single proposed development for which it has responsibility and the general failure of relevant government agencies to fill these gaps.

Research on improving cumulative effects assessment has focused largely on the development of frameworks and methodologies to advance cumulative effects assessment and management from individual projects to broader regional scales, and on developing the science and tools for assessing and monitoring cumulative effects<sup>7</sup>. For example, Cumulative Environmental Assessment and Management

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<sup>5</sup> Duinker, P. N., E. L. Burbidge, S. R. Boardley, and L. A. Greig. 2013. Scientific dimensions of cumulative effects assessment: toward improvements in guidance for practice. *Environmental Reviews* **21**:40-52.

<sup>6</sup> Duinker, P. N. and L. A. Greig. 2006. The Impotence of Cumulative Effects Assessment in Canada: Ailments and Ideas for Redeployment. *Environmental Management* **37**:153-161.

<sup>7</sup> Noble, B. 2015. Cumulative Effects Research: Achievements, Status, Directions and Challenges in the Canadian Context. *Journal of Environmental Assessment Policy and Management* **17**. doi: 10.1142/s1464333215500015

Frameworks (CEAMFs) that have been developed (e.g., most recently in BC<sup>8</sup>) offer opportunities for conducting CEA at meaningful scales, similar to a Regional Impact Assessment (RIA). In practice, however, the utility of such frameworks has been limited (and ultimately abandoned in some jurisdictions, e.g., NWT) because of the lack of linkage between the strategic nature of these CEAMFs to regulatory decisions; they are advisory in nature with no legislated authority to influence land-use decision-making. Frameworks have emerged in part because cumulative effects are a shared responsibility with previous and future development proponents and resource management agencies. While guidance exists for proponents conducting cumulative effects assessment<sup>9</sup>, the current federal law provides for regional studies<sup>10</sup> as a possible course for addressing cumulative effects, but these provisions have not been used.

We suggest that meaningful evaluation and consideration of cumulative effects in impact assessment will require that impacts are presumed to be cumulative, and assessment should include indicators associated with sustainability with a focus on “valued ecosystem components” (VECs, e.g., specific species and ecosystems processes, and elements of social wellbeing) rather than human activities, including how well aligned the project outcomes are with federal commitments to address carbon emissions and protect biodiversity. Such a “CEA mindset”<sup>11</sup> would require that project-level effects on VECs be appropriately contextualized in terms of other regional stressors. In the absence of a regional assessment to guide decision-making at the project level, it would require that agencies bring in additional information relevant to the spatial and temporal scales of potential cumulative impacts (e.g., from environmental planning and resource management activities).

Overall, the Discussion Paper signals a shift in federal IA to a more comprehensive approach that includes strategic- and/or regional-level assessments with adequately-scoped cumulative effects assessment. We support the need for a *legislated* framework enabling strategic or regional impact assessment in order to address cumulative effects more explicitly. These types of assessment are at the appropriate scale for cumulative effects assessment and both types of assessment can inform and complement project-level assessments as well as set a preferred direction and strategy for achieving sustainability in a region through the assessment of alternative scenarios, including under different climate change futures.

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## RECOMMENDATIONS

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<sup>8</sup> <http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework>

<sup>9</sup> <https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=43952694-1>

<sup>10</sup> *Canadian Environmental Assessment Act, 2012*, SC 2012, c 19, s 52, ss 73-77 [CEAA, 2012].

<sup>11</sup> Sinclair, J.A., Doelle, M & Duinker, PN. 2017. Looking up, down, and sideways: Reconceiving cumulative effects assessment as a mindset. *Environmental Impact Assessment Review* 62 (2017) 183–194.



To ensure cumulative effects are considered more consistently and in a transparent manner in the new IA legislation, **we recommend that the new law:**

- 1) Establish legally-defined regional planning processes led by the federal government in conjunction with governments of provinces and indigenous groups to address potential cumulative effects, define regulatory limits<sup>12</sup>, and provide authoritative guidance for particular undertakings, including project-level assessments;
- 2) Establish a legislated framework for strategic assessments of policies, plans or programs that could similarly address important cumulative effects, broad alternatives and other broad policy matters where the issues are not limited to a particular region (e.g., climate change, transboundary developments);
- 3) Require project proponents to explain how the project is consistent with existing strategic and regional undertakings that have been assessed under or in accordance with the Act;
- 4) Require the Assessment Agency to identify potentially important cumulative effects issues that cannot be addressed adequately by the proponent during the early planning phase (see below) and ensure the relevant government bodies address these matters in the assessment;
- 5) Define cumulative effects in the law to be more than just additive in nature, with appropriate consideration to the synergistic and interactive outcomes of multiple land-use practices, industrial developments, and climate change that aggregate over time and space;
- 6) Establish and apply CEA to a range of possible future development scenarios, going beyond the current practice in Canada of constraining evaluation of cumulative effects only to those from “certain” and “reasonably foreseeable” activities that tend to be narrowly scoped by the proponent.

The Discussion Paper provides no details on how regional and/or and strategic impact assessments could be conducted, despite the very strong recommendations on RIA and SIA by the Expert Panel<sup>13</sup>, well-established guidance for regional and strategic assessments, namely the Canadian Council of

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<sup>12</sup> Regulatory limit *sensu* Johnson, C.J. (2013) Identifying ecological thresholds for regulating human activity: effective conservation or wishful thinking? *Biol. Conserv.* 168, 57–65: “the magnitude or extent of human disturbance that is permitted after which unacceptable ecological change or conservation risk is expected. The identification of unacceptable risk is distinctly non-scientific and is based on societal trade-offs between conservation and other competing values, i.e., through scenario analyses”.

<sup>13</sup> Expert Panel, *Building Common Ground*. URL: <https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/environmental-assessment-processes/building-common-ground.html>

Ministers of the Environment<sup>14</sup>, and the well-documented failure of federal strategic environmental assessment under the non-legislated *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*<sup>15</sup>. We are unsure whether this absence of attention is indicative of deliberate omission, oversight, or simply indecision. Hence, **we recommend that the new law:**

- 7) Establish powers and process for strategic and regional assessments;
- 8) Provide authority for, and criteria defining, the set of strategic undertakings (equivalent to the project list regulations in CEAA 2012), encompassing policies, plans and programs that need to be subject to strategic assessment – including policy or national frameworks that do not address implications at the project-level, and other strategic level initiatives (e.g., federal infrastructure funding programs);
- 9) Enable the Minister to require assessments of strategic undertakings and of types of strategic undertaking not identified in the set predetermined in the legislation, along with a petition process for triggering such Ministerial action;
- 10) Enable “federal-only” regional assessments (including the development and maintenance of a schedule for assessments as well as criteria) for matters falling under federal jurisdiction (e.g. fish and fish habitat, navigation, trans-boundary effects, federal lands and marine areas vulnerable to adverse cumulative effects, impacts on Indigenous Peoples Aboriginal and/or treaty rights);
- 11) Enable federal involvement in cooperative inter-jurisdictional regional assessments, and provide financial incentives for provincial, territorial and Indigenous governments to take the lead in conducting regional assessments and studies in cooperation with the federal government;
- 12) Ensure regional IAs are mandatory considerations in any project-level assessment, particularly where, at regional scales, alternative development scenarios have been implemented or development thresholds have been decided.
- 13) Require a strategic assessment of Canada’s obligations for climate change mitigation under the Paris Agreement, within two years of the coming into force of the new legislation.

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<sup>14</sup> [http://www.ccme.ca/files/Resources/enviro\\_assessment/rsea\\_principles\\_guidance\\_e.pdf](http://www.ccme.ca/files/Resources/enviro_assessment/rsea_principles_guidance_e.pdf)

<sup>15</sup> <https://www.canada.ca/en/environmental-assessment-agency/programs/strategic-environmental-assessment/cabinet-directive-environmental-assessment-policy-plan-program-proposals.html>

## SCIENCE, EVIDENCE AND INDIGENOUS KNOWLEDGE

The Discussion Paper identifies four areas the government is considering under this theme: moving toward an open science and data platform to access and integrate the available science; incorporating Indigenous knowledge alongside other sources of evidence; reinforcing rigor through peer reviews of science and evidence in the assessment phase; making science accessible to all Canadians, not just the experts – by providing plain language summaries of the facts that support assessments.

Whereas the original goals of the Liberal government law reform initiative, the Ministry mandate letters, and the Terms of Reference for the Expert Panel, all explicitly mentioned the incorporation of “robust, scientific evidence” as part of “new, fair processes”, the Discussion Paper is more limited in its treatment of science and evidence as part of a newly-worded objective to “regain public trust”. The Discussion Paper places the greatest emphasis on accessibility and transparency of information/data and the inclusion of Indigenous knowledge. In addition, “timely, evidence-based decisions reflecting the best available science and Indigenous knowledge” is mentioned as one of five guiding principles, and there are scattered references in the document to enhancing the scientific rigour of assessments, validating information presented by the proponents, etc.

As a preamble to our specific recommendations, we join our EPA colleagues in stressing that a new law must establish a **single agency** responsible for the conduct of federal impact assessments. To restore public trust in reviews of natural resource development projects, it is imperative that the National Energy Board, Canadian Nuclear Safety Commission, and offshore oil and gas boards have no authority to conduct impact assessments or appoint representatives to joint panel reviews. These regulatory boards could, however, have a legally entrenched advisory role in assessments of projects over which they have regulatory authority to ensure that best advantage is taken of their technical expertise. The structure and function of this agency, which we refer to frequently in our comments below, will require significant attention -- particularly with respect to restoring and enhancing capacity – in order to implement our recommendations, as well as those in the Ministers’ mandate letters regarding reform of IA legislation.

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## RECOMMENDATIONS

Having a strong evidentiary basis to impact assessment is fundamental to regaining public trust and establishing “new, fair” processes. The weakness of this aspect is a key underlying reason for lack of public trust in current practice and legislation in Canada. Moreover, there are many elements to a strong, evidentiary basis. Adequate attention needs to be paid to deliberately designing processes to help ensure adequate quality, rigorous testing (including monitoring), and transparent treatment of evidence/information that form the basis of any assessments.

We recommend the new law include the following essential elements:

- 1) Significantly strengthened agency with bolstered in-house expertise (including regional) and sufficient capacity to provide clear and consistent guidance, place greater evidence on cross-checks and validation of evidence, employ outside expertise where required, etc.;
- 2) Early planning phase that sets the stage for the assessment, establishes the leadership of the agency to provide guidance and expectations to proponents, develops a plan for information collection with associated responsibilities, and lays out the processes for assessment and review;
- 3) Enhanced public participation, including sufficient funding for interveners to engage qualified experts to contribute to the testing of evidence;
- 4) Regional and/or Strategic impact assessments to provide better guidance to project-level IA, particularly as they relate to cumulative effects;
- 5) Appointment of Joint Review Panels where required, with adequate scientific capacity and/or flexibility to contract services of qualified experts when required;
- 6) Transparency in decision-making and open data throughout; and
- 7) Comprehensive monitoring regime at appropriate scales with continuous oversight by the Assessment Authority.

In this next section of our comments, we start with a section on a Science Advisory Committee which we recommend as one way to reinforce and expand on this area of a new IA law and to address governance. We then focus on two areas of the science/evidence theme: reinforcing rigor through peer reviews of science and evidence in the assessment phase moving toward an open science and data platform to access and integrate the available science.

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## SCIENCE ADVISORY COMMITTEE

The Discussion Paper states the Government of Canada's intention to establish "*Advisory committees for Indigenous peoples, stakeholders and experts to provide advice to the Minister on issues related to impact assessments using reliable information in the formulation of its policies.*" This is a new approach to governance for federal IA. We recommend the creation of a Science Advisory Committee (SAC) as one of these required bodies ("experts"). Here we outline key considerations for the role and function of SAC in the service of a new IA law and regime.

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### PURPOSE OF THE SCIENCE ADVISORY COMMITTEE (SAC)

Advisory bodies are commonly established (often enabled by legislation; see below) to provide government with a forum for consultation with interested parties and experts on aspects of strategic and technical implementation of a given law. Transparent and publicly-available, independent,

scientific<sup>16</sup>, expert advice would help strengthen the basis of Ministerial and Impact Assessment Agency/Authority (hereafter, “Agency”) decisions, ensure greater oversight and bolster public confidence in the federal IA regime.

Members of a SAC would provide advice—independent of any institutional or employment affiliations—to the Minister of Environment and Climate Change and the Agency regarding the implementation and ongoing operations of new environmental impact legislation in accordance with the purposes and goals of the new IA Act. The SAC would focus on specific issues that require specialized knowledge (see below) with a focus on knowledge and learning in relation to ongoing implementation of the law. Its advice would inform selected policies, regulations, guidance, and aspects of the practice of IA.

The role of the SAC would be distinct from other advisory committees, most notably the Multi-Interest Advisory Committee (MIAC)<sup>17</sup>, which was formed at the beginning of the environmental and regulatory review process last year to “*inform potential regulatory, legislative, policy and guidance changes and implementation*” on matters related to IA. The MIAC will continue to be vital for the Minister and the Agency as an important source of input for the ongoing implementation of new IA legislation. However, the key difference is that SAC members would be specifically mandated to provide advice as independent experts (i.e. leave their “institutional hats” at the door), while the purposes of a renewed MIAC would include providing government with a range of interest-based perspectives informing recommended IA legislation, regulation and guidance.

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## MEMBERSHIP

The SAC would be composed of members from within and outside the federal government, appointed to reflect a range of relevant scientific knowledge, expertise, and experience in keeping with the broad evidentiary basis that will be required for project-level and regional/strategic IA. Members should:

- Represent a diversity of knowledge and expertise in areas related to all aspects of sustainability (e.g., environmental, economic, social, cultural and health values), the interactions among these and multiple dimensions of the practice of impact assessment, with attention to diversity and regional representation and including Indigenous knowledge and science;
- Be drawn from and represent a balanced composition of experts from the public and private sector; including academia, professional and/or civil society organizations, Indigenous communities and organizations, and government<sup>18</sup>;

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<sup>16</sup> “Scientific” should be broadly defined, i.e., “the body of knowledge resulting from experiments, systematic observations, statistical data collection and analysis, theory and modelling, and including information from a range of fields in the physical and biological sciences, social sciences, health sciences and engineering” (Scientific Integrity Project, <http://scienceintegrity.ca/>) and should also include Indigenous scholars.

<sup>17</sup> The MIAC’s predecessor was the Regulatory Advisory Committee (RAC), a multi-stakeholder committee first established in 1992 to advise the Minister on the regulations and guidelines needed to implement CEAA that met regularly until 2008.

<sup>18</sup> With respect to non-government appointments, see SARA s 16(4) (re COSEWIC): “(4) The members are not, because of being a member, part of the public service of Canada.”

- Possess demonstrable skills in critical thinking and information analysis grounded in practice and experience;
- Be able to assess heterogeneous bodies of information and offer opinions based on incomplete knowledge, operating comfortably in the face of considerable uncertainty and complexity;
- Be selected following a transparent recruitment process on the basis of established qualifications. The Minister would select the first group following a call for applications, after which SAC members would steward the application process, with appointments approved by the Minister, using COSEWIC as a model;
- Be subject to term limits (staggered among members) that ensure turnover and diversity of the committee;
- Be enabled to draw upon specific expertise from outside the SAC on a contractual basis when needed;
- Be limited in number to 12-15 sitting members; and
- Be governed by procedures outlined in a clear and comprehensive terms of reference, discussed and approved by the SAC at its first meeting.

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#### IA ISSUES REQUIRING SAC ANALYSIS AND ADVICE

The following are examples of particular areas or topics that would benefit as soon as possible from SAC advice to enhance ongoing implementation of the new IA law:

- Identifying undertakings that should be added to the project list;
- Identifying, based on information and their own knowledge and expertise, the need for regional and strategic-level IAs and to advise the Minister of the Environment and Climate Change on the need for strategic and regional IA and their scope;
- Guidelines and standards for cumulative effects assessment, including incorporation into project, regional and strategic assessments;
- Impartial criteria for developing and updating the project list as well as exceptions to the project list;
- Evidentiary standards (information quality) for various stages of IA;
- Maintaining a roster of independent scientists for peer review of IA studies, guidelines and other documents and recommending scientists to the Minister or Agency where required/requested/appropriate;
- Determining how consequential effects or thresholds will be defined and measured, which will be deemed important, and the relative weighting of direct, indirect, and cumulative effects, including those related to climate change;

- Methods to determine a project's GHG emissions and thresholds and targets for GHG emissions for a particular sector, industry or region to be made binding in project IA and how to include this as part of cumulative effects assessments;
- Methods and practice for interfacing with Indigenous knowledge and for ensuring such knowledge, where available, is incorporated in the various stages of an IA;
- Guidelines for addressing uncertainty in impact assessment and decision-making;
- Processes for review and testing of evidence at various stages of IA;
- Design and evaluation of monitoring frameworks and methodologies;
- Build expertise to determine the questions and issues that need to be addressed in any project-level IA that must be decided during early planning stages, including advice on standards for the required evidentiary basis;
- Reviewing and providing advice on specific project or regional and strategic IAs that are precedent setting or present particular challenges; and
- Providing additional advice and expertise to the Minister and the Agency as needed.

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## LEGISLATION

Experience demonstrates that an enabling clause (“may establish”) in legislation renders an advisory body vulnerable to being abandoned or never being established at all, in contrast to mandated establishment of the body (e.g., “shall”)<sup>19</sup>. Therefore, it is important that the SAC have a legislative basis in order to ensure its continued efficacy.

Other aspects of the SAC that would be important to articulate in law, and not left to the terms of reference, include:

- *Qualifications of members*, e.g., relevant expertise (see above);
- *Independence*. Suggested language: “The members of [the SAC] shall perform their functions in an independent manner, and not as representatives of their employers or of any other person or body” (Ontario *Endangered Species Act, 2007* <sup>20</sup>s. 3(5), re Committee on the Status of Species at Risk in Ontario).
- *Functions*. This would be a high-level list of functions of the committee (see Mandate/Functions above);

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<sup>19</sup> For example, under the previous government, COSEWIC (mandated under SARA) continued to function, but both the Species at Risk Advisory Committee (SARAC) and The National Aboriginal Council on Species at Risk (NACOSAR) were disbanded. For CEAA 1992, RAC stopped meeting in 2009 and while CEAA 2012 contains a provision enabling the Minister to “establish research and advisory bodies in the area of environmental assessment” (s. 86), this did not take place.

<sup>20</sup> <https://www.ontario.ca/laws/statute/07e06>

- *Support*. Suggested language: “The Minister must provide [the SAC] with any professional, technical, secretarial, clerical and other assistance, and any facilities and supplies, that, in his or her opinion, are necessary to carry out its functions.” (Species At Risk Act, s. 20 re COSEWIC);
- *Response/Statement of Reasons*. A clause should be included that obliges the Minister to respond to specified SAC advice or recommendations within a specified timeframe in a transparent, public manner, including reasons for a course of action.

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## ADDITIONAL POLICY AND IMPLEMENTATION CONSIDERATIONS

Experience demonstrates that enhancing the functionality of an expert advisory committee will involve several additional factors not mentioned above:

- A robust *conflict of interest policy* should be developed;
- A *committee chair* should be selected by SAC members to set the agenda for meetings, in consultation with the Agency;
- *Remuneration* of services in set amounts would be approved by the SAC and Agency, as well as guidelines for reimbursement of travel, accommodation and related expenses for meetings and other defined SAC-related business;
- SAC *reports* detailing the advice of the committee and communications to the Minister should be publicly available, to meet government objectives for transparency and support public confidence in the IA process (as emphasized in the Discussion Paper);
- Although committee deliberations (but not decisions) must be confidential, a *website* should be maintained reporting on the activities of the SAC, schedule of meetings, topics, and a mechanism for receiving input on such topics from the general public;
- Processes should be established to clarify such matters as *confidentiality and protection of information*, how best to handle *government ATIP requests* and litigation-related “collection of document” requests from Justice Canada, etc.;
- It is essential that adequate *secretariat support* be provided to the SAC, including background research, writing, and logistical support, particularly because SAC members will all have day jobs and must be independent (precluding them from receiving salary support).
  - Terms of Reference should be established for the Secretariat so the respective roles of the committee and the Secretariat, as well as the working relationship between the two, are clear.
  - Good relations and frequent communications between the committee chair and the senior Secretariat staff will help ensure that the committee’s needs are being met.
  - Treasury Board policies (contracting policies, website requirements, etc.) can present significant challenges with budgetary and administrative burdens. Any Secretariat



established should consider all options, including staff that are external to the federal government while being funded by it.

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## PEER REVIEW

The Discussion Paper places important emphasis on the need for “*science, evidence and Indigenous knowledge...[to]...inform project planning, assessment and decision making, and be open, accessible and transparent*” through legislative or programmatic reforms, including “*Reinforcing rigour through peer reviews of science and evidence in the assessment phase*”. Here we outline key considerations for bolstering the peer review process under a new federal environmental assessment law.

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### WHAT IS PEER REVIEW?

‘Peer review’ can be defined as “*a review of technical or scientific merit by individuals with sufficient technical competence and no unresolved conflict of interest.*” ‘Peers’ are “*scientists or engineers who have qualifications and expertise equivalent to those of the researcher whose work they review*” and who are “*capable of making an independent judgment of the merits and relevance of the research.*”<sup>21</sup> Reviews should be conducted by specialists in relevant fields who were not involved in producing the document(s) in question. The US federal government has been formally incorporating peer review into its processes for over two decades, including products for the *National Environmental Policy Act* (NEPA)<sup>22</sup>.

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### WHAT IA PRODUCTS SHOULD BE SUBJECT TO PEER REVIEW?

Products generated through the impact assessment process that present and analyse evidence are candidates for peer review. These include, but are not limited to: 1) the assessment plan arising from early planning stages, including schedules of studies, 2) reports of studies (e.g., literature reviews, “baseline studies”, etc.), 3) underlying scientific or technical products that support the Environmental Impact Statement (EIS), 4) the EIS, 5) relevant ancillary technical analyses not delivered by the proponent (e.g., by interveners), and 6) monitoring plans, frameworks and reports.

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### HOW IS PEER REVIEW CONDUCTED?

Peer reviewers typically evaluate the strengths and limitations of the overall product and the conclusions drawn by the authors. Factors that should be under scrutiny include: 1) validity of the research design, 2) quality of evidence collection procedures, 3) robustness of the methods employed,

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<sup>21</sup> U.S. Gen. Accounting Office, GAO/RCED-99-99, Federal Research: Peer Review Practices At Federal Science Agencies Vary 3 (1999). <http://www.gao.gov/products/GAO/RCED-99-99>

<sup>22</sup> EPA Peer Review Handbook, 4<sup>th</sup> Edition: [https://www.epa.gov/sites/production/files/2016-03/documents/epa\\_peer\\_review\\_handbook\\_4th\\_edition.pdf](https://www.epa.gov/sites/production/files/2016-03/documents/epa_peer_review_handbook_4th_edition.pdf); Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, 67 Fed. Reg. 8452, 8452-58 (Feb. 22, 2002)

4) appropriateness of the methods for the hypotheses being tested, and 5) reasonableness of conclusions and judgments made from the available evidence, including exposing underlying assumptions, apparent biases in the work, and levels of risk and uncertainties associated with the conclusions.

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## THE BENEFITS OF PEER REVIEW FOR DEALING WITH UNCERTAINTY

Careful arms-length review is one means of grappling with uncertainties that are inherent in IA, including gaps and/or weaknesses in the available evidence, the extent to which uncertainties are clearly acknowledged, identified, and characterized, the potential implications of such uncertainties for the conclusions, and whether more investigation is likely to help resolve these uncertainties.

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## RECRUITING AND ENGAGING INDEPENDENT PEER REVIEWERS

There is much to be gained by formally integrating “outside” scientists (i.e. those external to the federal public service) into IA processes *“to create, test, and refine robust models for predicting ecological effects of development.”*<sup>23</sup> (our note: the same could be said for social, economic, and health effects of development). These benefits include integrating advances in basic science that have major practical implications for IA, and ensuring that IA products and/or pertinent analyses stand to have value beyond the reviews themselves.

Given the time and expertise required, reviews from experts outside government must be solicited by the Agency rather than through passive public participation windows or through registries that provide limited feedback to participants. The selection of appropriate reviewers who have the skills and experience to provide meaningful input is a critical step. Few individuals do not have some association or collaborations with industry, community groups, Indigenous groups, environmental organizations and/or other interest groups and so transparency regarding the potential biases of external experts is paramount. It is the Agency’s responsibility to investigate any potential conflicts of interest and independence from the Agency itself. Similar to journal editors, the Agency should keep a list of peer reviewers and their expertise with informal records of their willingness to participate and quality of reviews. Members of the Science Advisory Committee can recommend peer reviewers and participate in the formulation of relevant processes to engage them. Compensation for time of peer reviewers external to government through contracting or stipends would provide better assurance that adequate time and energy will be devoted to the review.

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## STRENGTHENING IN-GOVERNMENT PEER REVIEW CAPACITY

The realities of successfully engaging outside reviewers are sobering, particularly for regulatory review processes where there are currently few incentives for scientists (particularly in academia) to participate from a career-enhancing perspective. Even with journal peer review processes where there are more direct benefits in this respect, refusal rates can be high, with lack of time being the main reason. Even when reviewers agree to participate, they may not be able to provide the quality peer review in the timeline that is needed.

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<sup>23</sup> L.A. Greig & P.N. Duinker (2011) A proposal for further strengthening science in environmental impact assessment in Canada, *Impact Assessment and Project Appraisal*, 29:2, 159-165, DOI: 10.3152/14615511X12913679730557.

In addition to external peer reviews, peer reviewers should also be sought from individuals within the federal service with expertise but who are not involved directly in the generation of IA products. This requires agencies to commit to increases in capacity from today's levels and to ensure that relevant government experts are afforded adequate time within their workplans and job descriptions to conduct such reviews. In addition, agencies must make and keep a strong commitment to improving their knowledge base on a range of issues relevant to IA over time, and to update decisions when significant new information becomes available.

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## LEGISLATION

The new IA legislation should mandate that IA decisions be based on best available evidence. All evidence gathered must be carefully weighed based on the source, any concerns about bias or credibility, the methods used, whether its conclusions are supported or contradicted by other sources and any other factors set out in regulations. The insertion of this language will ensure: 1) that the conduct and decisions of IA are based on “*facts, science, and evidence*” as per the federal government mandate, and 2) clarifies that evidence comes from a wide range of inputs that are appropriately weighted with respect to credibility and impartiality of sources, accompanied by a clear appreciation of how these compliment and conflict with one another as well as the limits to available information and ensuing gaps and uncertainties. Some explicit language in the Act regarding the commitment to evidence-based decision-making should promote rigorous peer review of IA products. Guidelines can then be developed to establish clear expectations regarding the evidentiary basis for the conduct of the assessment.

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## POLICY AND IMPLEMENTATION CONSIDERATIONS

- *Learning from other systems:* Given the lengthy history and relatively common use of regulatory peer review in the US, there have been multiple critiques and recommendations for improvement (particularly with respect to the Endangered Species Act), as well as guidelines and standards that can be instructive in federal IA.
- *Transparency of review:* Transparency of the review process is critical to help ensure its functionality. To this end, the Agency should make available to the public, the written charge to the peer reviewers, the peer reviewers' names, the peer reviewers' report(s), and the response to the peer reviewers' report(s). This is relevant for external and internal peer reviewers alike and also facilitates public trust in the process.
- *Relevant expertise:* There are some fundamental differences between regulatory peer reviews and peer reviews of scientific research (e.g., for scientific journals and publications, grant funding decisions, etc.). Peer review in an IA context would be addressing how scientific information and knowledge is applied to draw conclusions about normative policy decisions, whereas scientific research reviews would focus on the evidence supporting the proponents proposals given the data, uncertainty around current and future scenarios (e.g., climate), and the precautionary principle. IA peer reviews will be most helpful if reviewers possess adequate knowledge of the undertaking in question as well as the policy environment.
- *When to engage peer review:* There are clear advantages to involving peer reviewers at early stages of information production to review study designs and plans prior to significant investments in time and resources. In the context of impact assessment, it is essential to conduct peer-review of the assessment work plan, which would occur at the early planning stage envisioned in the Discussion

Paper. Discussing as early as possible the basic approach to an assessment will maximize the quality of work that can be achieved through the process, rather than having the credibility of the assessment studies and analyses be questioned in a after the project is already underway e.g., the Environmental Impact Statement report has been completed.

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## OPEN ACCESS IN IA

The Discussion Paper explicitly discusses the creation of an “integrated open science and data platform.” The Discussion Paper does not define these terms nor provide any details on how this platform and commitment to open science could emerge. Here we outline some key considerations we think are necessary to enhance the likelihood that open access is successfully and fully implemented in the new federal IA law.

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### WHAT IS OPEN ACCESS?

Open access generally refers to the free and open access by the public, interested stakeholders, Indigenous peoples, and any one else to research outputs, including reports, manuscripts and data whether collected in a public funding setting (e.g., academic research) or private (e.g., proponents, consultants). The consequence of not making scientific research and data openly available in an IA context is that simply it decelerates the progress of information collection and occludes its transparency. This means is that if the IA process does not adhere to the principles of open access, it is not transparent and new studies can’t benefit and build on previous ones.

Following through on this recommendation will be key to the development of next-generation IA. If properly implemented, the result will be marked improvements in scientific integrity of IA processes, chiefly by enriching baseline information, facilitating learning, and enabling transparency in decision-making about the project or strategic and regional undertakings.

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### WHAT SHOULD OPEN ACCESS IN IA LOOK LIKE?

We welcome the recommendation of an “integrated open science and data platform” in the Discussion Paper. For us this means the establishment and maintenance of an easily accessed, well-organized and searchable web-based electronic library (or linked set of libraries) of environmental assessment case materials, including baseline and monitoring data, documentation of impact predictions and monitoring findings, records of decisions and justifications, and related case law. It may be advisable to integrate this database with other federal environmental databases and registries, including from other ministries. In any case, attention should be devoted to arriving at a solution whereby IA decisions can benefit from information associated with *Fisheries Act* authorizations, notifications, monitoring, etc.

Information, experience, and ongoing monitoring data from previously-assessed projects, including review panel materials, will allow lessons learned and facilitate adaptive management within IA. It will facilitate cooperative multi-project monitoring conducted at appropriate scales. Such a move stands to strengthen both the decision to approve or reject a project and provide some evidentiary basis and

framework for mitigation that primarily exist today as un-replicated and unverified experiments. We stress that this is a product of a mandatory establishment of an adaptive management with monitoring framework, built into regional and project assessments, rather than to open access in and of itself. This same approach should also be applied to assessing strategic undertakings as well – policy, plan, programs – as these are also unreplicated experiments that often have little or no “assessment” and evaluation of their “mitigations”.

Successful implementation of an open sciences data platform requires the careful consideration of the interface and its functionality. The platform should consider the following functionalities and submission guidelines to ensure it is truly open and is widely adopted:

- The library should be free to access on the web. Open access mandates that there is no subscription required to access the platform.
- It should host the IA reports as well as associated data, documentation of impact predictions and monitoring findings, records of decisions and justifications, and related case law. A centralized electronic library for all is preferred as it facilitates access through a single website.
- The library should have an explicit licence for the data to facilitate remix and reuse. Examples of open licences include Creative Commons (<https://creativecommons.org/licenses/>) and Open Data Commons Public Domain Dedication and Licence (<http://opendefinition.org/licenses/odc-pddl/>)
- Deposition of data associated with IA reports should be mandatory either into platform or, if a data platform is not supported, the data must be deposited into existing data repositories (e.g. Dryad, GitHub, Zenodo).
- Deposited data should contain basic associated metadata so interested users can interpret the data.
- The platform should have an associated API or an Application Programming Interface to allow third parties to develop accessory applications or integrate the platform into other software. An example is the rOpenSci project (<https://ropensci.org/>) which uses APIs to interface with the R programming language.
- IA reports and associated data should have a companion lay summary with data visualizations to ensure the outputs is not just relevant to scientists and academics. The platform could model the National Science Foundation’s reports like the Women, Minorities and Person’s with Disabilities in Science and Engineering report (<https://www.nsf.gov/statistics/2017/nsf17310/>) which hosts the raw data as well as visualizations of summary data.

## ENHANCED PROTECTION FOR CANADA’S FISH AND FISH HABITAT

### GENERAL REMARKS

Again, we recognize that the high-level nature of the Discussion does not commit the Government to any particular policy course nor does it provide any details on *how* it will address the changes proposed

to the *Fisheries Act*. As such, our comments also rely on the 32 recommendations included in the report submitted by the Standing Committee on Fisheries and Oceans (FOPO)<sup>24</sup> in February 2017 to the Minister of Fisheries, Oceans, and the Canadian Coast Guard<sup>25</sup> as well as the Government Response<sup>26</sup> to the report in June 2017. We also draw on our experience and submission to the Standing Committee.

Our submission focused on the fact that fish and fisheries are an integral part of Canada's history, culture, and economy. Yet, there is good evidence that the Government of Canada has failed to sustainably manage our once-abundant marine<sup>27,28</sup> and freshwater<sup>29,30</sup> fisheries resources and is failing to protect our globally significant freshwater and marine fish habitats<sup>31,32</sup>. Given the *Fisheries Act* is Canada's oldest environmental law, it was long overdue for comprehensive review. We support an evidence-based approach in developing a strong and modernized *Fisheries Act*, in close coordination with the ongoing federal review of Impact Assessment (IA) processes, in order to deliver on the sustainable management of fisheries, and on the protection of marine and freshwater fish habitats.

We recommended restoring protection for **all** native fishes, as opposed to the current narrow focus on "fish that are part of a commercial, recreational or Aboriginal fishery", and we recommend restoring prohibitions against destroying fish habitat. Further, we recommended modernizing the *Fisheries Act* to include: 1) Precautionary principles; 2) Ecosystem approaches; 3) A commitment to evidence-based decision making; 4) Consideration of cumulative effects; 5) Consideration of climate change; 6) Stronger provisions for co-management and co-governance; and 7) A commitment to monitoring and enforcement. We consider these recommendations with the main proposals in the Discussion Paper.

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<sup>24</sup> <https://www.ourcommons.ca/DocumentViewer/en/42-1/FOPO/report-6>

<sup>25</sup> West Coast Environmental Law. 2016. Scaling up the *Fisheries Act*: Restoring lost protections and incorporating modern safeguards. Brief submitted to the Minister of Fisheries, Oceans and the Canadian Coast Guard. URL: <http://wcel.org/resources/publication/scaling-fisheries-actrestoring-lost-protections-and-incorporating-modern-safe>. Accessed November 25, 2016.

<sup>26</sup> <https://www.ourcommons.ca/DocumentViewer/en/42-1/FOPO/report-6/response-8512-421-155>

<sup>27</sup> Wappel T. 2005. Northern cod: a failure of Canadian fisheries management. Report of the Standing Committee on Fisheries and Oceans. URL: <http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=2144982&Language=E&Mode=1&Parl=38&Ses=1>. Accessed August 23, 2017.

<sup>28</sup> Baum JK, Fuller SD. 2016. Canada's marine fisheries: status, recovery potential, and pathways to success. Report prepared by the University of Victoria for Oceana Canada. URL: <http://www.oceana.ca/en/publications/reports/heres-catch-how-restore-abundance-canadas-oceans>. Accessed August 23, 2017.

<sup>29</sup> Cooke SJ, Murchie KJ. 2015. Status of aboriginal, commercial and recreational inland fisheries in North America: past, present and future. *Fisheries Management and Ecology* 22: 1-13.

<sup>30</sup> Lapointe NW, Cooke SJ, Imhof JG, Boisclair D, Casselman JM, Curry RA, Langer OE, McLaughlin RL, Minns CK, Post JR, Power M. 2013. Principles for ensuring healthy and productive freshwater ecosystems that support sustainable fisheries. *Environmental Reviews* 22: 110-134.

<sup>31</sup> Olszynski M. 2015. From 'badly wrong' to worse: an empirical analysis of Canada's new approach to fish habitat protection laws. *Journal of Environmental Law and Practice* 28(1). URL: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2652539](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2652539). Accessed August 23, 2017.

<sup>32</sup> Quigley JT, Harper DJ. 2006b. Effectiveness of fish habitat compensation in Canada in achieving no net loss. *Environmental Management* 37(3): 351-66.

The Discussion Paper outlines the Government's main proposals for the *Fisheries Act* which fall into five broad categories, which we consider in turn.

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## **PARTNERING WITH INDIGENOUS PEOPLES**

We support the Discussion Paper's recommended direction and defer to Canada's Indigenous peoples to comment on how these and other proposals should be considered and implemented through legislation, given they affect them directly.

The new Act must respect the Constitutional rights of Indigenous peoples in Canada, and all review and reform of the Act must be consistent with the duty to consult and accommodate guided by the honour of the Crown. Federal commitments to a new relationship with Canada's Indigenous peoples must be reflected in a modernized *Fisheries Act*, including:

- 1) Commitments to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), including principles such as Free, Prior and Informed Consent (FPIC);
- 2) Commitments to implementation of the Truth and Reconciliation Commission's recommendations (which include implementation of UNDRIP); and
- 3) Commitments to address climate change, with subsequent implications for development and adaptation planning by Indigenous peoples, particularly in remote regions.

As such, we recommend the Act should be amended to explicitly recognize Indigenous jurisdiction in the management of fish and fish habitat, support and incorporate the collection of traditional knowledge about fish and fish habitat, and make it mandatory to consider this knowledge in decision making. On the latter, we would like to emphasize that engaging with Indigenous and local knowledge systems involves encounters of different world views, identities, practices, and ethics, in a context of asymmetries of power and rights. Nowhere are these asymmetries of power more obvious than in federal assessments involving Indigenous Groups, particularly in regions without modern land claim agreements, such as Treaty No. 9 in Ontario's Far North. We therefore encourage the "Multiple Evidence Base" approach which considers complementarity, validation of knowledge within rather than across knowledge systems, and joint assessments of knowledge contributions<sup>33</sup>. Institutions such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Convention on Biological Diversity (CBD) are also applying this approach in their assessment, evaluation, and monitoring programs.

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## **PLANNING AND INTEGRATED MANAGEMENT**

We are generally supportive of the direction and intent of this suite of proposals. However, "enabling" the identification of important habitats is insufficient. These provisions were introduced as part of the

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<sup>33</sup> Tengö, M., R. Hill, P. Malmer, C. M. Raymond, M. Spierenburg, F. Danielsen, T. Elmqvist, and C. Folke. 2017. Weaving knowledge systems in IPBES, CBD and beyond—lessons learned for sustainability. *Current Opinion in Environmental Sustainability* **26-27**:17-25.



2012 amendments to the Act but have yet to be used<sup>34</sup>. The Act should be amended to require the systematic assessment of important habitats throughout Canada on a fixed timeline (e.g., 5 years for all of Canada). In addition, the assessment of cumulative effects, and the principles of precaution and ecosystem-based management, should be explicitly incorporated into the Act. Finally, the *Fisheries Act* has not had a stated purpose since 1986. We recommend the new Act have a clearly stated purpose, which should include habitat protection and protection of native freshwater biodiversity, alongside other desired conservation, social, and economic outcomes.

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## REGULATION AND ENFORCEMENT

We are generally supportive of the direction and intent of this suite of proposals, especially the restoration of the original prohibition against HADD and the enhancement of enforcement powers. Although reinstating the prohibition against the harmful alteration, disruption and destruction of fish habitat is an important first step in reforming the Act, an effective and modernized *Fisheries Act* requires more than reverting to the previous status quo. Indeed, the *Fisheries Act* was failing to protect fish habitat even prior to the 2012 amendments, primarily as a result of failures in management and enforcement<sup>8,9</sup>. The legislation must be comprehensively reformed to include the introduction of modern safeguards.

We recommend making an explicit commitment to evidence-based decision-making in the Act, and language that requires the use of the best available science, research, and technical information available. Further, we recommend explicitly including the precautionary principle and ecosystem approach to fisheries management and fish habitat protection. This would bring Canada closer to achieving international goals and targets adopted through the Convention on Biological Diversity<sup>35</sup> in the management of fisheries and in the conservation and protection of fish and fish habitat. We recommend the development of a cumulative effects approach that includes proactive, watershed-level planning to avoid the piecemeal deterioration of fish habitats<sup>36</sup>. Finally, we recommend explicitly considering climate change alongside other cumulative effects, which will also bring Canada closer to achieving international goals and targets communicated through Intended Nationally Determined Contributions to the United Nations Framework Convention on Climate Change.<sup>37</sup>

With respect to clarifying which projects require authorizations and which do not, we suggest that the question is not whether or not authorization is required but rather the form that such authorization will

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<sup>34</sup> *Fisheries Act*, section 37(1.1).

<sup>35</sup> Convention on Biological Diversity. 2010. Canada country profile. URL: <https://www.cbd.int/countries/?country=ca>. Accessed November 25, 2016.

<sup>36</sup> Dubé, M. G., P. Duinker, L. Greig, M. Carver, M. Servos, M. McMaster, B. Noble, H. Schreier, L. Jackson, and K. R. Munkittrick. 2013. A framework for assessing cumulative effects in watersheds: an introduction to Canadian case studies. *Integr Environ Assess Manag* 9:363-369.

<sup>37</sup> Canada's INDC submission to the UNFCCC. 2015. URL: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Canada/1/INDC%20-%20Canada%20-%20English.pdf>. Accessed August 23, 2017.



take. For “minor” projects, the general scope of which would need to be defined in the Act (i.e. what qualifies as minor), we suggest that Parliament give the Minister the power to enact regulations that would automatically authorize such works, provided that the proponent comply with certain basic conditions (e.g. standards and/or codes of practice), including notification (also referred to as registration in this document). Such a regime would be similar to Fisheries and Oceans Canada’s previous experience with Operational Statements – except better. Mandatory notification/registration, in particular, would allow the Department to track all minor works, which would enable better planning and the management of cumulative effects.

With respect to enforcement, two of the key issues with the Fisheries Act prior to the 2012 changes were: 1) The Minister had the discretion to authorize “harmful alteration or disruption, or the destruction of fish habitat”; and 2) There was a basic lack of monitoring and enforcement, which resulted in consistent habitat losses despite prohibitions in the Act. We recommend prohibiting the Minister from providing exemptions in a discretionary manner. We also recommend the development of measurable targets for habitat protection and the implementation of monitoring programs to ensure that targets are being met. Finally, we recommend an external review of internal capacity devoted to enforcement and scientific assessments, which are key underpinnings to ensuring that a modernized *Fisheries Act* is implemented.

With respect to clarifying the factors considered in decisions about approvals, it is not possible to say what effect – if any – the current set of factors (introduced in 2012) has had on decision-making: the factors themselves are largely non-directional (do not guide a decision in one direction over another) and the Department’s practice has only ever been to issue authorizations, but not to give its reasons for granting them. Consequently, the Act should be amended to require an accompanying set of reasons for authorizations that have the potential to result in significant impacts to fish and fish habitat, bearing in mind the uncertainty often associated with mitigation and offsetting. Current decision-making factors in approvals should include: current and potential future state (e.g., scenarios) of the watershed or sub-watershed in which the work, undertaking, or activity is being proposed; the potential for adverse cumulative effects (e.g., thresholds); relevant management frameworks established by a province, territory, or Indigenous government as well as Integrated Fisheries Management Plans<sup>38</sup>; the potential impacts of the work, undertaking, and activity on Aboriginal or treaty rights, taking into account traditional knowledge and subsistence needs.

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## PARTNERING AND COLLABORATION

We support the direction and intent of this suite of proposals. Parliament should legislate the creation of the “collaborative committee to advise on fish and fish habitat”, and” and to ensure funding for its continued operation. Details regarding its composition (i.e. the diversity of its members as between different sectors and stakeholders; see above on Indigenous peoples) should be made public.

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<sup>38</sup> <http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/index-eng.htm>

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## REPORTING BACK TO CANADIANS

We support the direction and intent of this suite of proposals. We encourage the creation of a central online registry, similar to the current Canadian Environmental Assessment Registry<sup>39</sup>, for all major and minor projects under federal jurisdiction. The other part would be similar to the current *Species at Risk Act* Registry<sup>40</sup> and would contain all non-major projects that, pursuant to their governing legislation, require registration (essentially notice and other specified information). Registrations would include:

- All notifications obtained pursuant to the minor works/minor waters regulations.
- All section 35 applications, their eventual authorizations, reasons (for projects with potentially significant impacts), adaptive management plans, and any monitoring data subsequently provided per the terms of those authorizations.
- An online map that plots the location of all of these projects and that provides information on the state of the watershed (fish habitat) in which they are found<sup>41</sup>.

Each of these elements should be explicitly listed in the Act as required components of such a registry. Finally, the Department should report on the total amount of habitat impacted in a given year and the amount of habitat offset or restored<sup>42</sup>.

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<sup>39</sup> <http://www.ceaa.gc.ca/050/index-eng.cfm>

<sup>40</sup> The SARA registry, and especially the page listing all permits and agreements, is available online: [https://www.registrelep-sararegistry.gc.ca/sar/permit/permits\\_e.cfm](https://www.registrelep-sararegistry.gc.ca/sar/permit/permits_e.cfm). This registry should also be part of a future central federal registry.

<sup>41</sup> See the World Wildlife Fund's Watershed Reports as an example. URL: <http://watershedreports.wwf.ca/#canada/by/threat-overall/profile>.

<sup>42</sup> Favaro, B. and M. Olszynski. 2017. Authorized net losses of fish habitat demonstrate need for improved habitat protection in Canada. *Canadian Journal of Fisheries and Aquatic Sciences* **74**:285-291. URL: <http://www.nrcresearchpress.com/doi/abs/10.1139/cjfas-2016-0480#.WZOwxoqQzeQ>. Accessed August 23, 2017.