Environmental Petition to the Commissioner of the Environment and Sustainable Development Concerning the Responsibilities of Health Canada and Environment and Climate Change Canada in Protecting Pollinators from the Impact of Neonicotinoid Pesticides

Departments: Health Canada, Environment and Climate Change Canada

Introduction

The petitioner seeks to determine why Health Canada and Environment and Climate Change Canada fail or neglect to effectively:

1. cooperate, exchange information and consult on the re-evaluations and special reviews of the neonicotinoid pesticides imidacloprid, clothianidin and thiamethoxam and their products;

2. apply all relevant domestic legislation and international commitments protective of the environment and biodiversity; and

3. consider and assess the risk of harm of the neonicotinoid pesticides to non-target species and their habitats, such as wild pollinators and migratory birds and their habitats.

The petition addresses the following issues regarding sustainable development that are within the jurisdiction of the Commissioner of the Environment and Sustainable Development:

- protecting ecosystems;
- preventing pollution;
- respect for nature and needs of future generations; and
- fulfilling international obligations.

The Petitioner

Friends of the Earth Canada (FOE) is a federally incorporated not-for-profit environmental organization and federally registered charity established in 1978. FOE's mission is to protect the environment by working toward a healthy, sustainable planet on which to live, learn and work. [1] Through the Bee Cause Campaign, FOE advocates for eliminating neonicotinoid pesticides because of compelling scientific evidence of their risk of harm to the environment, including harm to non-target species such as bees and other species.

[1] "About Us." *Friends of the Earth Canada*, 2021. https://foecanada.org/about/.

Background Information:

Neonicotinoid Pesticides

Neonicotinoid pesticides are used in agriculture to protect crops from various insects.[2] They are also used for killing insects in homes, on turf and ornamental plants, controlling fleas on pets and protecting trees from invasive species. [3] The three main neonicotinoid pesticides used in Canada are imidacloprid, clothianidin and thiamethoxam.[4]

Neonicotinoid pesticides work by attacking the nervous system of insects and interfering with neural transmission.[5] These pesticides bind to certain receptors, leading to neurotoxicity and ultimately death.[6] Neonicotinoids are not only toxic to insects, but also to other invertebrates and mammals. When these pesticides are consumed at sub-lethal volumes, neonicotinoids impair growth, development and reproduction in vertebrates.[7]

Re-evaluations and Special Reviews of Neonicotinoid Pesticides

The Pest Management Regulatory Agency (PMRA) is the division of Health Canada that is responsible for regulating pesticides, including neonicotinoids, in Canada.[8] Under the *Pest Control Products Act* (PCPA), re-evaluations must occur following 15 years of the registration of a pesticide product, or earlier if there has been a change in the information required, or procedures used, for the evaluation of the pesticide's health or environmental risks.[9] The proposed re-evaluation decision is published for a 90-day public consultation period before the PMRA makes its final decision. Re-evaluations may restrict or ban a pesticide product if it poses a risk to human health or the environment.[10]

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[2] "Update on the Neonicotinoid Pesticides (September 2020)." *Government of Canada*. Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/fact-sheets-other-resources/update-neonicotinoid-pesticides-2020.html.

[3] *Ibid.*

[4] *Ibid.*

[5] David Gibbons et al. "A review of the direct and indirect effects of neonicotinoids and fipronil on vertebrate wildlife." Environ Sci Pollut Res 22:103-118, (2015) at 104 (link).

[6] "Update on the Neonicotinoid Pesticides (September 2020)," *supra*, note 2.

[7] Gibbons et al, "A review of the direct and indirect effects of neonicotinoids and fipronil on vertebrate wildlife," *supra* note 5 at 105.

[8] "Pest Management Regulatory Agency." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/corporate/about-health-canada/branches-agencies/pest-management-regulatory-agency.html.

[9] *Pest Control Products Act,* S.C. 2002, c. 28 s.16.

[10] "Re-evaluation Program." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/public/protecting-your-health-environment/pesticide-registration-process/reevaluation-program.html.

The Minister must initiate a special review of the registration of pesticide product if there are reasonable grounds to believe that the health or environmental risks of the product are unacceptable.[11] The proposed special review decision is open for a 45-day consultation period before the PMRA makes its final decision.[12]

The Minister of Health initiated a number of re-evaluations and special reviews of the registered neonicotinoid pesticides imidacloprid, clothianidin and thiamethoxam.[13]

On April 11, 2019, the PMRA published the pollinator focused re-evaluation decisions on the three neonicotinoid pesticides.

The PMRA is also conducting special reviews of imidacloprid, clothianidin and thiamethoxam products registered for use on cucurbits such as pumpkin, squash and watermelon based on risks to a specific species of ground-dwelling bee, the squash bee.[14] These special reviews were to be completed by Spring of 2021, but they have not yet been completed.

On March 31, 2021, the PMRA released the final decisions on the special reviews of clothianidin and thiamethoxam regarding risk of harm to aquatic invertebrates. The proposed decisions, released in August 2018, indicated that these pesticides pose unacceptable risk of harm to aquatic invertebrates and proposed their phase out.[15] The PMRA delayed the release of the final decisions on these special reviews to consider new information generated by the pesticide industry and additional scientific papers. The PMRA's final decisions retreated from the proposed phase outs of these two neonicotinoids. Instead, registered use of clothianidin and thiamethoxam will continue with some risk mitigation measures including deregistering certain products, additional label requirements and limiting usage on some crops.[16,17]

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[11] PCPA, *supra* note 9 at s.17.
[12] "PMRA Guidance Document, Approach to Special Reviews of Pesticides." *Government of Canada*. Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/policies-guidelines/approach-special-reviews-pesticides.html#a5.4.
[13] "Update on the Neonicotinoid Pesticides (September 2020)," *supra* note 2.
[14] "Re-evaluation and Special Review Work Plan 2020-2025." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/reevaluation-note/2020/special-review-work-plan.html.
[15] "Update on the Neonicotinoid Pesticides (September 2020)," *supra* note 2.
[16] "Special Review Decision SRD2021-04, Special Review Decision: Thiamethoxam Risk to Aquatic Invertebrates." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/special-registration-decision/2021/thiamethoxam.html.
[17] "Special Review Decision SRD2021-03, Special Review Decision: Clothianidin Risk to Aquatic Invertebrates." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/special-registration-decision/2021/thiamethoxam.html.

On May 19, 2021, the PMRA released the final re-evaluation decision for imidacloprid and associated end-use products.[18] Risks to bees and other pollinators were not a part of this re-evaluation. The PMRA had initiated full cyclical re-evaluations of imidacloprid, clothianidin and thiamethoxam in 2016. The proposed cyclical re-evaluation decision for imidacloprid, published in November 2016, provided for the phasing out of all the agricultural and most other outdoor uses of imidacloprid. This was largely reversed by the final decision where the PMRA determined that continued registration of most products containing imidacloprid is acceptable.[19]

The cyclical re-evaluations of clothianidin and thiamethoxam were also commenced in 2016, but those final decisions are not expected until Spring 2022.[20]

Neonicotinoids Risk of Harm to Non-target Species and Biodiversity

The threat to non-target species by neonicotinoids undermines biodiversity and Canada's international commitment to protecting the environment and respecting nature for future generations.[21] This petition is concerned with the harmful effects of neonicotinoid pesticides on non-target species, such as wild pollinators, including native bees, butterflies and bats, as well as migratory birds, and all of their habitats.

The PMRA's final decision on the cyclical re-evaluation of imidacloprid illustrates these concerns. The final decision had been pushed back from the end of 2019 to Spring 2021.[22] Since the publishing of the proposed re-evaluation decision on imidacloprid, peer-reviewed studies, to be discussed further below, point to growing evidence of negative impacts of neonicotinoids on an ever-widening collection of species including birds, wild bees and butterflies. While the PMRA's proposed re-evaluation of imidacloprid conducted an assessment on the potential risk to birds and small mammals, the report did not reference the mounting evidence for negative impacts to migratory birds, or other wild pollinators including butterflies, wild bees and bats. The PMRA's final re-evaluation decision on imidacloprid did not allay these concerns.

Wild Pollinators

Health Canada's risk assessment framework for bees was developed in cooperation with the United States Environmental Protection Agency (USEPA) and the California Department of

[18] "Re-evaluation Decision RVD2021-05, Imidacloprid and Its Associated End-use Products." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/reevaluation-decision/2021/imidacloprid.html
[19] "Re-evaluation Decision RVD2021-05, Imidacloprid," *supra* note 18.
[20] "Update on the Neonicotinoid Pesticides (September 2020)," *supra* note 2.
[21] "Convention on Biological Diversity." *Government of Canada*. Environment and Climate Change Canada. https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/biological-diversity-convention.html
[22] "Re-evaluation and Special Review Work Plan 2020-2025." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/reevaluation-note/2020/special-review-work-plan.html.

Pesticide Regulation, using honey bees as a surrogate analyzing the impact on other pollinators.[23] While using honey bees as a benchmark may provide relevant information on potential effects of a pesticide, the petitioner urges further consideration of the impacts on other ecologically relevant species.[24]

Other organizations have also raised concerns about the lack of in-depth analysis on the effects of neonicotinoids on non-target species. In the public commentary on the 2019 final decision for the pollinator re-evaluations of imidacloprid, clothianidin and thiamethoxan, the David Suzuki Foundation raised concerns that the PMRA had failed to consider the effect of neonicotinoids on wild pollinators including butterflies and native bee species.[25]

Honey bees are not a reliable surrogate for measuring the threat to other bee species of neonicotinoid pesticides because toxicity within and among bee species varies greatly.[26] For example, leafcutter bee larvae are more sensitive than honey bee larvae to clothianidin and adult stingless bees are more sensitive to thiamethoxam than honey bees.[27] Furthermore, bumble bees are likely more sensitive to both clothianidin and thiamethoxam when ingesting the pesticide orally.[28] The high variance in sensitivity to neonicotinoids means the PMRA should conduct a more robust analysis on the unique effects on a more representative number of wild bee species.

A recent study that was not considered in either the cyclical re-evaluation decision for imidacloprid, the 2019 pollinator re-evaluation of imidacloprid or the 2016 proposed re-evaluation of imidacloprid showed that behaviours unique to ground-nesting, wild bees put them at risk of exposure to imidacloprid in different ways than honey bees. The study argued solitary ground-nesting bees are inadequately represented by pesticide risk assessments given

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[23] "Pollinator Protection" *Government of Canada*. Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/growers-commercial-users/pollinator-protection.html.

[24] "Pollinator Risk Assessment Guidance: Protecting Bees and Other Pollinators from Pesticides." *United States of America*. Environmental Protection Agency at 13. https://www.epa.gov/pollinator-protection/pollinator-risk-assessment-guidance.

[25] "Re-evaluation Decision RVD2019-06, Imidacloprid and Its Associated End-use Products: Pollinator Re-evaluation." *Government of Canada*. Health Canada at 27. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/reevaluation-decision/2019/imidacloprid.html.
See also: "Re-evaluation Decision RVD2019-05, Clothianidin and Its Associated End-use Products: Pollinator Re-evaluation." *Government of Canada*. Health Canada at 105. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/reevaluation-decision/2019/imidacloprid.html.

[26] Pierre Mineau. "Neonicotinoids in California, their use and threats to the state's aquatic ecosystems and pollinators, with a focus on neonic-treated seeds." Technical Report prepared for the Natural Resource Defense Council (NRDC), (2020) at 28 (link).

[27] *Ibid.*

[28] *Ibid.*

the reliance on honey bees as a surrogate for toxic effects of imidacloprid.[29] Unlike honey bees, ground-nesting bees live in the soil and are at risk of exposure to imidacloprid residues in soil. This type of exposure is not extensively considered in regulatory assessments because honey bees rarely come into direct contact with soil.[30] This study focused on ground-nesting squash bees, finding exposure to imidacloprid through soil had detrimental effects on fitness and reproduction in the squash bees. When exposed to sub-lethal levels of imidacloprid, the bees built 85% fewer nests, left 5.3 times more pollen unharvested and produced 89% fewer offspring than control bees.[31]

While the PMRA is conducting a special review for squash bees, the results of the study on ground-nesting squash bees are applicable to other ground-nesting bees. The lack of regulatory assessment for ground-nesting bees is problematic given how many wild bees, essential for pollinating crops and wild plants, live in soil. Of the 20,000 bee species in the world, 70% live underground.[32] A recent peer-reviewed study found that pesticides, including neonicotinoids, harm organisms critical to healthy soil, biodiversity and soil carbon sequestration.[33] Ground-nesting bees living in habitats contaminated with neonicotinoids are at risk. This recent study suggests that the PMRA is not adequately dealing with the risks to habitats of the majority of wild bees in Canada.

The harmful effects of neonicotinoids extend beyond bees to other wild pollinators whose behaviour and habitat preferences bring them into contact with neonicotinoids. A recent study focusing on imidacloprid, but not referenced in the final cyclical re-evaluation of imidacloprid, the 2019 pollinator re-evaluation of imidacloprid or the 2016 proposed re-evaluation of imidacloprid reflects a risk to Monarch butterflies, listed as an endangered species by COSEWIC and of special concern under the *Species at Risk Act* S.C. 2002, c.29. A study of Monarch butterflies exposed to imidacloprid at concentrations likely found in wild plants showed a severe decline in their rate of survival with almost 80% of butterflies dying after 22 days of regularly consuming imidacloprid.[34] Clearly, further research must be conducted on imidacloprid's risk of harm to wild pollinators like butterflies.

Other wild pollinators, including bats who forage in farmlands for insects, are at risk of exposure to all three neonicotinoid pesticides given their behavioural traits. The Canadian Wildlife Federation commissioned a 2018 study on neonicotinoids and bats, assessing both

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[29] D. Susan Willis Chan & Nigel E. Raine. "Population decline in a ground-nesting solitary squash bee (*Eucera pruinsa*) following exposure to a neonicotinoid insecticide treated crop (*Cucurbita pepo*)." *Nature, Scientific Reports* 11, 4241 (2021) at 1 (link).

[30] D. Susan Willis Chan & Nigel E. Raine. "Population decline in a ground-nesting solitary squash bee," *supra* note 29 at 2.

[31] *Ibid* at 1.

[32] "Ground-nesting bees in your backyard!" *Cornell University*. Department of Entomology. https://entomology.cals.cornell.edu/extension/wild-pollinators/native-bees-your-backyard/.

[33] Tari Gunstone et al. "Pesticides and Soil Invertebrates: A Hazard Assessment." *Front. Environ. Sci* (May 2021) (link).

[34] David G. James. "A Neonicotinoid Insecticide at a Rate Found in Nectar Residues Longevity but Not Oogenesis in Monarch Butterflies, Danaus plexippus (L.). (Lepidoptera: Nymphalidae)." *Insects* 10, 276 (2019) (link).

direct and indirect risks. This study was not referenced in the final re-evaluation of imidacloprid or 2019 pollinator re-evaluations of imidacloprid, clothianidin or thiamethoxam. The study noted that there is real potential for bats to be acutely affected if they forage near treated fields or tree crops. Levels of neonicotinoid residues, whether from foliar, air blast or seed treatment, are high enough to put bats at risk of motor impairment or death.[35]

Migratory Birds

In addition to wild pollinators, harm to migratory birds has not been adequately considered on re-evaluations and special reviews of the neonicotinoid pesticide, which are highly toxic to birds. A single neonicotinoid coated corn kernel could kill a songbird, and as little as 1/10th of a kernel per day during egg-laying season can impact a bird's reproduction.[36] Migratory birds are uniquely threatened by neonicotinoid pesticides because many of these birds use agricultural sites where they are applied as rest stops during their migratory journey.[37]

Recent studies, not referenced in the 2016 proposed re-evaluation of imidacloprid or the 2019 pollinator re-evaluations of imidacloprid, clothianidin or thiamethoxam, and only briefly acknowledged in the final decision on imidacloprid,[38] show that, under field realistic conditions, migratory birds frequently consume neonicotinoid treated seeds producing lethal and sublethal effects on them.[3940] These studies showed that such seeds are abundant on the surface of soil for wildlife, including migratory birds, to consume during the spring planting season.

Another recent study only briefly noted in the final decision,[41] but not referenced in the 2016 proposed re-evaluation of imidacloprid, or the 2019 pollinator re-evaluation for imidacloprid examined the effects of imidacloprid on migratory birds who occupy agricultural land during their migration. Birds are exposed to imidacloprid through various pathways including contacting insecticide sprays, ingesting contaminated water and soil and consuming treated seeds.[42] This study found strong evidence that imidacloprid impacts bodily functions in migratory birds, namely weight-loss and delayed migration. Because imidacloprid weakens birds, they required longer stopover times at agricultural sites before continuing their migratory journey. This means they arrive later at their end destination, resulting in poorer choices for

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[35] Dr. Pierre Mineau and Carolyn Callaghan. "Neonicotinoid Insecticides and Bats, An assessment of the direct and indirect risks," Canadian Wildlife Federation (2018) at 55 (link).
[36] Dr. Pierre Mineau and Cynthia Palmer. "The Impact of the Nation's Most Widely Used Insecticides on Birds." *American Bird Conservancy* (2013) at 3 (link).
[37] Christy A. Morrissey et al. "A neonicotinoid insecticide reduces fueling and delays migration in songbirds." *Science* 365, 6458 (2019): 1177-1180 (link).
[38] "Re-evaluation Decision RVD2021-05, Imidacloprid", *supra* note 18 at 15 and 17.
[39] Roy et al. "Wildlife consumption of neonicotinoid-treated seeds at simulated seed spills." *Environment Research* 190 (2020) (link).
[40] Roy et al. "Multi-scale availability of neonicotinoid-treated seed for wildlife in an agricultural landscape during spring planting." *Science of the Total Environment* 682 (2019): 271-281 (link).
[41] "Re-evaluation Decision RVD2021-05, Imidacloprid", *supra* note 18 at 13-14 and 301.
[42] Morrissey et al. "A neonicotinoid insecticide reduces fueling and delays migration in songbirds." *supra* note 37.

nesting, mating and an overall decline in general fitness.[43] This compelling study suggests a detrimental impact of imidacloprid on migratory birds that should not be overlooked by the agencies of Health Canada, such as the PMRA, and Environment and Climate Change Canada responsible for protecting migratory birds and preserving their habitats. The shallow consideration of this study in the PMRA's final decision on imidacloprid, in contrast to the deference and weight given to self-serving industry studies, highlights the need for independent, informed and critical review by Environment and Climate Change Canada of pesticide re-evaluations and special reviews by the PMRA.

Migratory birds are also exposed to neonicotinoids when they consume aquatic invertebrates. Birds, bats and other mammals rely on aquatic insects for food.[44] The PMRA recognizes that current levels of imidacloprid, clothianidin and thiamethoxam are measured in water bodies at levels harmful to aquatic invertebrates.[45] When aquatic invertebrates are harmed by neonicotinoids, other species are also put at risk. Neonicotinoids polluting water systems threatens biodiversity and the entire food chain.

Environment and Climate Change Canada has taken some steps to protect migratory birds, including the Anna's hummingbird, against other human activities that threaten the seasonal activities of migratory birds. For example, in April 2021, Environment and Climate Change Canada halted construction of the Trans Mountain Pipeline through to mid-August 2021 in Burnaby, British Columbia to protect migratory bird's nesting season in the area.[46] The petitioner questions why Environment and Climate Change Canada has not used its powers to protect migratory birds from the harmful effects of neonicotinoids when they migrate and use agricultural lands.

Legislation and international obligations to protect the environment and biodiversity

In addition to the PCPA, other federal environmental protection legislation that protects wild pollinators, migratory birds and their habitats, includes the *Migratory Birds Convention Act*, S.C. 1994, c. 22 ("MBCA"), *Species at Risk Act*, S.C. 2002, c. 29 ("SARA"), and *Canadian Environmental Protection Act* S.C. 1999, c. 33 ("CEPA").[47]

[43] *Ibid.*
[44] Gibbons et al. "A review of the direct and indirect effects of neonicotinoids and fipronil on vertebrate wildlife," *supra* note 5 at 112.
[45] "Update on the Neonicotinoid Pesticides (September 2020)," *supra* note 2.
[46] Hina Alam. "Trans Mountain pipeline construction ordered paused in B.C bird nesting area." *The Canadian Press.* CBC News. Trans Mountain pipeline construction ordered paused in B.C. bird nesting area | CBC News.
[47] PCPA, *supra* note 9 at s.68(1), *Migratory Birds Convention Act,* S.C. 1994, c.22 s.16(1)(b); *Species at Risk Act*, S.C. 2002, c. 29 s.32; *Canadian Environmental Protection Act, 1999*. SC 1999, c.33 s.34. The federal *Fisheries Act* R.S.C., 1985, c. F-14, is very important regarding the aquatic environment but it is beyond the scope of this petition.

At the international level, Canada has ratified the United Nations Convention on Biological Diversity.[48] Its goals are: conservation of biodiversity; sustainable use of biodiversity; and the fair and equitable sharing of the benefits arising from the use of genetic resources.

One of the primary objectives of the PCPA is preventing unacceptable risk to the environment from the use of pest control products in Canada.[49] This objective is aligned with the objectives and provisions of SARA, the MBCA, CEPA and Canada's international obligations to protect the environment under the United Nations Convention on Biological Diversity.

Collectively, domestic environmental protection legislation and Canada's international obligations, including biodiversity protection, underscore the importance of the Ministers of Health and Environment and Climate Change cooperating, sharing information and consulting to ensure that all relevant environmental protection tools are genuinely considered when pesticide control products are re-evaluated or under special review.

1. *The Pest Control Products Act*

The preamble of the PCPA directs cooperation among federal departments in the development of policies to pursue the attainment of the objectives of the PCPA, which includes a primary objective in s.4 of preventing unacceptable risk to the environment from the use of pest control products.[50] One would expect that Environment and Climate Change Canada would be the primary federal department to cooperate with Health Canada to achieve this objective.

On a re-evaluation or special review, the Minister of Health is required to deliver a notice to federal and provincial government departments and agencies requesting them to provide information in respect of the health and environmental risks and the value of the product that is under re-evaluation or special review.[51] One would expect that Environment and Climate Change Canada would be the primary federal department to provide such information to Health Canada.

Section 28 of the PCPA requires the Minister of Health to consult federal and provincial government departments and agencies whose interests and concerns are affected before making a decision on the registration of a pest control product on completion of a re-evaluation or special review.[52] Again, one would expect that Environment and Climate Change Canada would be the primary federal department that Health Canada would consult with.

The PCPA also incorporates the precautionary principle. Section 20(2) provides: "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 adverse health impact or

[48] "Convention on Biological Diversity," *supra* note 21.
[49] PCPA, *supra* note 9 at preamble.
[50] *Ibid* at s.4.
[51] *Ibid* at s.16(4), (6) and s.18(2).
[52] *Ibid* at s.28.

environmental degradation." Failing to assess the risk of harm of a pesticide product to key species, such as wild pollinators, species at risk, and migratory birds, and failing to apply all relevant legislative provisions protective of the environment when conducting a re-evaluation or special review does not respect the precautionary principle.

2. *Migratory Birds Convention Act, 1994*

The purpose of the MBCA is to implement a Convention protecting migratory birds in Canada and the USA by protecting and conserving migratory birds as populations, and individual birds and their nests.[53] The MBCA carries out its mandate, in part, by prohibiting the possession of a migratory bird or nest and buying, selling or exchanging a migratory bird or nest.[54]

The MBCA creates links between the responsibilities of the Minister of the Environment and Climate Change and the Minister of Health to protect and conserve migratory birds. For example, sub-sections 5.1(1) and (3) of the MBCA prohibit the deposit of a substance that is harmful to migratory birds in waters or an area that they frequent, or in a place from which the substance may enter such waters or such an area. However, the prohibition does not apply if the substance and its deposit are authorized under an Act of Parliament.

Pesticide products and their use can be registered, and thereby authorized, under the PCPA, which is an Act of Parliament. Therefore, it is of the utmost importance that the PMRA, on behalf of the Minister of Health, and Environment and Climate Change Canada cooperate, exchange information, and consult about the risk of harm to migratory birds on pesticide product's re-evaluation or special review, such as neonicotinoid pesticides. If this is not done, and the PMRA itself does not assess the impact of neonicotinoid pesticide products on migratory birds, then they have no protection at all from the use of those products.

Certain migratory birds listed as endangered or threatened under SARA are threatened by pesticide use, including the Bobolink.[55] The Bobolink breeds in the southern part of all Canadian provinces. According to the COSEWIC Assessment and Status Report, one of the main threats to the Bobolink is pesticide use on breeding and wintering grounds.[56] This assessment suggests that pesticides, including neonicotinoids, pose a threat to migratory birds protected under the MBCA and SARA. Other migratory birds protected under the MBCA that may be impacted by

[53] MBCA, *supra* note 47 at s.4.
[54] *Ibid* at s.5.
[55] "Bobolink (Dolichonyx oryzivorus). *Government of Canada*. Environment Canada. (online): https://species-registry.canada.ca/index-en.html#/species/1087-746.
[56] "COSEWIC Assessment and Status Report on the Bobolink (Dolichonyx oryzivorus)." *Government of Canada.* COSEWIC. 2010. (online): www.sararegistry.gc.ca/status/status_e.cfm.

neonicotinoids include, but are not limited to, the:[57] Ruby-throated hummingbird,[58] White-crowned Sparrow,[59] Bank Swallow,[60] Baird's Sparrow,[61] and Grasshopper Sparrow.[62]

3. *Species at Risk Act*

SARA's protection of species at risk and their habitat overlaps with other Acts of Parliament, including the PCPA and the MBCA, making it imperative that the respective ministries cooperate in protecting the environment from risk of harm from pesticide products. SARA's purpose is to prevent wildlife species from being extirpated or becoming extinct and to provide for the recovery of wildlife species as a result of human activity.[63] The Act does this by prohibiting harm to extirpated, endangered and threatened species and their residences, using conservation strategies, recovery strategies, action plans and management plans for endangered, threatened and extirpated species listed under SARA.[64]

In addition to migratory bird species, many critical pollinators fall under the list of threatened and endangered species under SARA. Eight species of wild native bees, including the Gypsy Cuckoo Bumble Bee and Rusty-patched Bumble Bee, are listed as endangered under SARA, and neonicotinoid pesticides are a primary threat to them.[65] Monarch Butterflies, as previously noted, are also listed as a species of special concern under SARA and endangered under COSEWIC, with neonicotinoids highlighted as an emerging threat to the species.[66]

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[57] MBCA, *supra* note 47 at schedule 2.
[58] Simon G. English et al. "Neonicotinoid pesticides exert metabolic effects on avian pollinators." *Nature*. 11, 2914 (2021) (online).
[59] "A neonicotinoid insecticide reduces fueling and delays migration in songbirds," *supra* note 37 at 1.
[60] "Bank Swallow (Riparia riparia), *Government of Canada*. Environment Canada. (online): Bank Swallow (Riparia riparia) - Species search - Species at risk registry (canada.ca).
[61] "Baird's Sparrow (Ammodramus bairdii), *Government of Canada*. Environment Canada. (online): https://species-registry.canada.ca/index-en.html#/species/36-851.
[62] "Grasshopper Sparrow, pratensis subspecies (Ammodramus savannarum pratensis), *Government of Canada*. Environment Canada. (online): https://species-registry.canada.ca/index-en.html#/species/1241-907.
[63] SARA, *supra* note 47 at preamble.
[64] *Ibid* at s.32 and 33.
[65] "Gypsy Cuckoo Bumble Bee (Bombus bohemicus)." *Government of Canada*. Environment Canada. (online): Gypsy Cuckoo Bumble Bee (Bombus bohemicus) - Species search - Species at risk registry (canada.ca).
"Rusty-patched Bumble Bee (Bombus affinis)." *Government of Canada.* Environment Canada. (online): Rusty-patched Bumble Bee (Bombus affinis) - Species search - Species at risk registry (canada.ca).
[66] "Monarch." *Government of Canada*. Species at risk public registry. (online): https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=294#ot18.

There are also several species of bats listed under SARA as endangered or threatened. Bats that may be impacted by neonicotinoids include, without limitation: Little Brown Myotis,[67] Northern Myotis,[68] Pallid Bat,[69] and the Spotted Bat.[70]

Under s.39(1)(c) of SARA, a recovery strategy must be prepared in cooperation with every minister of the Government of Canada who has authority over federal land or other areas on which the species is found.[71] This section spotlights the importance of the Minister of Environment and Climate Change and the Minister of Health working together when preparing recovery strategies for endangered, threatened and extirpated species because of the risk of harm to the environment of neonicotinoid pesticides.

Also, under s.58(1) of SARA, the critical habitat of endangered or threatened species cannot be destroyed if the listed species is a species of migratory birds protected by the MBCA.[72] Importantly, SARA protects migratory birds and aquatic species from harm, such as harm from the use of pesticides, whether or not they are on federal lands.[73]

If Health Canada and Environment and Climate Change Canada do not cooperate, exchange information and consult on the application of SARA in respect of the re-evaluation or special review of neonicotinoids under the PCPA, then species at risk, including some wild pollinators, migratory birds, and aquatic species, will not be adequately protected.[74] This would undermine the PCPA's primary objective of preventing unacceptable risk to the environment from the use of pest control products.

4. *Canadian Environmental Protection Act, 1999*

CEPA addresses pollution prevention and control in order to protect the environment and human health.[75] CEPA came into law in 1988, but it is proposed to be updated by Bill C-28, the *Strengthening Environmental Protection for a Healthier Canada Act*. One of the key changes will be the long overdue recognition of the right to a healthy environment.[76]

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[67] "Little Brown Myotis (Myotis lucifugus)." *Government of Canada*. Environment Canada. (online): https://species-registry.canada.ca/index-en.html#/species/1173-848.

[68] "Northern Myotis (Myotis sepentrionalis)." *Government of Canada*. Environment Canada. (online): https://species-registry.canada.ca/index-en.html#/species/1175-849.

[69] "Pallid Bat (Antrozous pallidus)." *Government of Canada*. Environment Canada. (online): https://species-registry.canada.ca/index-en.html#/species/1175-849.

[70] "Spotted Bat (Euderma maculatum)." *Government of Canada*. Environment Canada. (online): https://species-registry.canada.ca/index-en.html#/species/170-341.

[71] SARA, *supra* note 47 at s.39(1)(c).

[72] SARA, *supra* note 47 at s.58(1)(c).

[73] Section 83 of SARA contains exceptions. The Petitioner's position is that they do not apply to pesticide use because that is not a matter of public safety, health or national security, and pesticides are not necessary because their need and effectiveness are questionable and there are alternatives.

[74] Also see the discussion below regarding the United Nations Convention on Biological Diversity.

[75] CEPA, *supra* note 47 at preamble.

[76] "Government of Canada delivers on commitment to strengthen CEPA, 1999 and proposes to recognize a right to a healthy environment." *Government of Canada*. Environment and Climate Change Canada. Last modified April 21,

For the purpose of controlling toxic substances, CEPA identifies a substance as toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that:

1. the substance may have an immediate or long-term effect on the environment or biological diversity;
2. the substance may constitute a danger to the environment on which life depends; or
3. the substance constitutes a danger to human life or health.[77]

Under the PCPA, the PMRA also uses CEPA's definition of a toxic substance through the Toxic Substances Management Policy referred to in the PCPA.[78] If a substance is considered toxic under CEPA's standards, is persistent, bio-accumulative and primarily the result of human activity, then the PMRA may list the substance as a "Track 1 Substance".[79] The long-term goal is to completely eliminate the use of Track 1 Substances.

Some pesticides are listed under CEPA

Certain pesticides that were once registered under the PCPA are now included under Schedule 1 of CEPA. For instance, dichlorodiphenyltrichloroethane (DDT) was registered under the PCPA and used in pest control products until the 1960s.[80] The pesticide was phased out because of environmental and safety concerns within Canada and internationally, and is now on the List of Toxic Substances under Schedule 1 of CEPA.[81] Despite the success of DDT as a pesticide, the United States also banned DDT based on its adverse environmental effects, particularly because DDT was very persistent in the environment, accumulated in fatty tissues of animals, including humans, and could travel long distances in the upper atmosphere.[82] DDT caused substantial harm to wildlife and their habitats.[83]

2021. https://www.canada.ca/en/environment-climate-change/news/2021/04/government-of-canada-delivers-on-commitment-to-strengthen-the-canadian-environmental-protection-act-1999-and-proposes-to-recognize-a-right-to-a-hea.html.

[77] CEPA, *supra* note 47 at s.64.

[78] "Appendix I, *Canadian Environmental Protection Act* and Toxic Substances Management Policy (TSMP)." *Government of Canada.* Health Canada. https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/policies-guidelines/regulatory-directive/1999/strategy-implementing-toxic-substances-management-policy-dir99-03.html

[79] "Appendix I, *Canadian Environmental Protection Act* and Toxic Substances Management Policy (TSMP)," *supra* note 78.

[80] "Toxic substances list: DDT" *Government of Canada*. Health Canada. https://www.canada.ca/en/environment-climate-change/services/management-toxic-substances/list-canadian-environmental-protection-act/dichlorodiphenyltrichloroethane.html

[81] CEPA, *supra* note 47 at schedule 1.

[82] "DDT – A brief history and status," *United States Government,* Environmental Protection Agency. https://www.epa.gov/ingredients-used-pesticide-products/ddt-brief-history-and-status.

[83] In addition, Methyl Bromide was once used in agriculture and pest control, but it is now also included under Schedule 1. See: Methyl Bromide." *Government of Canada.* Environment and Climate Change Canada. https://ec.gc.ca/toxiques-toxics/Default.asp?lang=En&n=B5655CBB-1.

Shared responsibility of Ministers

The Minister of Environment and Climate Change is primarily responsible for CEPA but shares some of the responsibilities under the Act with the Minister of Health. For example, both Ministers may assess whether or not a substance is toxic and if it should be added to the List of Toxic Substances in Schedule 1 of the Act.[84] After a substance is listed as toxic, both Ministers have authority to determine how much of that substance can be released into the environment at any given time.[85]

Further, under CEPA, the Minister of the Environment and Climate Change Canada can seek information on substances including neonicotinoids affecting wildlife regulated under the MBCA and SARA. For the purpose of conducting research, formulating objectives and issuing guidelines, the Minister may issue a notice requiring information on substances that, if released into areas 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.[86] This provision highlights that the exchange of relevant information between Health Canada and Environment and Climate Change Canada is a two-way street. Just as the Minister of Health can seek information from other departments under the PCPA, so can the Minister of Environment and Climate Change seek information from the Minister of Health, e.g., regarding pesticides threatening non-target species such as wild pollinators and migratory birds.

Unfortunately, Environment and Climate Change Canada appears to take a hands-off approach to the re-evaluation and special review of pesticide products.[87] For example, the Environment and Climate Change March 17, 2021 information sheet entitled "Nineteen substances on the Domestic Substances List associated with pesticidal uses"[88] only focused on the non-pesticidal uses of 19 substances on the Domestic Substances List (DSL) that are known to be used as active ingredients in pesticidal applications. The information sheet justifies not assessing the pesticide uses of the substances on the basis that:

- Exposure of Canadians and the environment from non-pesticidal uses of these substances was not expected, since no such uses in Canada were identified at the time of the assessment.

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[84] CEPA, *supra* note 47 at s.68.
[85] *Ibid* at s.65(2).
[86] *Ibid* at s.46(1)(i).
[87] There are no applicable exceptions in CEPA that prevent it from applying to re-evaluations and special reviews of pesticide products under the PCPA. For example, s.93(4) only applies to making regulations and, additionally, there cannot be sufficient protection of the environment under that section if non-target species are not protected.
[88] "Nineteen substances on the Domestic Substances List associated with pesticidal uses – information sheet." *Government of Canada.* Health Canada. Last updated March 2021. https://www.canada.ca/en/health-canada/services/chemical-substances/fact-sheets/chemicals-glance/nineteen-substances-domestic-substances-list-associated-pesticidal-uses.html.

- Any releases to the environment from pesticidal uses associated with these 19 substances have been assessed under the PCPA.

This approach by Environment and Climate Change Canada avoids assessing the harmful effects of pesticide products on non-target species. Further, it does not explain why the harmful effects of a pesticide on non-target species should be distinguished from the harmful effects of non-pesticidal uses. At best, it is a circular approach that does not further protection of the environment. Surely preventing harm from pesticidal use is the point and not whether a substance has a non-pesticidal use.

This hands-off approach to pesticide products is specifically affirmed by the federal government's very recent summary of the key amendments made by Bill C-28.[89] The summary states (emphasis added):

> The amendments to CEPA will not affect products, such as pesticides, which are specifically regulated under other federal Acts, such as the *Pest Control Products Act* (PCPA). This is consistent with certain frameworks and provisions under CEPA and the best-placed act approach to chemicals management.

The Petitioner strongly objects to the "best-placed act approach to chemicals management" referred to in the summary of amendments to Bill C-28. The "best-placed act" approach creates a fundamental flaw in the re-evaluation and special review of neonicotinoid pesticides registered under the PCPA. For example, if non-target species (e.g., wild pollinators and migratory birds) are not considered on a re-evaluation or special review of a pesticide product by the PMRA then there will not be any effective cooperation, exchange of information and consultation with Environment and Climate Change Canada under the PCPA concerning the risk of pesticidal harm to those species and their habitats. Environment and Climate Change Canada can simply state, as it has done in regard to the "Nineteen substances on the Domestic Substances List associated with pesticidal uses" discussed above, that: "Any releases to the environment from pesticidal uses associated with these [pesticides] have been assessed under the PCPA." The protective provisions of Acts such as the MBCA, SARA, and CEPA will not be brought to bear on the assessment in respect of those non-target species and neither Health Canada nor Environment and Climate Change Canada will fulfill the mandate to protect the environment.

Given the CEPA provisions that manage and regulate harmful substances, including certain pesticides like DDT and Methyl Bromide, and that Health Canada and Environment and Climate Change Canada have shared responsibilities under CEPA, this petition seeks further information

[89] "Bill C-28, Strengthening Environmental Protection for a Healthier Canada Act – Summary of Amendments." *Government of Canada*. Environment and Climate Change Canada. https://www.canada.ca/en/services/environment/pollution-waste-management/strengthening-canadian-environmental-protection-act-1999/bill-c-28-strengthening-environmental-protection-healthier-canada-act-summary-amendments.html.

and clarification from these federal departments on their use of CEPA to ensure that the risk of harm to the environment from neonicotinoid pesticides is fully and properly assessed. In particular, the Petitioner is concerned about the risk of harm to non-target species, such as wild pollinators and migratory birds and their habitats.

Clearly, any policy that purports to limit CEPA's rigorous application to pesticide products, such as the "best-placed act approach to chemicals management", should be discarded or, at best, narrowly construed. Such a policy cannot justify the use of toxic chemicals. The policy undermines cooperation, the sharing of information, and consultation under the PCPA; it further undermines the shared responsibilities of the Ministers of Health and Environment and Climate Change in the administration of CEPA; it is contrary to the precautionary principle; it is not protective of the environment; and it creates a gap in the protection of non-target species from pesticidal use.[90]

5. United Nations Convention on Biological Diversity

Canada was "the first industrialized country to ratify the Convention on Biological Diversity in 1992 and we are the proud host of the CBD Secretariat, located in Montreal."[91]

In a Statement by the Executive Heads of the Members of the Environment Management Group,[92] made in furtherance of the United Nations Convention on Biological Diversity, it was acknowledged that**:** "Pesticides can have a significant impact on biodiversity. For example, pesticides, particularly insecticides, have been demonstrated to have a broad range of lethal and sublethal effects on pollinators under controlled experimental conditions (IPBES, 2016)."

The federal lead for the Convention is Environment and Climate Change Canada. If Health Canada and Environment and Climate Change Canada are not fully and effectively cooperating, exchanging information and consulting on the re-evaluation and review of pesticide products then neither the spirit nor the terms of the Convention on Biological Diversity are being effectively followed.

Petition questions and requests**:**

This petition addresses the concern that Health Canada and Environment and Climate Change Canada do not engage in actual, genuine and effective cooperation, exchange of information and consultation on the re-evaluations and special reviews of the neonicotinoid pesticides imidacloprid, clothianidin and thiamethoxam. This results in a failure to prevent harm to the

[90] PCPA, *supra* note 9 at s.20(2); CEPA, *supra* note 47 at preamble and s.6(1.1), 76.1.
[91] "Convention on Biological Diversity," *supra* note 21 at 1.
[92] "Supporting the Global biodiversity Agenda: a United Nations System Commitment for Action to assist Member States delivering on the post-2020 global biodiversity framework." *United Nations.* United Nations Environment Management Group at 31 (link).

environment, and in particular to wild pollinators, migratory birds, and their habitats, and exacerbates the biodiversity crisis,[93] contrary to Canada's international obligations.

The questions and requests for information below further ask if, and how, the provisions of the PCPA, MBCA, SARA, CEPA and the United Nations Convention on Biological Diversity have been, and will be, applied on the re-evaluations and special reviews of neonicotinoid pesticide products.

The Petitioner therefore asks the Minister of Health and the Minister of the Environment and Climate Change (the "Ministers"), individually and collectively, the following questions:

1. In regard to the re-evaluations and special reviews of the neonicotinoid pesticides imidacloprid, clothianidin and thiamethoxam and their products (the "Pesticides"), have the Ministers, in the last ten years, cooperated, exchanged information and consulted, as required by the PCPA, about the Pesticides' risk of harm to the environment and biodiversity, including:
    a. all wild pollinators including insects, birds, bats, and their habitats; and
    b. migratory birds, including grassland birds and aerial insectivores, and their habitats?

    Please advise whether or not this has occurred and provide details, including an explanation.

2. In regard to the re-evaluations and special reviews of the Pesticides, have the Ministers, in the last ten years, cooperated, exchanged information and consulted about and/or applied the provisions of the MBCA that protect migratory birds and their habitats?

    Please advise whether or not this has occurred and provide details, including an explanation.

3. In regard to the re-evaluations and special reviews of the Pesticides, have the Ministers, in the last ten years, cooperated, exchanged information and consulted about and/or applied the provisions of SARA and the United Nations Convention on Biological Diversity that protect the environment and biodiversity, including wild pollinators and migratory birds designated as species at risk, and their habitats?

    Please advise whether or not this has occurred and provide details, including an explanation.

4. In regard to the re-evaluations and special reviews of the Pesticides, have the Ministers, in the last ten years, cooperated, exchanged information and consulted about and/or applied the provisions of CEPA, and in particular, but without limitation:

[93] "Convention on Biological Diversity," *supra* note 21.

a. the impacts of the Pesticides on the broader ecosystem under s.44(c)(i) of CEPA; and
b. whether any one or more of the Pesticides should be added to the List of Toxic Substances in Schedule 1 of CEPA?

Please advise whether or not this has occurred and provide details, including an explanation.