November 15, 2016

Sent via email to **ENVI@parl.gc.ca**

Ms. Deborah Schulte, M.P.
Chair, Standing Committee on Environment and Sustainable Development
House of Commons
Ottawa, ON
K1A 0A6

Dear Chair Schulte:

Re: Written comments of Ecojustice, Environmental Defence and Équiterre to the Standing Committee on Environment and Sustainable Development, in the review of CEPA 1999

Thank you for the opportunity to provide a written submission to the Committee on Environment and Sustainable Development regarding the current review of the *Canadian Environmental Protection Act 1*999 (CEPA). The attached recommends amendments to CEPA to meet new challenges, increase environmental and human health protection, and respond to changes and advances in scientific knowledge since CEPA was last revised seventeen years ago in 1999.

Elaine MacDonald of Ecojustice and Maggie MacDonald of Environmental Defence testified before the committee on March 10, 2016 and were invited by committee members to provide further written submissions. In response to this invitation, we provide the attached written submission with Sidney Ribaux of Équiterre.

Leading the legal effort for a brighter future, Ecojustice is Canada's only national environmental law charity. Ecojustice has a staff of lawyers and scientists who use the power of the law to defend nature, slow climate change, and stand up for the health of our communities. Environmental Defence is a national charity that challenges and inspires change in government, businesses and people to ensure a greener, healthier and prosperous life for all. We are policy experts supported by scientists, business leaders, lawyers and community members working hard to protect Canada's environment and human health. Équiterre (legal name ASEED) has worked with citizens, farmers, organizations, think tanks, businesses, municipalities and governments of all stripes to influence environment and climate change policies and related practices in Quebec and Canada.

Our 25 recommendations in five key areas are formulated based on a critical review of the scoping document, analyses of the recommendations from previous reviews, the testimony of other witnesses called upon during the current review process, and our extensive experience advocating for stronger

laws to protect the environment and human health from the harmful effects of toxic substances and pollution. We have sought advice from numerous experts in preparing the attached submission, including several Ecojustice staff lawyers, and academic experts in law and environmental health.

If the Committee has questions about the attached submission, or wishes us to appear before the committee to discuss our recommendations, please feel free to contact us.

Yours Truly,

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Recommendations from Ecojustice, Environmental Defence and Équiterre to the House of Commons Standing Committee on Environment and Sustainable Development in the 2016 Review of the *Canadian Environmental Protection Act, 1999*

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Executive Summary

The primary purpose of the Canadian Environmental Protection Act 1999 (CEPA) is to contribute to sustainable development through pollution prevention. Sustainable development includes protection of the environment and human health from pollution and harmful substances. CEPA also commits the federal government to the full implementation of the precautionary principle that, "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." This is the framework that guides our recommendations respecting this review of CEPA. We believe Canadians and their environment need better protection from pollution and the harmful effects of toxic substances. Our submission provides 25 recommendations in five key areas as summarized below.

1. **Recognizing our Rights and Protecting the Vulnerable: Substantive Environmental Rights and Environmental Justice**

CEPA must be amended to recognize the substantive right to a healthy environment for all Canadians – the right to breathe clean air, drink safe water, and the right to enjoy a nontoxic environment and healthy ecosystems for our children.

Environmental rights are not meaningful unless enjoyed by all. Substance assessments under CEPA do not consider disproportionate impacts on marginalized populations such as low income and First Nations. Nor do assessments consider the higher risks during developmental widows of vulnerability like pregnancy or puberty. CEPA needs to adopt an environmental justice framework to address inequitable distribution of environmental harms and protections in Canada.

2. **Toxic is Toxic: Improving the Assessment of Substances under CEPA**

Endocrine-disrupting chemicals (EDCs) have challenged traditional concepts in toxicology, in particular the dogma of "the dose makes the poison". This is because EDCs can have effects at low doses that are not predictable by knowing the effects at higher doses. The outdated risk assessment approach under CEPA is in need of amendment to ensure low-dose biological response is considered when assessing EDCs regardless of dose. Common EDCs are widely used and found in everyday consumer items like BPA in can linings and phthalates in cosmetics. No one is exposed to just a single chemical, by the time most people are done their morning routine they may have been exposed to over 100 chemicals through personal care products alone. Surprisingly and unfortunately CEPA still frequently takes a one-by-one approach to assessing chemicals.

3. **Getting to Banned: the Need for Fast and Effective Regulation of Toxic Substances**

Some chemicals are so hazardous that they should be banned unless they can be shown to be safe for the proposed use, such is the case in Europe under the REACH program for substances of very high concern to human health or the environment. CEPA must be amended to give Canadians the right to ask for the assessment and regulation of substances based on scientific studies and data. Even when a substances are found to be toxic, it can take many years for the risks posed to be regulated or managed, as occurred with the toxic class of flame retardants PBDEs. In addition, far too often the measures adopted are minimal or merely voluntary. Improvements to CEPA should ensure that toxic chemicals are restricted or banned quickly and do not remain unregulated for years and years as is too often the case now.

4. The 'Everyday' Toxic: Effective Management of Chemicals in Cosmetics and Other Consumer Products

There has been a significant shift in sources of pollution in Canada in recent decades. Canadians and their environment are now increasingly exposed to toxic substances in everyday items such as cosmetics and imported manufactured goods, rather than from the factory down the street. Insufficient action has been taken to address toxic substances in consumer products through CEPA and related legislation, and there is no requirement to assess and use safer alternatives.

Also concerning is even when restrictions are adopted under CEPA, they only address a fraction of the products containing the toxic chemical. For example, the endocrine disrupting plasticizer BPA was banned in baby bottles after an assessment under CEPA, but is still legally used to line food cans and to coat cashier receipts. Measures to regulate toxics in products must not create inequalities by banning manufacturing but omitting measures to manage existing products at the end-of-life and prevent entry into the second hand market.

5. Tell Us More and Let Us Comment: Transparency and Public Engagement

Two of CEPA's overarching objectives are to promote transparency and public participation in decision-making. Part 6 of the Act, which deals with animate products of biotechnology like genetically modified salmon, largely mirrors the toxicity assessment provisions in Part 5 with respect to chemicals. In practice, Part 6 has proven to be excessively opaque and complex, leaving numerous loopholes and areas of regulatory uncertainty. The self-reproducing nature of bioengineered organisms, including animals in particular, also creates challenges with respect to distinguishing between permitted activities in relation to the organism, in that "use" at times cannot be easily distinguished from "manufacture" despite the Act's treatment of use and manufacture as two generally distinct categories.

The only national source of pollutant information in Canada is the National Pollutant Release Inventory, yet it is riddled with loopholes, exemptions and under estimations as further explained in the attached submission. This leaves Canadians with incomplete information and a potentially false sense of the pollution releases in their communities. Exemptions such as that for fracking chemicals must be closed, industry reported NPRI data must be validated, and reporting requirements need to be prescribed to ensure consistent, accurate and complete information is reported to the NPRI annually.

Canada's Environment Has Changed, Now It's Time for CEPA to Change Too

Since CEPA was enacted in 1999, the Canadian economy has shifted to include less heavy industry and consumer products are now responsible for a greater share of pollution than when the Act was first passed. New science has also emerged, underlining the hazardous nature of endocrine disrupting substances toxicologists believed were safe in 1999. To adapt and compensate, the Chemicals Management Plan has drawn on other Acts for Risk Management Instruments, such as the *Canada Consumer Product Safety Act* and the *Cosmetics Regulations* of the *Food and Drugs Act*. But these measures fall short of the substantial environmental and human health protection CEPA can and should offer, if it is updated in a meaningful way. This Review is a generational opportunity to accomplish that aim.

Summary of the 2006 – 2008 Reviews

The last reviews of CEPA 1999 were conducted from 2006 to 2008 by the House of Commons Standing Committee on Environment and Sustainable Development and the Senate Standing Committee on Energy, the Environment and Natural Resources. The House Committee review focused on Part 5, which deals with Controlling Toxic Substances. The Senate review focused on two case studies (mercury and PFCs) to assess how the Act is implemented. The reviewers made 55 recommendations but no comprehensive reforms were made.[1]

Some of the key legislative recommendations that were not acted on include:

- amendments to CEPA to require the research and data on the human health and environmental effects of complex mixtures and cumulative effects,
- a two-year timeline from beginning of assessment to commencement of implementation,
- including protection of vulnerable populations and vulnerable ecosystems,
- engage stakeholder in identify and implementing best practices risk management actions as soon as risk assessment has begun,
- requirements for alternatives assessment to bring about safer substitution,
- measure and evaluate the role and implementation of enforcement provisions of CEPA 1999 require a review of all of its regulations every five years to ensure that they are continuously improving,
- definition of bioaccumulation in the *Persistence and Bioaccumulation Regulations* of CEPA 1999 be amended to ensure that no substance that is found to be persistent, bioaccumulative and inherently toxic is left off the Virtual Elimination List,
- include a requirement for the assessment of the cumulative impact on the environment and/or human health of substances or classes of substances with similar modes of action, and
- substances with similar modes of action, sites of toxicity, unique modes of bioaccumulation and modes of environmental transport be assessed as a class, as is currently required for pesticides under the *Pest Control Products Act,* and
- amend CEPA to give the Ministers of Environment and Health explicit power to designate areas and populations in need of special protection under the Act.

[1] ECCC. The *Canadian Environmental Protection Act, 1999* Overview for the Standing Committee on Environmental and Sustainable Development. Power Point Presentation. March 8, 2016.

Recommendations for the 2016 CEPA Review

Protection of the environment and human health are two of the greatest challenges of our time. These cannot be accomplished by individual pieces of legislation nor by one level of government acting alone. Parliament is reviewing a broad range of legislation with the goal of restoring previous protection and modernizing environmental protection as well. "Modern" environmental laws recognize and enshrine a number of key principles:

1) Recognition of the right to a healthy environment for all Canadians, which ensures an equitable sharing of all environmental burdens and benefits.

2) Reliance on strong, binding standards that apply nationally and are equal to or better than other industrialized countries.

3) Recognition of the polluter pays principle, including incorporating the costs of environmental externalities in prices.

4) Implementation of the precautionary principle. And,

5) Substitution of environmental hazards with safer alternatives.

Discussion of how these principles could be incorporated into federal legislation is discussed in this submission as well as our other submissions on the *Navigation Protections Act, Canadian Environmental Assessment Act*, the *Fisheries Act* and the *National Energy Board Act*.

1. Recognizing Our Rights and Protecting the Vulnerable: Environmental Rights

Substantive Right to a Healthy Environment

An important CEPA reform is the recognition of the substantive right to a healthy environment for all Canadians. The guarantee of substantive environmental rights lies at the very heart of CEPA, and indeed was initially promised by the Progressive Conservatives government in 1986. This vital human right includes the right to breathe clean air, drink safe water, enjoy a nontoxic environment and healthy ecosystems for our children.

Right now the people of Canada are guaranteed none of these rights, even though they are important determinants of health and citizens in over 112 other countries around the world have the benefit of legislated recognition of the right to a healthy environment in their communities. Indeed, citizens in more than one hundred countries enjoy constitutional protection of this right.[2] Human health, wellbeing, and dignity depend on access to clean air and water, safe food and a stable climate. This should be explicitly spelled out in CEPA.

[2] For a detailed exploration of international experience in jurisdictions which recognize citizens' right to a healthy environment, see David R. Boyd, *The Right to a Healthy Environment: Revitalizing Canada's Constitution* (UBC Press, 2012). See also Ecojustice "The Right to a Healthy Environment: Canada's Time to Act", online: https://www.ecojustice.ca/wp-content/uploads/2015/04/Right_to_a_healthy_environment_FINAL.pdf.

The most common wording used in other jurisdictions is "the right to a healthy and ecologically balanced environment," a phrase which captures people's concerns about impacts on both human beings and the environment itself.

Recommendation 1

> We recommend adding the paragraph (p) to CEPA under subjection 2(1).
>
> 2(1) In the administration of this Act, the Government of Canada shall, having regard to the Constitution and laws of Canada and subject to subsection (1.1),
>
> p) respect, protect, and fulfill the right of every Canadian to live in a healthy and ecologically balanced environment

Environmental Justice

There is increasing evidence that throughout Canada, communities with low socio-economic status and communities belonging to historically disadvantaged groups, including Indigenous communities, are disproportionately exposed to and impacted by environmental hazards.[3] Environmental justice is a framework for studying and addressing the inequitable distribution of environmental hazards in society.

Consideration of the relationship between socio-economic status, race, and environmental health is relatively new in Canada. In other jurisdictions, including the United States, issues of environmental justice have been subject to discussion, study, and legal recognition for decades. The World Health Organization (**WHO**) recommends that governments complete a national environmental health inequality assessment to comprehensively identify current environmental injustices.[4] No Canadian laws explicitly identify and address issues of environmental justice or inequity.[5] We believe it is time for this to change and that amendments to CEPA present an exciting opportunity to begin to tackle the inequitable distribution of environmental harms in Canada.

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[3] Miller, Alexander C. *From the Indian Act to the Far North Act: Environmental Racism in First Nations Communities in Ontario*. (2009) <http://www.cehe.ca/sites/default/files/Miller_ENSC501.pdf>. Gosine, A. and Teelucksingh, C. (2008). Environmental Justice and Racism in Canada: An Introduction. Toronto: Emond Montgomery Publications Limited. MacDonald, Elaine and Rang, Sarah. *Exposing Canada's Chemical Valley* (2006). Boyd, David R. 2015. *"Environmental Injustices." Cleaner, Greener, Healthier: A Prescription for Stronger Canadian Environmental Laws and Policies*. Vancouver: UBC Press.

[4] World Health Organization. Fifth Ministerial Conference on Environment and Health. Social and gender inequalities in environment and health. P.16. Last accessed on October 24, 2016. http://www.euro.who.int/__data/assets/pdf_file/0010/76519/Parma_EH_Conf_pb1.pdf. See also. Annette Prüss-Üstün, Colin Mathers, Carlos Corvalán, Alistair Woodward. Introduction and methods: Assessing the environmental burden of disease at national and local levels Environmental burden of disease series No. 1. 2003. World Health Organization Protection of the Human Environment. Last accessed on October 24, 2016 < http://www.who.int/quantifying_ehimpacts/publications/en/9241546204intro.pdf?ua=1>

[5] Note that in February 2016, Bill 20, *The Environmental Rights Act* was introduced in Manitoba. While it did not become law, that Bill included at section 3(1) the guiding principle of environmental justice. Bill 111, *Environmental Racism Prevention Act*, currently before the Nova Scotia Legislature is focused on examining and addressing issues of environmental justice and environmental racism in that province. Ontario is reviewing its Environmental Bill of Rights and proposing to include a substantive right to a Healthy Environment.

Case Study: Aamjiwnaang First Nation

The Aamjiwnaang First Nation in the center of Sarnia's Chemical Valley is surrounded by petroleum refineries and petrochemical plants. Community members are disproportionally exposed to industrial emissions, including carcinogens like benzene and 1,3-butadiene and the respiratory toxic substance sulphur dioxide. For years, Aamjiwnaang residents have been voicing concerns about rates of adverse health outcomes such as asthma, skin rashes, and miscarriage in their community. Assessments of petroleum sector substances conducted under the Chemicals Management Plan (**CMP**) in 2014 identified health risks to communities close to refineries from site and industry restricted gases such as benzene and 1,3-butadiene. In total, 40 substances were proposed for addition to the toxic substance list. Many other petroleum sector substances were found not to be toxic. The assessments did not consider the unique situation faced by the Aamjiwnaang First Nation who have been continually exposed for decades to the cumulative emissions from the multiple petroleum sector facilities that surrounds their community. Furthermore, despite finding site and industry restricted gases from the petroleum sector toxic to human health, regulations have yet to proposed and are late by several years.[6]

Environmental justice requires not only on "fair treatment" but also "meaningful involvement." We are in full support of the definitions for "fair treatment" and "meaningful involvement" recommended by Canadian Environmental Law Association (**CELA**).[7] That is, the need for affected racialized, poor, and Indigenous communities to be meaningfully involved in environmental policy development and decision-making. Many of the transparency and public participation recommendations outlined in other sections of our brief would promote this second aspect of environmental justice. Nonetheless we believe it is important to explicitly reference and operationalize environmental justice considerations in CEPA.

As a starting point, CEPA should define what is meant by "environmental justice." We would be pleased to provide the Committee with existing definitions of environmental justice, including in particular:

- that of the US Environmental Protection Agency (**EPA**),
- Executive Order 12898 "Federal actions to address environmental justice in minority populations and low-income populations" (issued by President Clinton in 1994), and

[6] The Petroleum Substance review was completed in five streams number 0-4. Stream 1 and 2 assessed substances pertaining to petroleum sector operations such as refineries, upgraders and natural gas plants. The Sector Stream 1 June 2013 Screening Assessment concluded that site restricted petroleum and refinery gases are toxic to human health as per section (64c). The risk management strategy published at the same time proposed a regulation under CEPA focusing on additional practices and technologies, or the improved implementation of existing requirements, for reducing fugitive emissions from petroleum facilities (such as refineries, upgraders, and natural gas processing facilities). The risk management strategy proposed a timeline for consultation on a draft instrument of December 2013-June 2014. No instrument has been proposed as of the date of this brief. The stream 2 screening assessment published in January 2014 found that industry restricted petroleum and refinery gases to be to be toxic to human health as per section (64c). The risk management strategy published at the same time proposed to use the same regulation as the site restricted petroleum gases to improved implementation of existing requirements, for reducing fugitive emissions from petroleum facilities. The risk management strategy proposed a timeline for consultation on a draft instrument of July 2014 – January 2015. No instrument has been proposed as of the date of this brief. In September 2016 the site and industry restricted petroleum and refinery gases were added to schedule 1.

[7] CELA Submission dated June 16, 2016. Page 3, item 4c. Accessed at <http://www.cela.ca/sites/cela.ca/files/CELAResponse-to-Questions-from-HC%20EnvSD%20June2016.pdf>

- those contained in reports to the United Nations Human Rights Council by the Special Rapporteur on human rights and the environment (previously known as the Independent Expert on human rights and the environment).[8]

Similar to the definition proposed by CELA,[9] based on international examples of such definitions we propose the following definition for inclusion in CEPA.

Recommendation 2:

We recommend adding the following definition to CEPA.

3(1)…environmental justice means the equitable distribution of environmental hazards and benefits in Canadian society. It includes fair treatment and meaningful involvement of people regardless of characteristics such as race, colour, national origin, income, or membership in a historically disadvantaged community with respect to the development, implementation, and enforcement of this Act and related regulations and policies.

This would be achieved when everyone enjoys the same degree of protection from environmental and health hazards and access to decision-making processes to ensure that their right to a healthy environment in which to live, learn, and work is fulfilled. This is similar to the objective set out in the US EPA's definition of "environmental justice."

To operationalize environmental justice considerations throughout the Act a number of amendments should be considered. An important starting point is to add to the mandatory duties on government set out in section 2(1) of CEPA the obligation to treat all persons fairly and to meaningfully involve all persons in decision-making, regardless of characteristics such as race and income.

Recommendation 3:

We recommend adding the following paragraph to CEPA.

2(e) encourage the meaningful participation of the people of Canada in the making of decisions that affect the environment regardless of characteristics such as race, colour, national origin, income, or membership in a historically disadvantaged community;

…

[8] See, e.g. *Report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox: Compilation of good practices*, United Nations General Assembly A/HRC/28/61 (3 February 2015) [Knox 2015]; *Report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox: Mapping Report*, United Nations General Assembly A/HRC/25/53 (30 December 2013); *Report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox: Preliminary report*, United Nations General Assembly A/HRC/22/43 (24 December 2012).

[9] CEPA submission dated June 16, 2016. Page 3, Item 4c. Accessed at <http://www.cela.ca/sites/cela.ca/files/CELAResponse-to-Questions-from-HC%20EnvSD%20June2016.pdf>

(n.1) ensure that decisions, regulations, and policies under this Act do not have a disproportionate negative impact on persons on the basis of grounds including race, colour, national origin, income, or membership in a historically disadvantaged community;

A similar recommendation was made by CELA.[10]

While the above recommendations present important ways in which CEPA could be modernized to reflect and address issues of environmental justice, we wish to be clear that as a starting point it is important that Parliament take a holistic approach to studying environmental justice in the Canadian context. This would ensure that a national approach to addressing issues of environmental injustice in this country would be based on a comprehensive understanding of the issue and that, in addition to environmental, poverty, and health advocacy groups, impacted communities have a meaningful opportunity to provide insight and recommendations.

In order to achieve this objective, it could be useful for the Ministers to establish an advisory committee under paragraph 7(1)(a) of CEPA to report to the Ministers on the issue of environmental justice in the Canadian context. In doing so, the Ministers should specify that the advisory committee is to seek input from the public, including communities facing inequitable pollution burdens, and non-governmental organizations concerned with issues of poverty, race, environmental quality, and public health. Information gleaned from this review would further inform ways in which issues of environmental justice can be best incorporated into CEPA and other Canadian laws. For instance, impacted communities could have valuable insight as to how Part 2 of CEPA could be improved so as to encourage participation of persons belonging to low income or historically disadvantaged communities in this country.

Protection for Vulnerable Populations

The human health effects of exposure to a toxic substance will vary depending on a number of factors. Some people may be more vulnerable to the effects of toxic substances than others due to particular susceptibilities or sensitivities.

Susceptibility is defined as a capacity characterized by biological (intrinsic) factors that can modify the effect of a specific exposure, leading to higher health risk at a given relevant exposure level. Some subpopulations are more susceptible to environmental risks due to intrinsic biological factors such as life stage (e.g. children, woman of child bearing age, seniors) or a pre-existing medical condition (e.g. asthmatics) that modify the effect of an exposure.

In the womb, the fetus can be exposed to a number of contaminants which can pass through the placenta and may cause developmental abnormalities. Women of child bearing age may be more susceptible to endocrine disrupting compounds, such as phthalates, because of the pronounced role that hormones play in reproductive health. During pregnancy, depending on when the exposure occurs, the effects can be very serious. This is why women of child bearing age are considered a susceptible population. There are windows of vulnerability, such as pregnancy and puberty, when women are more susceptible to developing breast cancer from exposure to endocrine disrupting chemicals. A person with

[10] CELA Submission dated June 16 2016. Page 3, Item 4.b <http://www.cela.ca/sites/cela.ca/files/CELAResponse-to-Questions-from-HC%20EnvSD%20June2016.pdf>

asthma is more susceptible to the impacts of air pollution on lung function than most others. A child is more susceptible to the neurotoxic effects of lead exposure than an adult.

Sensitivity is the term used to describe a population with the capacity for higher risk due to the combined effect of susceptibility (biological factors) and differences in exposure. For example, a person with a pre-existing condition such as asthma, living near industrial air emissions or near a highway, would be part of a sensitive population. Infants have higher exposures to toxic substances because of behaviours such as crawling on the ground and putting items in her mouth, which is one of many reason they are also considered a sensitive population. Women of child bearing age that who in a plastics facility or a nail salon, where substances with endocrine disrupting properties are used, are also members of a sensitive population.

Case Study: Nail salons and fetus in the workplace

Nail salons have come under scrutiny in recent years as health studies have documented the poor indoor air quality in many of these establishments, and in some jurisdictions action is being taken to protect the health of workers and customers.[11] The chemicals used in the personal care products used in nail salons impact not only workers and customers, but also, for pregnant workers, the fetus, the development of which is more vulnerable to the effects of chemical exposures than an adult.

Chemicals used in nail salons, including cosmetics like nail polish, which can contain phthalates, toluene, and formaldehyde, and products used to remove nail products, which can contain acetone and strong solvents, are linked to numerous deleterious health effects. Formaldehyde is a known carcinogen, toluene is neurotoxic, and endocrine disrupting phthalates have been linked to asthma and birth defects, particularly in the male fetus, for which fetal exposure to phthalates has been linked to reproductive organ deformities such as cryptorchidism and reduced anogential distance, that are risk factors for cancers, such as prostate and testicular cancer, that occur later in life.

Occupational Health and Safety is not the domain CEPA, but the nail salon provides an example of how these concerns do overlap with issues covered by CEPA and CMP, by asking us to consider the question of chemical exposures and the fetus in the workplace. The fetus is also illustrative of the concept of “windows of vulnerability.” The human health endpoints of endocrine disrupting chemicals, such as phthalates, can vary depending on what development stage an individual is at when exposed. For example, due to the impact endocrine disrupting chemicals may have on sensitive metabolic processes, the fetus, the infant, the adolescent undergoing puberty, and a pregnant woman, are more vulnerable to effects of exposure than the average healthy adult male.

Vulnerability incorporates the concepts of susceptibility and sensitivity, as well as additional factors that include social and cultural parameters (e.g., socio-economic status and location of residence) that can contribute to an increased health risk. Health Canada provides the examples of children, pregnant women, Aboriginal peoples and seniors as populations more vulnerable to environment risk.

[11] http://www.nytimes.com/2015/09/30/nyregion/pilot-program-will-gauge-air-quality-in-new-york-nail-salons.html

The Environment and Climate Change Canada (**ECCC**) proposal[12] to add preamble language is insufficient and will not protection vulnerable populations from toxic substances. Acknowledging vulnerable populations in the preamble language does not provide them with any additional protection because the preamble to a statute is not considered legally binding or enforceable.

As a starting point, CEPA should define what is meant by "vulnerable populations." Combining the descriptions of susceptible and sensitive populations the following definition is recommended of vulnerable populations.

Recommendation 4:

We recommend adding the following definition to CEPA.

3(1) …"**Vulnerable populations**" means a person or member of a class of persons within Canada who is more vulnerable to the adverse effects a substance due to: age, stage of development, gender, pregnancy, health, medical condition, physical difference, income, race, national origin, behaviours, geographical location, work environment or control over their environment.

In order to operationalize the consideration of vulnerable populations throughout the Act, a number of amendments should be considered. An important starting point is to add to the mandatory duties on government set out in subsection 2(1) of CEPA the obligation to protect vulnerable populations through a slight change to paragraph 2(1)(j) of CEPA as shown in bold.

Recommendation 5:

We recommend adding the follow paragraph to CEPA.

2(1)(j) protect the environment, including its biological diversity, and human health **including that of vulnerable populations**, from the risk of any adverse effects of the use and release of toxic substances, pollutants and wastes;

We fully support of CELA's recommendation to amend the Act to specifically promote environmental justice and increase consideration of vulnerable populations.[13] In addition, we recommend that the aforementioned amendments also extend to the management and regulation of toxic substances. It is not enough to consider environmental justice and vulnerable populations while assessing substances, the requirement must also extend to the management and regulation of substances as noted in the submission of by Dr. Scott.[14]

[12] ECCC. Discussion Paper. CEPA 1999. Issues & Possibilities. 2016 p.11 Accessed at <http://www.parl.gc.ca/HousePublications/Publication.aspx?Language=e&Mode=1&Parl=42&Ses=1&DocId=8320863>

[13] CELA Submission dated June 16 2016. The proposed amendments listed under to sections 4(d) on page 5 of their submission that recommends changes to CEPA sections 46(1), 56, 76.1, 83, 93(1). <http://www.cela.ca/sites/cela.ca/files/CELAResponse-to-Questions-from-HC%20EnvSD%20June2016.pdf>

[14] Dr. Dayna Nadine Scott Submission dated August 3, 2016. Page 2.

2. Toxic is Toxic: Improving the Assessment of Substances

Over-reliance on Exposure in Assessing Toxicity

Section 64 defines the threshold for designating a substance as toxic under CEPA. It requires not just the hazardous nature of a substance to be considered, but whether that substance "is entering or may enter the environment in a quantity or concentration or under conditions that" cause a toxic effect, be it environmental or human health. From a human health perspective that means the designation of a substance as toxic is based on both the health effects it may cause, and the likelihood of sufficient exposure to that substance to cause those health effects.

This is an out-dated approach that fails to recognize the science of endocrine (or hormone) disrupting substances. Some endocrine disrupting chemicals or substances do not act in a linear dose fashion but are more toxic at extremely low doses or exposures. The WHO UNEP Review Endocrine Disrupting Chemicals State of the Science 2012 offers a comprehensive review of the science of endocrine disruptors.[15] The plastic additive, Bisphenol A (BPA), the class of flame retardants, Polybrominated Diphenyls Ethers (PBDEs), and the antibacterial chemical, Triclosan are all examples of known endocrine disruptors assessed under CEPA that are still found in everyday consumer products in Canada. Endocrine disruptors defy the old adage "the dose makes the poison" because they can have significant adverse effects at low levels of exposure. The timing of exposure to endocrine disrupting substances is also critically important. Exposures during "critical windows of vulnerability" such as infancy, puberty and pregnancy are particularly harmful. During these times there may be no safe thresholds.[16] As of June 2015 the Endocrine Disruption Exchange had identified nearly 1000 endocrine disruptors, many of which are found in everyday household items and consumer products.[17]

Case Study: Endocrine disruptors such as phthalates

Phthalates are a group of chemicals that can make products (usually plastics) softer and more flexible. Phthalates are used in a range of products, including polyvinyl chloride (PVC) plastic IV medical bags and tubes and shower curtains, school supplies, and cosmetics including nail polish and perfumes. Phthalates are not chemically connected with the plastic products that contain them, which means they can leach out of the products. Studies have linked some phthalates to hormone changes, lower sperm count, less mobile sperm, birth defects in the male reproductive system, obesity, diabetes, and thyroid irregularities.[18] Phthalates substances were selected for assessment based on the categorization process in 2006 and on information collected under phase 1 of the CMP. A proposed approach for assessing the cumulative risks of certain phthalates was published in August of 2015 and a draft screen assessment was promised for

[15] State of the science of endocrine disrupting chemicals – 2012 An assessment of the state of the science of endocrine disruptors prepared by a group of experts for the United Nations Environment Programme (UNEP) and WHO. 2012.< http://www.who.int/ceh/publications/endocrine/en/>

[16] Dayna Nadine Scott and Sarah Lewis, "Sex and Gender in Canada's Chemicals Management Plan" in Dayna Nadine Scott, ed, Our Chemical Selves: Gender, Toxics and Environmental Health (Vancouver: UBC Press, 2015).

[17] TEDX List of Potential Endocrine Disruptors <http://endocrinedisruption.org/endocrine-disruption/tedx-list-of-potential-endocrine-disruptors/overview>

[18] For example, Rolf U. Halden. Plastics and Health Risks. Annu. Rev. Public Health 2010. 31:179–94. Also see, Ioanna Katsikantami et al., *A global assessment of phthalates burden and related links to health effects*. Environment International. June 2016. In press.

2016 but has not yet been released,[19] although restrictions on phthalates in children's toys under the *Canadian Consumer Products Safety Act* were passed in 2011.

Dr. Scott recommended removing the words "is entering or may enter the environment in a quantity or concentration or under conditions that" from section 64 to so that the determination of toxicity is not dependent on exposure.[20] It is worth noting that there are examples of such an approach under the European Union's Registration, Evaluation, Authorisation and Restriction of Chemicals (**REACH**) regulations that are discussed further below.

We support this recommendation of Dr. Scott but have been advised that government is very reluctant to adopt a purely hazard based approach to assessing and managing chemicals before they have completed the assessment of the categorized existing substances under the CMP, scheduled to be completed in 2020.

As an alternative we recommend that exposure not be a factor in designating an endocrine disrupting substances as toxic given the extremely low doses that may result in harmful effects, especially during developmental windows of vulnerability during which there may be no safe dose. Section 3 should be amended to add a definition of an endocrine disruptor, and section 64 should be amended with the addition of a section on endocrine disrupting substances (shown in italics below).

Recommendation 6:

We recommend adding the follow definition and amendments to CEPA.

Section 3(1)… Endocrine disruptor is an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub) populations.

Section 64 For the purposes of this Part and Part 6, except where the expression "inherently toxic" appears *and except for endocrine disrupting substances*, a substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that

(a) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;

(b) constitute or may constitute a danger to the environment on which life depends; or

(c) constitute or may constitute a danger in Canada to human life or health

64(1) For the purposes of this Part and Part 6, an endocrine disturbing substance is toxic if it

(a) has or may have an immediate or long-term harmful effect on the environment or its biological diversity;

[19] Government of Canada. Phthalate Substance Grouping <http://www.chemicalsubstanceschimiques.gc.ca/group/phthalate/index-eng.php>

[20] Dr. Dayna Scott submission dated June 3, 2016. Recommendation 1 on page 9. Title: Brief to Standing Committee on Environment and Sustainable Development. Reforming the Canadian Environmental Protection Act: The assessment and regulation of toxic substances should be equitable, precautionary, and evidence-based.

(b) constitutes or may constitute a danger to the environment on which life depends; or

(c) constitutes or may constitute a danger in Canada to human life or health

Section 77 lays out the measures that can be taken as a result of substance screening assessment including do nothing, or adding the substance to the priority substance list or the toxic substance list. In order to ensure that endocrine disrupting substance are regulated, we recommend that doing nothing should not be an option once an endocrine disrupting substance is found to be toxic.

Obligation to Demonstrate a Benefit

In addition, section 64 should include an obligation to demonstrate sustainability benefit of permitting new substances and organisms, it is not enough that 'risk is deemed manageable', need net benefit, net contribution to sustainability from societal perspective.

If the risk assessment focus is maintained the Act must more clearly constrain the Ministers to allowing only those types of activity that have been subject to a risk assessment. That is, if a substances that have been assessed and found not to pose a hazard then it can be added to the domestic substance list and used broadly (subject to any restrictions the Ministers deem necessary). But if only a very specific use of the substance is considered and it is on that basis that the risk is deemed low and it is not "CEPA-toxic' (e.g. high hazard but low chance of exposure given the particular risk assessed) the Act should be clear that the Ministers' approval of uses of the substance are restricted to those uses that have actually been found not to make it toxic.

> **Recommendation 7:** Section 64 should include an obligation to demonstrate sustainability benefit of permitting new substances and organisms. In addition, the Act must more clearly constrain the Ministers to allowing only those types of activity that have been subject to a risk assessment.

Address Multiple Chemical Exposures and Cumulative Effects

The one-by-one approach to assessing and managing substances (or sometimes substance classes) ignores the reality that there are tens of thousands of chemicals in use. Through the use of personal care products and cosmetics alone it is estimated that women are exposed to 169 chemicals per day.[21] Chemicals can interact to cause synergist or cumulative effects, or effects not produced in isolation. It is possible to account for some cumulative impacts based on the potential for chemicals to have similar toxic effects or action such as been proposed for the phthalates review. The *Pest Control Product Act* (**PCPA**) contains explicate language directing such analysis for pesticides with a common mechanism of toxicity. Amendments to CEPA regarding the issue of complex mixtures and cumulative effects were recommended in by the Standing Committee on Environment and Sustainable Development pursuant to the last CEPA review.[22] The Act should be amended to require investigation of multiple chemical exposures and cumulative and synergistic effects, in determining how to regulate a toxic substance.

[21] The Guardian. Not so pretty: women apply an average of 168 chemicals every day. April 30, 2015. <https://www.theguardian.com/lifeandstyle/2015/apr/30/fda-cosmetics-health-nih-epa-environmental-working-group>

[22] See recommendation 13.

Recommendation 8: Amend CEPA to require the investigation of chemical mixtures and cumulative effects of substances with common toxic mechanisms or effects.

No Toxic Substance List Splitting

ECCC proposes to split Schedule 1 of CEPA 1999 into two separate lists in section 2.8 of the discussion paper on issues and possibilities – a virtual elimination list and an "other substances" list.

The virtual elimination list provision of CEPA has been a failure with only two substances added to the list in 15 years. But the failure to properly utilize the virtual elimination list should not be a reason to spilt Schedule 1 – The Toxic Substance List – into two separate list and in essence creating a two-tiered system to listing toxic substances.

Instead, ECCC and Health Canada (**HC**) should has proposed a fix for its long-standing challenges in implementing virtual elimination. Technical difficulties with establishing the "level of quantification" under section 65 has previously been identified as a key barrier to its ability to implement the virtual elimination scheme. Rather than fundamentally re-write that scheme, the Committee would do better to recommend clarifications or exceptions to the "level of quantification" test; for example, in the public consultations on the Act a decade ago, many environmental groups indicated that not every substance may need a level of quantification. This nuanced approach would be more targeted to the actual technical challenge at issue.

3. Getting to Banned: the Need for Fast and Effective Regulation of Toxic Substances

Re-assessment of Existing Substances including Substances of Very High Concern

CEPA does not provide a clear approach to updating assessments to take into account new scientific evidence, or to update exposure estimates. Consequently, many assessments (and the corresponding risk management strategies) are now out-dated.

Case Study: The need to reassess Siloxane D5

In 2009, Environment Canada recommended that Siloxane D5 be added to the toxic substance list based on concerns that it "was entering the environment in a quantity or concentration or under conditions that may have an immediate or long-term harmful effect on the environment or its biological diversity", section 64(a). After this, at the request of an industry association, the federal government appointed an independent Board of Review to reassess the merits of the proposed listing. In 2011, the Board of Review issued its final report, "ultimately concluded … that the substance does not pose a danger to the environment for both current and future uses" due to limited evidence of bioaccumulation. Absent evidence of bioaccumulation, or evidence that concentrations had been rising or would rise in the future, the Board concluded there would not be harmful effects. Thus the Minister of the Environment removed Siloxane D5 from Schedule 1. As a result, Siloxane D5 is not legally listed as a toxic substance in Canada.

A December 2015 study published in the journal Environmental Pollution in 2016, co-authored by an Environment Canada research scientist, found Siloxane D5 in Great Lakes fish.[23] Only 5 years after the Board of Review recommendation not to list Siloxane D5 under Schedule 1, evidence indicates the substance is accumulating in Great Lakes fish at levels that should be of concern, and merit a reconsideration of the decision.

Europe moved to address Siloxanes D4 and D5 sought use-specific regulatory restrictions on Siloxane D5 (and also D4) for personal care products, that are washed off concluding that "restriction of the use of siloxane substances D4 and D5 in "wash-off" personal care products should enter into force in two years."[24]

As revealed in the response to the Ecojustice and CELA petition to the Commissioner of the Environment and Sustainable Development (**CESD**), Environment Canada and Climate Change (**ECCC**) has no final procedure for reviewing decisions that lead to bans and restrictions of substances in other jurisdiction[25] as required under section 75.[26] ECCC's recently proposed implementation policy for section 75 further demonstrates that this section of CEPA has largely been ignored by government.[27] Ecojustice provided extensive comments to government on the draft policy, noting in particular that the proposal leaves several gaps such that it fails to meet the Ministers' responsibilities under section 75. Section 75 lacks transparency, reporting requirements and is far too discretionary. In marked contrast, the *Pest Control Products Act* requires that approved pesticides be re-evaluated every 15 years and mandates special review of any ingredient banned by another Organisation for Economic Co-operation and Development (**OECD**) country.

Recommendation 9:

Amend Part 5 of CEPA to insert mandatory requirements for assessment, re-assessment, or review of risk management strategies, under the following circumstances:

- Another jurisdiction prohibits or significantly restricts the substance;
- The Minister has reason to believe that use of the substance in Canada has significantly expanded since the original assessment was completed;

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[23] Daryl J. McGoldrick, Elizabeth W Murphy. "Concentration and distribution of contaminants in lake trout and walleye from the Laurentian Great Lakes (2008- 2012)," in Environmental Pollution, Volume 217, October 2016, Pages 85–96

[24] SEAC concludes on UK proposal to restrict D4 and D5 in "wash-off" personal care products. Chemycal.com <http://chemycal.com/news/e045114a-1ab7-4aa6-bb9c-5739c907fd4e/SEAC_concludes_on_UK_proposal_to_restrict_D4_and_D5_in_wash-off_personal_care_products>

[25] Subsection 75(1) defines jurisdiction as government in Canada; or the government of a foreign state or of a subdivision of a foreign state that is a member of the Organization for Economic Co-operation and Development.

[26] Environment Canada's response refers to a proposed procedure that was published for public comment in 2005 but this procedure was never finalized. A copy of the draft procedure was provided to the petitioners but was not attached to the government's response posted on the CESD web site "on request" as shown at the very end of the response. See: Ecojustice and CELA. April 2014. CESD Petition 363. Federal government review of European Union decisions to ban substances for health and environmental reasons, in accordance with section 75(3) of the Canadian Environmental Protection Act, 1999. Accessed at <http://www.oag-bvg.gc.ca/internet/English/pet_363_e_39686.html>

[27] Implementing Section 75 of the CEPA, 1999. Draft for public comments. April 2016. Accessed at< http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=F251F2AB-1>

- New scientific findings respecting the substance's toxicity come to the attention of the Minister that could alter the outcome of the original assessment and/or necessitate changes to the risk management strategy.

Providing Canadians with the Ability to Request a Review of a Substance

There is no mechanism available to request a review of a substance under CEPA. Subsection 76(3) can be used to request that a substance be added to the priority substance list for assessment but given there has never been a priority substance list published under CEPA 1999, this section does not appear to be working. In addition, it cannot be used to request a review of a substance already on Schedule 1.

A provision should be added to enable any person to request a re-assessment of substances and review of the risk management measures. The PCPA contains a parallel provision in subsection 17(4). The PCPA allows for a request to be made to the Minister for a special review of a pesticide based on new scientific information. The PCPA could be a model for a similar provision in CEPA.

> **Recommendation 10**: provide a mechanism for a person to ask for a review of an existing substance including how it is managed based on new information.

A Hazard Based Approach for Substances of Very High Concern

Europe uses a hazard-based approach for Substances of Very High Concern (**SVHC**) under the REACH regulations reflecting the precautionary principle with intent to phase out or substitute these substances with safer alternatives. After a two-step regulatory process SVHCs may be included in the Authorization List and become subject to authorization. These substances cannot be placed on the market or used after a given date, unless an authorization is granted for their specific use, or the use is exempted from authorization. Substances with the following hazard properties may be identified as SVHCs:

- substances meeting the criteria for classification as carcinogenic, mutagenic or toxic for reproduction category 1A or 1B (CMR substances),
- substances which are persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), or
- substances identified on a case-by-case basis, for which there is scientific evidence of probable serious effects that cause an equivalent level of concern as with CMR or PBT/vPvB substances.

> **Case Study: The REACH Authorization Process**
>
> Almost 200 substances or classes of substance are listed on the REACH Authorization List and more are under consideration. Authorization establishes a reverse onus that forbids companies from using, placing on the market or importing these substances into the European Union (**EU**) after the date set unless authorization is granted. An April 2014 comparison of substances on the REACH Authorization List to Schedule 1 of CEPA (Toxic Substance List) found that many were

not listed under Schedule 1.[28] As disheartening as this comparison was it is even more so when considering that unlike the Authorization List under REACH, Schedule 1 is not a list of forbidden substances but merely a list of substances that have been determined to be toxic according to the CEPA section 64 definition and therefore subject to management measures. Frequently those measures are weak such as pollution prevention planning which requires the preparation of a plan but necessarily any reductions.

We recommend an approach similar to the of the EU's authorization process where existing substances of very high concern are banned unless the company that is using, placing on the market, or importing the substance can prove it is safe. If data is not provided to prove safety, then access to the market is denied and the substance must be sunset or phased out. Simply put, the EU uses a system of "no data, no market".

Recommendation 11:

Establish a system of sun-setting existing substances of very high concern similar to that of the authorization list process under REACH.

The precautionary principle must be applied when interpreting the result of a screening assessment as required under section 76 of CEPA. The application of the precautionary principle to the consideration of risk assessments allows the government to designate a substance as toxic and take preventative measures where there are threats of serious or irreversible damage even where there is a lack of full scientific certainty, as is often the case with respect to assessing effects on marginalized communities and vulnerable populations. The precautionary principle must be applied so that preventative measures can be taken even when the science is uncertain.

We strongly **oppose** the suggestion of industry representatives that the precautionary principle only apply at the point of regulatory decision making.[29] Many substances would never make it to the risk management stage if 100% certainty was required to show the substance represented a toxic risk. Such a change would vastly weaken the Act and impede pollution prevention, the primary purpose of the Act.

Reduce the Bioaccumulation Threshold

The *Persistence and Bioaccumulation Regulations* under CEPA set an unduly high bar for designating a substance as "bioaccumulative". The European Union and United States have lower criteria than Canada for designating a substance as "bioaccumulative". The criteria under Canadian law for designating a substance as bioaccumulative would result in a designation of "very bioaccumulative" in those jurisdictions. While we note that the Canadian bioaccumulative criteria are used to determine if a substance should be placed on a track for virtual elimination (when coupled with the assessment of the persistence of a substance), the same stringent criteria are also used in screening risk assessments under CEPA and under the CMP to determine if substances are toxic, or capable of becoming toxic. In 2013 Ecojustice and CELA used the CESD petition process to request that the threshold be reviewed and

[28] CESD Petition 363. Ecojustice and CELA. Federal government review of European Union decisions to ban substances for health and environmental reasons, in accordance with subsection 75(3) of the *Canadian Environmental Protection Act, 1999*. < http://www.oag-bvg.gc.ca/internet/English/pet_363_e_39686.html>
[29] Canadian Cosmetic, Toiletry and Fragrance Association Submission in the section titled, "Use of Science and Weight of Evidence" referred to the decision of the Siloxane D5 Board of Review.

lowered but the request was denied.[30] The discrepancy in the Canadian threshold for labelling a substance as bioaccumulative compared to other jurisdictions has significant implications for taking the necessary steps to manage chemicals. In Canada, control measures may not be considered if a chemical does not equal or exceed the excessively stringent criteria for bioaccumulation in the regulation.

In addition, the current bioaccumulation criteria were developed from the science of chemical bioaccumulation in fish through water contamination. As the science of bioaccumulation has progressed, researchers have demonstrated bioaccumulation and biomagnification in terrestrial and aquatic/marine birds and mammals through air inhalation and diet. This limitation impacted the 2006 assessment of Polybrominated Diphenyl Ether (PBDE) flame retardants leading to a formal objection to the regulation by Ecojustice (then Sierra Legal Defence Fund) on behalf of Environmental Defence, CELA and the David Suzuki Foundation.[31] The regulation needs to be modernized to include the assessment of these other forms of bioaccumulation and biomagnification.

Recommendation 12:

Amend the *Persistence and Bioaccumulation Regulations* to include bioaccumulation and biomagnification through air inhalation and diet and establish more precautionary thresholds for a determination of persistence or bioaccumulation in toxicity assessments of substances pursuant to CEPA. The Regulations have not been updated since they entered into force in 2000, and are now out of step with Europe and the US.

Improve Risk Management Timelines by Fixing the "CEPA - clock"

The Act requires that once the government has consulted on a substance assessment that they publish the proposed measures to be taken in an expeditious manner but is some cases there is a very long delay between the consultation on an assessment and publication of the proposed measures. The requirements of CEPA to move expeditiously from assessment to proposed measures, once comments have been considered, must be followed at all times.

Case Study: Triclosan still waiting for action in Canada

Triclosan, found in products such as soaps and deodorants, was assessed to be toxic to the environment in a 'Preliminary Assessment Report' published in 2012.[32] Four years later, it has still not been added to Schedule 1, and a final risk management strategy has not been published. Consequently, the chemical, which the Canadian Medical Association has been calling for a ban on since 2009,[33] remains in hundreds of products sold in Canada. This lengthy delay is

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[30] Ecojustice and CELA. CESD Petition No 351. July 2013. Review of the Persistence and Bioaccumulation Regulations under the *Canadian Environmental Protection Act, 1999*. <http://www.oag-bvg.gc.ca/internet/English/pet_351_e_39088.html>

[31] Notice of Objection. Polybrominated Diphenyl Ethers Regulations, *Canadian Environmental Protection Act*, 1999 (CEPA 1999) <https://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=6E52AE02-1>

[32] Triclosan CMP page. <http://www.chemicalsubstanceschimiques.gc.ca/plan/approach-approche/triclosan-eng.php>Environment Canada and Health Canada Canada Gazette Posting on the Triclosan Screening Assessment <http://www.gazette.gc.ca/rp-pr/p1/2012/2012-03-31/html/notice-avis-eng.html#d107>

[33] Globe and Mail. Experts concerned about dangers of antibacterial products. August. 21, 2009 <http://www.theglobeandmail.com/life/health-and-fitness/experts-concerned-about-dangers-of-antibacterial-products/article4282875/>

all while other countries have moved ahead with their own bans. A ban of triclosan in 'biocidal products' like and hand and body washes was announced in 2015 by the European Union, and in September 2016 the US Food and Drug Administration announced a ban of triclosan, and 19 other active ingredients including the triclosan replacement triclocarban, in antiseptic washes including consumer hand and body soaps.

CEPA currently requires that when a substance has been assessed and proposed for addition to the List of Toxic Substances, a risk management strategy proposing a regulation or other instrument "respecting preventative or control actions" be developed within two years (subsection 91(1)) and finalized within the ensuing 18 months (subsection 92(1)). In practice, risk management strategies frequently propose multiple actions, but ECCC and HC consider the CEPA requirements met if just one instrument has been finalized within the prescribed 42-month period. As in the case of PBDEs (see case study below), this can lead to unacceptable delays in implementing crucial aspects of risk management strategies. The language in the Act should be amended to specify to require all risk management regulations or instruments be proposed within two years and finalized within the ensuing 18 months. To encourage better follow through and greater transparency with respect to the implementation of the risk management strategies we recommend annual reporting.

Case Study: PBDEs, too slow to follow through with implementation

Polybrominated Diphenyl Ethers (PBDEs) are a class of brominated flame retardants once common in products such as furniture and electronics used in Canadian households. Studies have shown that exposure to PBDEs is associated with lower IQs in children, and the chemicals have also been shown to disrupt thyroid hormones. PBDEs were added to Schedule 1 in 2006 and banned from manufacturing in Canada in 2008, even though they were never manufactured in Canada. In 2010, Environment Canada posted a revised PBDE Risk Management Strategy that included matching existing European restrictions on DecaBDE in electronics and a ban on DecaBDEs in plastics and textiles, including imported, manufactured products. Only very recently have of some of these measures been implemented to meet international requirements, although there are still no restrictions on PBDEs in manufactured items, putting Canada years behind the European Union in regulating these toxic substances. [34]

Part 5 of the Act should be amended to ensure timely implementation of all aspects of risk management strategies. This flaw is easily corrected by simple changes to these sections that set out the CEPA - clock to ensure complete implementation of all risk management measures as shown using strikeout and italics below.

Recommendation 13:

91 (1) Subject to subsections (6) and (7), ~~a~~ *one or more* proposed regulation*s* or instrument*s* respecting preventive or control actions in relation to a substance shall be published by the Minister in the *Canada Gazette* within two years after the publication of the Ministers' statement under paragraph 77(6)(b) indicating that the measure that they propose to take, as

[34]Environmental groups on new flame retardant prohibitions: One step forward, still a long way to go <https://www.ecojustice.ca/wp-content/uploads/2016/10/Coalition-Final-Release-Federal-Flame-Retardant-Ruling-2016-10-06.pdf>

confirmed or amended, is a recommendation that the substance be added to the List of Toxic Substances in Schedule 1.

Publication of preventive or control actions

92 (1) Subject to subsection (2), ~~any~~ regulation*s* or instrument*s* respecting preventive or control actions in relation to a substance shall be made and published in the *Canada Gazette* within 18 months after the publication of the proposed regulation*s* or instrument*s* under subsection 91(1) or (6), unless a material substantive change is required to be made to it.

In section 2.11 of their discussion paper, ECCC proposed to weaken the CEPA - clock by aligning the Minister's obligation to propose and finalize risk management with the cabinet decision to add a substance to Schedule 1 rather then, as currently required under section 91, within two years of the recommendation to add a substance to Schedule 1. This proposal must be rejected as it will allow for further delay. On this point we fully support the submissions of Dr. Dayna Scott.

Require Timely Response to Notice of Objections

Similarly, the Act should be amended to prescribe a 90-day timeline for government response to Notices of Objection filed pursuant to subsection 332(2). This would prevent indefinite delays and help to make Notices of Objection a more effective mechanism for improving management of toxic substances.

Case Study: A two and half year wait for a rejection

Ecojustice (then Sierra Legal Defence Fund) submitted a Notice of Objection on behalf of Environmental Defence, CELA and the David Suzuki Foundation in February 2007 requesting a board of review of the proposed *Polybrominated Diphenyl Ethers Regulations* because it did not propose a ban on decaBDE. The objection cited recent scientific findings on bioaccumulation of decaBDE not considered by the government in developing the risk management approach. It took three and a half years to receive a response that denied the request for a board of review from the ENGOs.[35] By that time the response to the objection was received, ECCC had re-assessed the science through an Ecological State of the Science Report on decaBDE, verifying the bioaccumulation of decaBDE and the need for a ban as was requested in the ENGO objection two and a half years earlier.

Recommendation 14: Amend CEPA to prescribe a 90-day response time limit for Notices of Objection.

4. The 'Everyday' Toxic: Effective Management of Chemicals in Cosmetics and other Consumer Products

Improve Regulation of Toxics in Products under CEPA and Related Acts

There has been a significant shift in sources of pollution in Canada in recent decades. The traditional focus of regulatory activity under CEPA was the control of emissions from domestic industrial activity. Canadians and their environment are now increasingly exposed to toxic substances in everyday items

[35] CEPA registry page on Notices of objection. <https://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=6E52AE02-1>

such as cosmetics and imported manufactured goods. CEPA and related Acts need to adapt to this new reality.

Insufficient action has been taken to address toxic substances in consumer products such as cosmetics through CEPA and related legislation such as the *Canadian Consumer Products Safety Act* (**CCPSA**) or the *Food and Drug Act* (**FDA**). These Acts are not able to manage environmental impacts. Environmental impacts are often an early warning indicative of future human health effects that take longer for science to identify.

CEPA is the only of these Act that assesses and manages the risk of toxic substances to both the human health and environment. We risk losing needed environmental protections when the regulation of chemicals in products is left to the CCSPA and FDA under the purview of Health Canada.

Chemical substances in personal care products and cosmetics are assessed based on risk to the general population,[36] omitting highly exposed people like employees of hair or nail salons. Although the regulation of occupational exposures falls under different legislation, often the most highly exposed to chemical substances are women of child bearing age who may be pregnant and exposing their fetus.

Even if a substance used in a cosmetics or other consumer products is found to be toxic through the CMP based on the CEPA section 64 requirements, ensuring that risk management measures are put into place is left to Health Canada's Consumer Product Safety Program through Acts such as the CCPSA and FDA.

The Spring 2016 report by the CESD of the Office of the Auditor General of Canada, "found a number of information gaps that limited the Consumer Product Safety Program's ability to detect and assess risks to human health and safety posed by chemicals of concern in consumer products and cosmetics."[37]

Although the audit largely focused on Health Canada's enforcement, monitoring and other activities under the CCPSA, most concerning is the CESD finding "that that the mechanisms Health Canada had in place to measure results were not sufficient to verify the effectiveness of the Consumer Product Safety Program. Specifically, the Program could not demonstrate that it was achieving expected results in addressing or preventing dangers to human health and safety."

These findings show that reviewing and strengthening CEPA is just the start. Much more needs to be done to reduce the risks to human health and the environment from toxic substances in consumer products like cosmetics.

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[36]For example, while the August 2015 report titled, "Proposed Approach for Cumulative Risk Assessment of Certain Phthalates under the Chemicals Management Plan" will look at cumulative phthalate exposures is proposing to do so only for general population. <http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=723C9007-1#Toc011>. Similarly, the assessment of BPA additive under CMP examined exposures through food, packaging and container. It did not consider women plastic workers that have been found to be more highly exposed. Global News. Exposed to plastic fumes, women working in some factories have a 400% increased risk of breast cancer, study says. < http://globalnews.ca/news/1099930/experts-push-for-increased-protections-for-women-exposed-to-plastics-fumes/>

[37] 2016 Spring Reports of the Commissioner of the Environment and Sustainable Development Report 3—Chemicals in Consumer Products and Cosmetics < http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201605_03_e_41382.html>

Concerning is when restrictions or bans are put into place that only address a fraction of the products containing the chemical, such as the endocrine disrupting plasticizer Bisphenol-A (**BPA**) that is banned in baby bottles but still legally used to line food cans and to coat cashier receipts. Under the CMP, once a chemcial is assessed and the risk management strategy is finalized, it is like a 'box is checked-off' and ECCC and HC move on to the next chemical and the next assessment, even though there may be a need to revisit and consider additional restrictions based on science and data.

Case Study: BPA Insufficient measures

A screening assessment published in 2008 determined that **BPA** is toxic to human health and it was added to the toxic substance list under CEPA in October 2010. BPA was banned in polycarbonate baby bottles in March 2010 under the *Hazardous Products Act* which has since been replaced by the *Canadian Consumer Products Safety Act*. Although Canada was hailed a leader at the time, no additional mandatory measures have been taken to remove BPA from other consumer products and everyday items such as cashier receipts and food cans.

BPA is an endocrine disrupting chemical with estrogenic properties and is found in 94 per cent of Canadians aged 3 to 79 years according to the third Canadian Health Measures Survey (**CHMS**) 2012-13. Concentrations in the urine of Canadians are only slightly down from surveys conducted in 2007-09 and 2009-11.[38] It is not surprising that the most recent biomonitoring results show little change in BPA levels in Canadians since it was designated toxic and removed from baby bottles in 2010. This troubling finding indicates that improvements are needed to CEPA and related legislation, to close the gap between identifying, assessing, and eliminating toxic substances. Despite being found toxic, major sources of BPA exposure continue as it is still used as a liner in canned foods, and as an additive to thermal paper (cashier receipts). A recent study found much higher levels of BPA in the urine of cashiers,[39] a job often held by women of child-bearing age. A 2016 Environmental Defence study found BPA in 81 per cent of canned food.[40]

Dr. Miriam Diamond provided the following observation in her testimony before the committee on the BPA restrictions and fetal exposure through the mother:

> *This illustrates why we do need to take a precautionary approach. With respect to the life cycle of an organism, we need to be cognizant of the fact, for example, that endocrine modulation effects occur during fetal development, so what we have to do is to be protective of the mom. We can't actually put in provisions to be protective of the fetus; no, we're protective of mom. Was it enough to take bisphenol A out of baby*

[38] Health Canada. July 2015. Third Report on Human Biomonitoring of Environmental Chemicals in Canada, <http://www.hc-sc.gc.ca/ewh-semt/contaminants/human-humaine/chms-ecms-eng.php>

[39] Sophie, Ndaw; Aurélie, Remy; Danièle, Jargot; Alain, Robert. August 2016. Occupational exposure of cashiers to Bisphenol A via thermal paper: urinary biomonitoring study. International Archives of Occupational and Environmental Health. Volume 89 (Issue 6), pp 935-946.

[40] Environmental Defence. Buyers Beware. Toxic BPA & Regrettable Substitutes in the Linings of Canned Food. <http://environmentaldefence.ca/report/buyers-beware-toxic-bpa-regrettable-substitutes-in-the-linings-of-canned-food/> March 2016 >

bottles? That provision was not directed at protecting the mom, who could have elevated levels, and result in fetal exposure.[41]

Recommendation 15: The government must improve the linkages between CEPA and the other Acts that are used to implement risk management measures such as the CCPSA and FDA. The government must amend CEPA to improve the regulation of toxics substances in products to ensure protection of the environment and human health.

Accountability measures should be included in CEPA to ensure that all the risk management strategies flowing from an assessment under CEPA of toxic substances used or found in consumer products are brought into force and are effective, no matter which statutes the measures occur under.

Apply Environmental Justice to Risk Management

Using regulatory tools to eliminate toxic substances that cause cancer, are toxic to developing brains, and impact educational outcomes and reproductive health is a matter of fairness and is essential to protecting the right of all Canadians to live in a healthy environment. Even if a substance is found to meet the definition of toxic under CEPA, the risk management that follows is often insufficient, lacking enforceability, or takes far too long to implement to protect vulnerable populations.

Risk management measures fail to provide equitable protection to marginalized communities. For example, managing the risks of toxic substances in products by banning manufacturing but omitting measures to deal with existing products at the of end-of-life creates inequities when old consumer products containing banned or restricted chemicals end up in the second-hand market, as the case with toxic flame retardants in used furniture**.**[42] In addition, risk management measures often fail to take into account the increased susceptibility of certain populations, such as those suffering malnourishment due to poverty, to the adverse effects of exposure.

Case Study: Management measures lack environmental justice considerations

Toxic flame retardants in second-hand couch

Currently, with the uneven elimination of toxics from products, there are people who can afford the safer "green alternatives" and those who cannot. There are families who can buy the PBDE-free couch, and there are families buying the second hand couch that the wealthier family has discarded and bringing it home where the dust emitted will contaminate their indoor air, and potentially lower the IQs of the young children in the household, or affect the health of the adults. As discussed further below, the failure to manage the full life cycle of a product containing a toxic substance results in toxic substances, such as the flame retardant PBDEs that have been banned due to the risk they pose to human health, remaining in use through the used and second hand market. The 2010 Risk Management Strategy under CEPA committed to the "Development of a Risk Management Strategy for the Waste Sector Including PBDE-containing

[41] Dr. Miriam Diamond oral evidence provided to Committee on June 16th, 2016.
[42] M Murphy. Environmental Justice and Flame Retardants. October 2016. <https://endocrinedisruptorsaction.org/2016/10/14/environmental-justice-and-flame-retardants/>

Products" but still has not been provided.[43] Such a strategy, even if in place, may still not fully prevent unsafe products from entering the second-hand market, but inclusion of environmental justice principles would bring this type of issue forward forcing consideration of additional measures.

In addition, PBDEs and other persistent organic pollutants (**POPS**) like Perfluorinated Compounds (**PFCs**), used to make clothes water repellent and pans non-stick, pollute the Arctic. POPs and are found in the high fat country foods of Northern Peoples, disproportionately impacting the health of children and families in Arctic communities such as Nunavut.

The elimination of PBDEs and other neurotoxic and/or carcinogenic POPs from manufactured products throughout the lifecycle of the products is a matter of environmental justice and essential to fulfilling the right to a healthy environment.

Recommendation 16:

Risk management measures must consider environmental justice principles by ensuring that marginalized communities, such as low income or First Nations, are provided with the same level of protection from the adverse effects of the substances as other communities. Risk management must ensure that vulnerable populations, such as pregnant women and people with a pre-existing health conditions, are provided equitable protection from the adverse effects of the substance.

We support the recommendation of Dr. Scott to amend subsection 93(1) by adding a new subsection (b.1) to read: protection of a vulnerable population from substances specified on the List of Toxic Substances in Schedule 1.[44]

Under CEPA, the government can require emitters of toxic substances to develop and implement pollution prevention plans, or P3s, non-regulatory approach for reducing emissions. While P3s have been successfully implemented in some cases, in many others, P3s have underperformed because CEPA does not allow the government to establish benchmarks for pollution prevention. Enforcement provisions extend only to the development and implementation of the P3, without regard to the effectiveness of the plans in reducing toxic emissions.

Recommendation 17:

Amend CEPA to ensure Pollution Prevention Plans are effective and to improve accountability for results. The Minister should be required to prescribe emission reduction targets rather than establish acceptable concentration limits and to evaluate whether Pollution Prevention Plans are achieving the targets.

[43] See section 8.5 8.5 Development of Federal Environmental Quality Guidelines (FEQGs) for PBDEs. RISK MANAGEMENT STRATEGY FOR POLYBROMINATED DIPHENYL ETHERS (PBDEs). 2010. Chemicals Sectors Directorate Environmental Stewardship Branch <http://publications.gc.ca/collections/collection_2014/ec/En14-115-2010-eng.pdf>

[44] Dr. Dayna Scott written submission to the Committee dated August 3, 2016 commenting on two written submissions by CELA.

Require Mandatory Alternatives Assessment and Safer Substitution

CEPA should be updated to require an alternatives assessment, a process for identifying, comparing and selecting safer alternatives to toxic chemicals to reduce risks to humans and the environment by identifying safer choices. An alternatives assessment under CEPA can support the successful phase out of toxic chemicals through the phase in of safer substitutes and prevent the replacement of one toxic chemical with another equally or even more toxic chemical.

The ECCC Discussion Paper is silent on the need for alternatives assessment and the application of the safe substitution principle when assessing and managing substances under CEPA. Alternatives assessment and the safe substitution principle were discussed in the previous parliamentary reviews of CEPA. The House Committee and the Senate Committee recommended the adoption of alternatives assessment and application of a safe substitution principle in risk management decisions.[45] In addition, numerous witnesses testifying on behalf of environmental organizations, as well as legal experts, academics and labour representatives have recommended CEPA 1999 to be amended to require alternatives assessment and safe substitution.

> **Recommendation 18**: We fully support the submission and recommendations of CELA on alternatives assessment.[46]

5. Tell Us More and Let Us Comment: Transparency and Public Engagement

Providing Transparency and Public Consultation for New Substances and Living Organisms in Parts V and VI

A. Public Notice of Risk Assessment Processes

Two of CEPA's overarching objectives are to promote transparency and public participation in decision-making. When it comes to CEPA's regime for conducting risk assessments of substances and living organisms not on the Domestic Substances List (**DSL**), these objectives are not presently reflected. The risk assessment process is opaque. The public has no way of knowing that a given substance or living organism is being assessed by government until the assessment is completed and the substance is placed on the DSL or the Ministers take steps to regulate the manufacture, import, or use of the substance or organism using tools under subsections 84(1) or 109(1) or through the issuance of a Significant New Activity Notice under subsections 85(1) or 110(1). Finding out that a risk assessment has already been conducted and a decision already made by the Ministers with respect to how to regulate a given substance or organism does little to promote transparency, public participation, or perceptions of legitimacy amongst members of the public.

> **Case Study: AquAdvantage Salmon**

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[45] 2007 House Standing Committee Report at pp. 38-39 and Recommendation 26. Senate Standing Committee on Energy, the Environment and Natural Resources, the *Canadian Environmental Protection Act, 1999.* Rx: Strengthen and Apply Diligently (Senate of Canada, March 2008), at pp. 39-42 and Recommendations 22 and 23. <http://www.parl.gc.ca/Content/SEN/Committee/392/enrg/rep/rep06mar08-e.pdf>.

[46] CELA submission dated June 20, 2016. Re: 2016 CEPA Review-CELA Supplementary Submissions to Standing Committee Arising from May 19, 2016 Appearance – Alternatives Assessment.

When AquAdvantage Salmon (**AAS**) – a genetically modified Atlantic salmon organism manufactured by Aquabounty Canada Inc. – was being assessed under CEPA, a number of organizations concerned about the environmental risks posed by the organism wrote to the government multiple times inquiring as to whether or not a review was taking place. AAS was to be the first genetically modified animal manufactured for food production globally and it was "designed" to grow much faster than native Atlantic salmon. Interested groups raised concerns about the risk these genetically modified salmon could pose to native endangered Atlantic salmon should they escape into the wild. The Ministers would not disclose whether or not a risk assessment of AAS was being conducted, so the first time the public became aware of the review was in November 2013 when a Significant New Activity Notice was published in the *Canada Gazette* setting out a range of approved uses of the organism.

One way to improve these parts of CEPA would be to require notice in the *Canada Gazette* when a person submits a notification under subsections 81(1) or 106(1). That way, interested members of the public would know that a given substance or organism is being assessed. Under the existing framework, even when individuals and groups concerned about a specific substance or organism specifically ask if a risk assessment is being conducted, they are refused an answer.

Recommendation 19:

81(1.1)/106(1.1) The Minister shall publish in the *Canada Gazette* a notice stating the name of the person who has submitted a notification and the name of the living organism/substance to which it applies.

To promote public participation in decision-making, CEPA should be amended to establish a minimum 30-day public comment period following notice of a notification under subsections 81(1) or 106(1) regarding new a substance or organism. Such a public comment period would not significantly delay the risk assessment process. In instances where there is an urgent need for a new substance or organism to be manufactured or imported (e.g. for public health purposes), a provision could be enacted setting out that where the Ministers believe that it is in the public interest to proceed urgently with a risk assessment, the 30-day public comment period does not apply.

Recommendation 20:

81(1.2)/ 106(1.2) Within 30 days of publication of a notice under subsections 81(1.1)/106(1.1) any person may file with the Minister comments with respect to the notice and the toxicity of the substance/organism, and those comments received shall be considered by the Ministers in their assessment pursuant to subsections 83(1)/108(1).

81(1.3)/106(1.3) Where it is in the public interest to do so, the Minister may waive the comment period set out in subsections 81(1.1)/106(1.1) and publish the reasons for the Minister's determination that the waiver of public comment requirements is in the public interest.

While a 30 day comment period is likely sufficient in many instances, it is worth noting that where a new type of activity is proposed for the first time (e.g. manufacture or import of a new genetically modified animal), in order for consultation to be meaningful, the public should have a longer opportunity to provide comments on new policy issues and implications of such a new activity. Where a plant or

animal is of particular significance to Indigenous communities (e.g. Atlantic salmon), the government should ensure that interested First Nations communities in particular are meaningfully consulted.

In order to make the above-noted public comment mechanism meaningful, interested members of the public should be able to access the information submitted by a notifier under subsections 81(1) or 106(1). When submitting information, notifiers should be advised to clearly mark confidential business information so that the remaining portions of the information can be made available to the public promptly upon request.

B. Waivers of Information Requirements

There is one existing mechanism in Parts 5 and 6 for public notification prior to the conclusion of a risk assessment. Subsections 81(9) and 106(9) state that where the Minister waives information requirements, notice must be posted in the *Canada Gazette*. But the Act is silent with respect to the timing of that Notice. This has led to troubling results. Until February 2014, after the practice was subject to a legal challenge,[47] no notices under these sections had been posted since March 2008. Publication years after the fact of notice that a waiver of information requirements has been granted does little to promote transparency. It is questionable whether such notice has any utility at all.

To ensure notice of waivers of information requirements are published in a timely manner, the Act should be amended to state that a waiver of information requirements is effective on the date that notification is published. This would promote transparency without adding significant delay to the risk assessment process. In order to avoid delay, the Ministers could consider waiver requests in a timely manner when they are submitted rather than waiting to grant such requests until later in the risk assessment process. This would also make such a notice meaningful by ensuring publication happens before a risk assessment has been completed.

Finally, the present requirement in subsections 81(9) and 106(9) is only that the notice contain "the name of any person to whom a waiver is granted and the type of information to which it relates". This results in a vague and largely unintelligible notices. It is unclear what organism or substance a given notice relates to and, given the lack of time requirements in the current act, the date on which a waiver was granted. The public cannot determine whether a notice applies to a substance or organism currently undergoing assessment or one that underwent assessment months or years ago.

> **Recommendation 21:**
>
> **81(9)/106(9)** The Minister shall publish in the *Canada Gazette* a notice stating the name of any person to whom a waiver is granted, the type of information to which it relates, and the substance/living organism to which it relates. The waiver of information requirements takes effect on the date of publication of notice in the *Canada Gazette*.

When a waiver of information requirements is granted on the basis that "a living organism is to be used for a prescribed purpose or manufactured at a location where, in the opinion of the Ministers, the

[47] In December 2013 Ecology Action Centre and Living Oceans Society, represented by lawyers from Ecojustice, sought judicial review of the Ministers' approval of AquAdvantage Salmon. The Federal Court upheld the six month delay in posting notice of a waiver of information requirements in that case but indicated that the government's previous practice of waiting years to post notice of waivers of information requirements frustrated the purposes of the Act.

person requesting the waiver is able to contain the substance/living organism so as to satisfactorily protect the environment or human health" pursuant to section 80(b)(b)/106(8)(b), the Act then prohibits the person to whom the waiver is granted from using, manufacturing, or importing the substance/organism unless it is for that prescribed purpose or at the location specified in the waiver request, as the case may be (section 81(10)/106(10)). In effect, what this means is that where a person requests a waiver of information requirements on the basis that it will keep a given substance or organism contained at a specific location, that person can then only use the substance or organism at that location.

What this section does not specify is what other persons can and cannot do with the substance or organism. Consistent with the legal argument advanced by the Ministers before the Federal Court of Appeal, that Court recently interpreted the provision as nonetheless allowing other persons to use an organism subject to a section 106(8)(b) waiver at unspecified and unlimited facilities across the country so long as the other terms of the applicable Significant New Activity Requirements are met. This means that while the person who goes through the regulatory approval process (in the case noted above, Aquabounty) is subject to automatic limitations necessary to protect the environment (i.e. containment at a specified facility pursuant to section 81(10)/106(10)), other persons who have not been subject to the approval process are not subject to those restrictions with respect to the organism (i.e. other persons can use AAS for commercial grow-out at contained facilities whereas Aquabounty can only manufacture or use AAS at its one PEI facility).

The reason that persons other than the person who submitted the waiver request may be in possession of the substance or organism without having submitted a notification of an intent to manufacture/import pursuant to section 81(1)/106(1) is that CEPA allows a notifier to transfer possession of the substance/organism pursuant to 81(5)/106(5). The Act should be clarified so that where a person is granted a waiver pursuant to section 81(8)(b)/106(8)(b) and then transfers the right or privilege in relation to that substance/organism to another person, that other person is still subject to the restrictions set out in section 81(10)/106(10).

Recommendation 22:

81(10)/106(10) Where the Minister waives any of the requirements for information under paragraph (8)(b), no person shall use, manufacture or import the substance unless it is for the purpose prescribed pursuant to regulations made under paragraph 89(1)(f)/114(1)(f) or at the location specified in the request for the waiver, as the case may be.

C. Significant New Activity Notices

After a risk assessment under subsections 83(1) and 108(1), where the Ministers are of the view that the proposed use of a substance or living organism does not render that substance or living organism toxic, but that a significant new activity in relation to that substance or living organism may result in entry or release into the environment that poses quantitatively or qualitatively different environmental risks, the Minister may publish a notice indicating that subsection 81(4) or 106(4) applies with respect to the substance. The notice indicates by inclusion or exclusion the significant new activities in relation to the substance in respect of which subsections 81(4) or 106(4) apply (see subsections 85(3) and 110(3)).

Once a substance or organism is placed on the DSL, the subsection 85(4)/110(4) Significant New Activity Notice ceases to apply. Under the current Act, there are no explicit constraints on the Minister's discretion as to whether to issue a Significant New Activity Notice once that substance or organism is placed on the DSL (see subsections 87(3) and 112(3)). The Act should be clear that where a pre-DSL Significant Activity Notice is issued under subsection 110(1)/85(1) and an organism or substance is subsequently added to the DSL, the Minister must publish a Significant New Activity Notice that is at least as protective of the environment as the pre-DSL Notice.

Recommendation 23:

87(3.1)/112(3.1) Where a notice has been published under subsection 85(1)/ 110(1) and a substance/living organism is subsequently added to the Domestic Substances List, the Minister shall publish a notice under subsection 87(3)/112(3) that is at least as protective of the environment as the subsection 85(1)/110(1) notice in relation to the substance/living organism. That notice shall be published concurrently with the addition of the substance/organism to the Domestic Substances List.

The regulatory schemes set out in Parts 5 and 6 include provisions that distinguish between "use", "manufacture", and "import" of a substance or organism. This makes good sense given that manufacture and import will be particularly relevant where an organism or substance is not presently in Canada, whereas use becomes relevant once the substance or organism is present in this country. However, with respect to animate products of biotechnology, greater certainty is needed in the Act with respect to "use" given that some uses of an organism (e.g. use of adult organisms to create eggs/offspring) cannot be practically distinguished from "manufacture." The presumption underlying section 110(3) Significant Activity Notices is that a range of uses of the organism are permitted but, until the organism is placed on the DSL, persons who wish to manufacture or import the organism must notify the Ministers pursuant to section 106(1), leaving a potentially significant loophole. Depending on the wording of the Significant New Activity Notice, persons may effectively be permitted to "use" adult organisms to create eggs/offspring without triggering the duty to notify the Ministers of an intent to manufacture pursuant to section 106(1).

Case Study – AAS SNAc

The Significant New Activity Notice in relation to AquAdvantage Salmon published November 23, 2013 permits a range of "uses" of the organism. Because AAS is not listed on the DSL, section 106(1) mandates that any person who wishes to manufacture or import AAS must first provide the prescribed information, accompanied by the prescribed fee and the period for assessing the information under section 108 must have expired. With respect to AAS, "manufacture" refers to the production of triploid AAS eggs. Nonetheless, the Significant New Activity purports to permit any person to "use" adult non-triploid (i.e. fertile) AAS within a contained facility for producing triploid, all-female AAS. This situation leaves significant uncertainty regarding the activities in relation to AAS that are and are not permitted in Canada without requiring section 106(1) notification.

Recommendation 24

Amend section 106(4) to state: "For greater certainty, no person shall use the living organism to create or manufacture offspring unless that person has complied with (a) and (b) above.

Improving the National Pollutant Release Inventory

The National Pollutant Release Inventory (**NPRI**) is a database operated by the Government of Canada. It is a publically accessible database containing volumes of pollutants released on a facility-by-facility basis for major polluters across the country in a wide range of industries.

The NPRI began in 1993 without legislation in the wake of the UN Conference on Environment and Development in Rio in 1992. Similar pollutant registries exist in other countries such as the United States, the United Kingdom and Australia. The basic concept behind the creation of national pollutant release inventories was to promote transparency about pollution problems. Ideally, such transparency would result in both market-based voluntary and enforcement based responses to decrease pollution.

A. Legislated Requirements

The NPRI was eventually covered in legislation by sections 46-53 of CEPA 1999. The legislation itself does not spell out the operation of the NPRI database. Section 46 empowers the Minister to require information to be provided by any person for the purpose of creating an inventory of data by way of publication of a notice in the *Canada Gazette*. Section 48 requires the Minister to establish a national inventory of releases of pollutants using the information collected under section 46. Section 50 requires the Minister to publish the national inventory of releases of pollutants "in any manner that the Minister considers appropriate."

B. Typical Reporting Requirements

Notices published under section 46 of CEPA typically require facilities with more than 10 full time employees to report. Reporting is required on a substance-by-substance basis where thresholds are exceeded for the quantity and concentration manufactured processed or otherwise used or the quantity released. The "core substances" are reportable where the 10 tonne/1 per cent concentration use threshold is met. For other substances (parts 1B, 2, 3, 4, and 5) lower mass thresholds or specified activities are used.

Around 8,000 facilities submit substance reports on 342 designated substances to NPRI annually. The majority of these facilities release criteria air contaminants (58.2 per cent) and a large percentage also release tailings (13.2 per cent).[48] Both the number of substances and the number of facilities subject to reporting has generally increased over time.

Environment Canada has interpreted section 46 to provide only a requirement to provide data that is already available to the operator, and not the creation of new environmentally relevant monitoring or reporting data. The NPRI is entirely reliant on self-reporting by polluters.

[48] Environment Canada, *Canadian Experience* (May 7, 2014) https://www.epa.gov/sites/production/files/2014-10/documents/bk1_wed_8_rosenberger_0.pdf at 10.

C. Nature of the NPRI Reporting Data

NPRI reporting consists of annual average mass for each required pollutant on a per facility basis. The database is searchable by facility and is accessible online.

D. Challenges with using NPRI Data to promote environmental change

Fundamental challenges remain with the reliability, utility, accessibility and environmental relevance of NPRI data. The logic of the employee threshold and the substance mass thresholds/annual average mass reporting from an environmental perspective is not always evident.

E. Reporting Thresholds and Related Data Outputs Lack Environmental Relevance

An ideal approach to reporting would start with environmental objectives and establish policy-relevant thresholds for harm to human health, and environmental components. Reporting would then have the aim of identifying whether those thresholds were met or exceeded so that reporting could inform policy and enforcement decisions. This is particularly the case for environmental "hot spots" where the cumulative effects of pollution from a variety of sources is a concern.

While an arbitrary employee and mass threshold criteria for reporting may be administratively convenient for Environment Canada and industry for assessing reporting requirements, it is not clear that the advantages of this approach outweigh the disadvantages for producing environmentally relevant and accessible information.

In many sectors and for many substances, alternate reporting thresholds have been adopted to try to achieve improved reporting. For example, in 2002 the employee threshold was replaced with a flow threshold for municipal wastewater. While commendable, this threshold is not designed to cover the vast majority of wastewater systems in Canada and remains orders of magnitude higher than the threshold for reporting under the federal *Fisheries Act*. Further it does not include all available data from provincial reporting requirements. These unnecessary gaps in NPRI reporting for municipal wastewater systems that are typically subject to existing reporting requirements at the federal and provincial level is a concern.

The NPRI database produces an annual average mass figure per facility and per contaminant. However, the environmentally relevant releases may relate more to narrow time windows of higher releases. The annual average mass figure is heavily influenced by amount of time the facility is on or offline. A poorly functioning facility may have major environmentally significant spills (or flaring) followed by a period of downtime for repairs or inspections, yet for the year in question it could show a decrease in the total annual average mass of releases due largely to the amount of offline time. The data is not provided on a per-operating-day basis to control for shutdowns and is not broken down to environmentally relevant timeframes in the case of short-term spills to air, land or water. Accordingly, the data tell us little about the environmental impacts of the facilities in situations of short-term acute increases in pollution, and tell us little about the environmental performance of the particular facility.

There is reason to suspect that spills are not consistently included in the reported NPRI data. On its face, the notice does not exempt spills data from NPRI reporting. However, there is little transparency around whether spills are actually reported by a facility to NPRI. We have noted some instances where

spills do not appear to have been included. Under section 201 of CEPA, spills must be reported to Environment Canada, but it is not clear that such reports make their way into the NPRI database.

The annual average mass of pollutant released is not equivalent to the level of exposure in the community or environment. When a substance is released into the air or water from an industrial point source, it is diluted and disperses. The actual concentrations that reach people or organisms depend on the environmental conditions into which the substance is released. Releases also mix with pollution from other sources that do not report to NPRI such as vehicles.

The overall toxicity of releases is not tracked through NPRI reporting. The cumulative risk from chemical mixtures that have additive or synergistic effects is not identified. This limitation makes the information difficult to use for medical researchers who endeavour to compare emissions with health outcomes.[49]

The difficulty in accessing environmentally relevant information for public health protection purposes from NPRI data is detailed very clearly in a report to Toronto City Council.[50] The conclusion in Toronto was that a reporting by-law was needed to fill the gap in NPRI data and provide environmentally relevant information for public health purposes. Toronto now has a ChemTRAC database that provides more comprehensive reporting information in that City, from many smaller facilities that are not included in the NPRI.

F. Consistency and Quality Assurance is Lacking

CEPA does not require a specific methodology for reporting various types of emissions. Guides released for reporting permit reporting based on self-estimates, that may never be validated by real-life monitoring and emissions data.

Under the current reporting requirements, facilities select a method of estimation from a list of allowable methods, including direct measurements, sample testing, mass balance, engineering estimates and emission factors (formulas for estimating emissions). Facilities are required to use direct measurements to report to the NPRI only when these measurements have been required under other legislation. Environment Canada does not require that reporting facilities conduct direct measurements for the sole purpose of reporting to the NPRI and interprets section 46 such that it cannot require this.

The use of emissions factors and estimation methodologies for leaks from equipment, pipelines, seals, valves and other sources which are additional to the main emissions sources in facilities is of particular concern. It has been previously identified that emissions factors and estimation methods for such emissions may be inaccurate.

Estimation methods can vary by type of substance being measured and by operational processes of the facility. Facilities may use any of the six allowable methods to estimate how much of a particular substance is released, transferred, disposed of, or recycled. Facilities may change estimation methods year-over-year making it difficult or impossible to compare annual total average emissions. As each facility in a sector may use a different methodology (as well as have different numbers of operating

[49] Osnat Wine et al, "Using pollutant release and transfer register data in human health research: a scoping review" (2014) 22(1): 51-65 Environmental Reviews. http://www.nrcresearchpress.com/doi/pdf/10.1139/er-2013-0036

[50] Toronto, Staff Report, *National Pollutant Release Inventory: Toronto's 2006 and 2007 Annual Reports* (May 29, 2009). http://www.toronto.ca/legdocs/mmis/2009/pe/bgrd/backgroundfile-21651.pdf

days, or volume of material processed) it is difficult or impossible to compare pollution control performance by facility.

Accordingly, there is a real potential for inaccuracies and under-reporting. The use of estimation methods may be justified where potential limitations in monitoring and testing equipment capabilities for some processes and substances could otherwise result in under-reporting. However, the trade-off in using estimates is that it can result in inaccuracies. The reliability of estimation methods has been brought into question in many cases. Environment Canada has no program to validate the efficacy of allowable estimation methods for self-reporting, or to verify that such reporting is accurate through monitoring. Because Environment Canada never requires additional monitoring to take place, there are likely many instances where more accurate monitoring methods could be used instead, but are not.

Case Study: Underreporting to the NPRI

An Ecojustice petition[51] to the CESD highlighted the issue of underreporting of fugitive emissions such as the carcinogenic substance benzene from the petroleum sector facilities. Studies using Differential Absorption Light Detection and Ranging (**DIAL**) technology in Alberta measured emissions 15 times higher than the emissions factors method used for reporting to the NPRI.[52] Even with this information ECCC did not commit to a review of the use of emissions factors that result in underreporting of pollutant releases from industrial facilities to the NPRI.

The exclusion of facilities below the reporting threshold is also a major concern. There is not always accessible data related to the possible emissions from non-reporting facilities, their locations, etc. such that researchers can reliably estimate them.[53] A 2013 study by Environment Canada found wide ranging underreporting from a variety of sectors in the 2008 reporting year.[54]

The Commissioner of the Environment and Sustainable Development has noted that because facilities are not required to carry out additional monitoring or measurement, there is little incentive for facilities to improve data quality.[55] Further, Environment Canada does not routinely conduct on-site visits to verify facilities' data input and, as a result, there is limited on-site checking of data quality. For example, each year the Department visits an average of about 30 of the thousands of reporting facilities. Furthermore, the Department does not require auditing, third-party verification or other forms of professional certification on pollutant release and transfer data. Efforts to ensure that facilities comply focus largely on having them submit reports on time.

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[51] Petition 368. Ecojustice. July 2014. Use of published emissions factors by facilities in National Pollutant Release Inventory.

[52] Allan K. Chambers, Melvin Strosher, Tony Wootton, Jan Moncrieff, and Philip McCready. Direct Measurement of Fugitive Emissions of Hydrocarbons from a Refinery. Journal of The Air & Waste Management Association Vol. 58, Iss. 8,2008.

[53] *Supra* note 34.

[54] Canada, Ministry of the Environment and Climate Change, *Overview of Findings of the National Pollutant Release Inventory (NPRI) Sector Coverage Study for the 2008 Reporting Year*.< https://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=615C413A-1>

[55] Office of the Auditor General of Canada, *2009 Fall Report of the Commissioner of the Environment and Sustainable Development*. http://www.oag-bvg.gc.ca/internet/English/parl_cesd_200911_03_e_33198.html#hd3b

In the last CEPA review, the Standing Committee recommended that CEPA be amended to permit the Minister to require third party verification of information provided to the NPRI under section 46. (Recommendation 8, page 15). We would go further and state that real-time monitoring and robust estimation methods where monitoring is not possible should be the norm.

G. Exemptions for Oil and Gas Exploration and Drilling

Annual notices provide specific sector-based exemptions from reporting requirements. The exemptions for wastewater and pits and quarries reflect the alternate reporting thresholds in those sectors. The only blanket exemption is for oil and gas exploration and drilling.

This exemption has two main implications. First, it exempts facilities that are solely involved in these activities from reporting to the NPRI. Due to this reporting exemption, most pre-production facilities (e.g. those in pilot phase or in exploration or drilling phase including hydraulic fracking) are not currently required to report to the NPRI. Second, for facilities that engage in other activities, the oil and gas exploration and drilling portion of their operations are exempt from reporting.

Following a 2011 petition by Environmental Defence to the CESD,[56] Environment Canada is considering possible changes to this exemption will also need to take into account that exploration and drilling are not usually ongoing activities.[57] There is currently an "in progress" and overdue[58] Oil and Gas Sector Review for the NPRI that includes exploration and drilling activities within its scope.

H. Proposals to Change the NPRI Reporting Criteria

There is currently a stakeholder nomination process for the NPRI.[59] This process is outside of the Act and is not required before publishing or amending a notice under section 46. The proposals can include additions or deletions of substances from the notice. These are considered for referral to multi-stakeholder consultations. There is no legislated requirement for this process and it can often be subject to delay. There is currently no mechanism in the Act requiring such proposals to be considered or responded to within a mandatory timeframe, and no mandatory criteria for the consideration of those proposals.

Recommendations 25:

We have the following recommendations to remedy these issues:

- Remove the exemption for oil and gas exploration and drilling.
- Include separate NPRI spills reporting requirements in CEPA (amend sections 46 and 201)
- Add sections that require Environment Canada to develop environmentally relevant objectives, thresholds, and identify pollution hot-spots.

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[56] *National Pollutant Release Inventory reporting of chemicals used for shale gas and in-situ mining.* http://www.oag-bvg.gc.ca/internet/English/pet_317_e_35778.html

[57] Canada, Ministry of the Environment and Climate Change, *The National Pollutant Release Inventory Oil and Gas Sector Review.* https://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=02C767B3-1

[58] The Environment Canada website lists this as "in progress" but phase 2 dealing with oil and gas exploration and drilling has not been released for consultation. Originally this was predicted to be complete in 2015.

[59] Environment Canada, "Modifying the NPRI" https://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=EF5F32DD-1#nominations

- Legislative requirement for annual state of the environment and specific environmental justice reports on exposure levels in polluted communities.
- Include as a legislated purpose the use of NPRI reporting and data to report back to the public on whether the identified objectives and thresholds are exceeded or met.
- Add a legislative objective for NPRI reporting of assessing facility operational performance in pollution prevention and reduction.
- Require daily, weekly and monthly pollution data to be included in NPRI reporting.
- Amend section 46 to require the Minister to ask for reporting of any environmental information that is relevant to the objectives and thresholds identified, including new monitoring data.
- Require the Minister to validate NPRI reporting data by engaging in facility inspections, end of stack/pipe monitoring and by using ambient environmental quality monitoring and using third party validation, particularly in hot-spots.
- Lists of facilities and emitters that are below reporting thresholds must be maintained by EC or StatsCan in order to permit transparent evaluation of the coverage of the data by data users.
- Require reporting thresholds and criteria to be set out in a regulation that is developed and amended through public consultations and using advisory committees.
- Include clear, comprehensive reporting and publishing requirements with lower thresholds in those regulations.
- Adoption of a transparent and accountable public tool for requesting changes to the NPRI with fixed timelines.
- Include a statutory requirement for consideration of amendment proposals to the NPRI requirements with enforceable response timelines and reasons requirements.
- CELA and Environmental Defence once operated a NPRI based web site called Pollution Watch which provides a model for improving the accessibility and use-ability of the NPRI web site.

Please find the recommended amendments to the CEPA Information Gathering sections 46-53 attached to this submission.

Attachment 1 - Proposed changes to the section on information gathering

Information Gathering

Notice requiring information

46 (1) The Minister shall, for the purpose of conducting research, creating an inventory of data, formulating objectives and codes of practice, issuing guidelines or assessing or reporting on the state of the environment, require any person to provide any information on pollution releases that are, in the opinion of the Minister, relevant to the objectives of this Act or the objectives, guidelines and codes of practice in sections 54 and 55.

(2) For the purpose of subsection (1) the Minister may require any person to provide such information as is required by the Minister, whether or not that person has access to the information and for greater certainty the Minister may require additional analysis, monitoring or reporting;

(3) The Minister shall enact specific requirements under subsection (1) by regulation, such regulation must be published in the *Canada Gazette* for sixty (60) days public comment prior to coming into force and the Minister shall consider all public comments submitted within that period;

(3.1) The Minister may include within a regulation in subsection (3) reporting thresholds for activities or substances where there is compelling evidence before the Minister that releases below the reporting thresholds will not have a significant local, regional or national environmental effect when considered cumulatively with other releases.

(4) The information required under subsection (3) shall include information regarding the use and release of the following:

(a) substances on the Priority Substances List;

(b) substances that have not been determined to be toxic under Part 5 because of the current extent of the environment's exposure to them, but whose presence in the environment must be monitored if the Minister considers that to be appropriate;

(c) substances that may impair surface water;

(d) substances released, or disposed of, at or into the sea;

(e) substances that are toxic under section 64 or that may become toxic;

(f) substances that may cause or contribute to international or interprovincial pollution of fresh water, salt water or the atmosphere;

(g) substances or fuels that may contribute to air pollution;

(h) substances that, if released into Canadian waters, cause or may cause damage to fish or to their habitat;

(i) substances that, if released into areas of Canada where there are migratory birds, endangered species or other wildlife regulated under any other Act of Parliament, are harmful or capable of causing harm to those birds, species or wildlife;

(j) substances that are on the list established under regulations made under subsection 200(1);

(k) substances into the environment at any stage of their life-cycle;

(l) pollution prevention; and

(m) use of federal land and of aboriginal land.

(n) pollution release data that is regularly submitted to any federal, provincial, or territorial agency or Ministry;

(o) greenhouse gas emissions;

(p) from mines, quarries, wastewater facilities oil and gas, including exploration and drilling;

(q) spills, releases and fugitive emissions.

Other recipient

(5) The Minister may, in accordance with an agreement signed with a government, require that a person subject to the regulation in subsection (3) submit the information to the Minister or to that government.

Compliance with regulation

(6) Every person who is subject to the regulation in subsection (3) shall comply with the requirements of the regulation.

Preservation of information

(7) The regulation may indicate the period during which, and the location where, the person to whom the regulation is directed shall keep copies of the required information, together with any calculations, measurements and other data on which the information is based. The period may not exceed three years from the date the information is required to be submitted to the Minister.

Guidelines

47 (1) The Minister may issue guidelines respecting the use of the powers provided for by subsection 46(1) and, in issuing those guidelines, the Minister shall take into account :

The need to include environmentally relevant pollution release information to the public in an accessible manner;

The need for accuracy and quality assurance in pollution release information;

Whether or not there is compelling evidence of undue hardship for any person required to report;

the co-ordination of requests for information with other governments, to the extent practicable; and

the manner in which the information collected under subsection 46(1) is to be used.

Consultation

(2) In carrying out the duties under subsection (1), the Minister shall offer to consult with the government of a province and the members of the Committee who are representatives of aboriginal governments and may consult with a government department or agency, aboriginal people, representatives of industry and labour and municipal authorities or with persons interested in the quality of the environment.

Minister may act

(3) At any time after the 60th day following the day on which the Minister offers to consult in accordance with subsection (2), the Minister may act under subsection (1) if the offer to consult is not accepted by the government of a province or members of the Committee who are representatives of aboriginal governments.

National inventory

48 The Minister shall establish a national inventory of releases of pollutants that includes all of the information collected under section 46 and any other information to which the Minister has access in a format fully accessible to the public on the internet, and shall allow that information to be searched and inventoried in an accessible and environmentally relevant manner.

49 Any person who identifies information that does not appear to be included in the national inventory of releases of pollutants may petition the Minister in writing to require the information to be included. Upon review of such a petition, unless the information does not exist or does not meet the requirements of section 46, the Minister shall give notice to any person or governmental agency who has access to or is in a position to submit the information to submit the information within thirty (30) days.

50 Subject to subsection 53(4), the Minister shall publish the national inventory of releases of pollutants and shall publish or give notice of the availability of any other inventory of information established under section 48, in a publicly accessible and environmentally relevant manner.