

November 29, 2022

Pest Management Regulatory Agency Publications Section  
Pest Management Regulatory Agency  
Health Canada  
2720 Riverside Drive  
Ottawa, Ontario K1A 0K9

*Via email:* [pmra.publications-arla@hc-sc.gc.ca](mailto:pmra.publications-arla@hc-sc.gc.ca)

To whom it may concern,

**Re: Consultation on the predacide uses of strychnine and sodium monofluoroacetate and their associated end-use products, Proposed Re-evaluation Decision PRVD2022-18**

These are the comments of Animal Justice Canada, The Fur-Bearers, Coyote Watch Canada, the David Suzuki Foundation, and Cochrane Ecological Institute regarding Proposed Re-evaluation Decision PRVD2022-18, Predacide Uses of Strychnine and Sodium Monofluoroacetate and their Associated End-use Products (the “**Proposed Re-evaluation Decision**”).<sup>1</sup> Health Canada is proposing to continue registering the predacide uses of strychnine and Compound 1080 and their associated end-use products registered for sale and use in Canada. Our groups oppose this proposed decision in the strongest possible terms.

Products used for the control of “pests” are registered for use under the *Pest Control Products Act*, SC 2002, c 28 (the “**Act**”). Before being registered for use, the Pest Management Regulatory Authority (“**PMRA**”) conducts an assessment of the risks a given product poses to the environment and human health, and weighs these risks against its benefits. The Agency has refused to consider animal welfare in the assessment of such products, including with respect to products containing strychnine and Compound 1080, which are known to cause widespread harm and suffering.

Furthermore, the Act defines “pest” extremely broadly as including any plant, animal, or organism “that is injurious, noxious or troublesome, whether directly or indirectly”. This open-

---

<sup>1</sup> Our groups have worked collaboratively with Wolf Awareness in conducting a comprehensive scientific review of the Proposed Re-evaluation Decision. However, Wolf Awareness has been granted an extension on the deadline for comment due to delays in obtaining certain documents relevant to the re-evaluation. As such, we are providing these preliminary comments now in line with the November 29, 2022 deadline but wish to be clear that we support the comments of Wolf Awareness that will be submitted in the coming weeks.

ended definition allows virtually any animal to be found to be “troublesome” and thus to be considered a pest against whom lethal pest control products can be used.

By ignoring harm and suffering caused to animals, and by allowing any and all animals to be considered pests regardless of their role in the ecosystem, pest control products are registered for use in Canada to kill animals including wolves, bears, and coyotes even where they are known to cause significant and prolonged pain and suffering both to their intended victims and to non-target animals throughout the ecosystem. The Agency’s approach to environmental risks in the present re-evaluation appears to have focused only on “population level” risks.

Even within this myopic framework, the proposed re-evaluation decision that would allow strychnine and Compound 1080 to be registered for use in Canada is unreasonable and contrary to the purposes and requirements of the Act. The proposed Decision to register these products for use for another five years will result in the poisoning and death of thousands of target and non-target wildlife, including species at risk, and will also result in the death of numerous companion dogs.

On the grounds of animal welfare and environmental ethics, we continue to vehemently oppose and object to the use of these products, which cause victims, both target and non-target individuals, severe and prolonged pain, suffering, and distress.

## **A. BACKGROUND**

Health Canada has registered strychnine and Compound 1080 (sodium monofluoroacetate) for use in Canada to kill large, native mammals including wolves, coyotes and black bears. Health Canada issues permits for the products every five years. Alberta is the only province in Canada that uses these products now that Saskatchewan has withdrawn its registration for Compound 1080.

### **1) Strychnine**

Strychnine causes prolonged pain and suffering prior to death in both target and non-target animals. Symptoms include frequent periods of tetanic seizures, occasional cessation of breathing, hyperthermia, hyperflexia, body aches, lockjaw, protruding eyes, perspiration, and painful sensitivity to sound. Animals eventually die from exhaustion or asphyxiation. Death typically occurs within one to two hours of the onset of clinical signs, though it can take up to 24 hours or longer if the dose is low. Human victims who recover from strychnine poisoning have reported being conscious throughout these agonizing symptoms.

Alberta Environment and Parks, Fish and Wildlife Policy Division is registered to use strychnine as a wolf, coyote and black bear control predacide (Reg. No. 20410) until December 31, 2022.

Predacidal strychnine used to poison skunks for rabies control is registered to Alberta's Agriculture & Rural Development Regulatory Services Division (Reg. No. 24510).

Several low concentration strychnine products have been in contemporary use for registrants in Alberta and Saskatchewan to kill Richardson's ground squirrels. However, in 2020 the PMRA announced that the registration of these products would be phased out over three years in light of scientific evidence demonstrating that the products pose significant environmental risk to non-target wildlife that cannot be mitigated with label requirements.

In the past, the PMRA has claimed that because the use patterns for strychnine used to kill predators and skunks differ from those used to kill Richardson's ground squirrels – including because predacide products may only be used by provincial or municipal employees in the province of Alberta and they are used “infrequently” – the environmental risks posed by these strychnine products are nonetheless acceptable. After the PMRA reached this conclusion in its 2005 re-evaluation, the Alberta government began using strychnine in a highly controversial program – involving the placement of strychnine in baits intended to kill wolves on public lands in the A La Peche and Little Smoky caribou herd ranges. Alberta has used strychnine through this program almost every winter since 2005, targeting wolves in an attempt to boost declining caribou populations. This program has substantially increased the amount of strychnine being used on the Canadian landscape.

## **2) Compound 1080**

Compound 1080 is an extremely lethal chemical with a broad killing spectrum belonging to the “Fluoroacetic Acid” chemical family. It is labeled as a “super poison” by the US Environmental Protection Agency (“EPA”) and according to the World Health Organization, Compound 1080 is a Category 1a “Extremely Hazardous” poison (the most toxic category).

Compound 1080 causes intense and prolonged suffering, including excruciating pain for several hours or even days before a victim finally loses consciousness. Most animals that have been poisoned by Compound 1080 present a variety of signs, including: lethargy, retching and vomiting, anxiety, trembling, fecal and urinary incontinence, severe and prolonged convulsions, unusual vocalizations, hyperactivity, excessive salivation, muscular weakness, incoordination, hypersensitivity to sensory stimuli, and respiratory distress. Compound 1080 creates organ disorders, which can be extremely painful as essential cellular processes break down. Compound 1080 eventually causes death as a result of cardiac failure, central nervous system failure, or respiratory arrest.

Although Compound 1080 does not readily bioaccumulate in animal tissue, it can persist in carcasses at hazardous concentrations that remain lethal to various scavengers, both mammalian and avian, for several months. For instance, research in New Zealand demonstrated that after 75 days, carcasses of possums poisoned with Compound 1080 still posed a serious risk to dogs.

Depending on dose, symptoms generally can begin hours after ingestion of Compound 1080, during which time animals can travel vast distances from a bait site. Scavenging birds consume poison remaining in the digestive system of poisoned animals and fly away prior to succumbing to death, further spreading this poison, and making the true biological cost of its use in the Canadian wilderness difficult to determine.

Like strychnine, Compound 1080 is an indiscriminate poison. It has killed humans, pets, eagles, badgers, bobcats, raccoons, bears, wolves, coyotes and various other wildlife species in North America. Animals that ingest non-lethal doses of the poison have reduced survival after being weakened, as individuals depend upon alertness, agility, and coordination to survive. If they recover, these animals may experience long-term effects of toxicity.

Compound 1080 is believed to be at least partly responsible for the decline of several species at risk in North America, including the burrowing owl, swift fox, California condor, and black-footed ferret. Alberta allows the placement of Compound 1080 within the home ranges of several federally listed species at risk that scavenge. Other sensitive scavenging mammals and birds are listed provincially with at risk status, putting them at risk of primary and secondary poisoning.

Despite its highly controversial use as a predator control substance and the numerous and varied risks it presents to the environment and the health and safety of Canadians, Compound 1080 is still used in Alberta farming to kill wolves and coyotes suspected of preying on farmed animals. The poison is available in two forms: (i) 5mg tablets which are placed in meat baits set out to attract predator(s), and (ii) 60ml liquid bladders that fill collars placed around the necks of sheep or goats. These devices, known as Livestock Protection Collars (“LPCs”), contain liquid packets of Compound 1080 intended to kill canids should a neck bite occur.<sup>2</sup> These collars can also rupture unintentionally or fall off and become lost.

Saskatchewan recently withdrew the registration of its products due to infrequent use for many years, making Alberta the last jurisdiction in Canada to use both strychnine and Compound 1080.

### **3) Ongoing efforts to ban strychnine and Compound 1080 in Canada**

Canadian animal and environmental protection groups have been advocating for years for the cancellation of the registration of pest control products containing strychnine and Compound 1080. For instance, in an open letter to the PMRA in 2018, 50 scientists and organizations requested that predacides containing strychnine and Compound 1080 be

---

<sup>2</sup> Note that the PMRA confirmed today that although it is not reflected in the Proposed Re-evaluation Decision, Sodium Monofluoroacetate Restricted Toxic Collar Solution (Reg. No. 24512) is no longer registered as of July 4, 2022.

banned across Canada, expressing concern that their use violates several established professional standards.<sup>3</sup> The Canadian Veterinary Medical Association considers both poisons to be inhumane.<sup>4</sup>

More recently, in December of 2020, Wolf Awareness and Animal Justice, on behalf of a coalition of 13 environmental and animal protection groups, submitted requests for special review under s 17 of the PCPA regarding pest control products containing strychnine and Compound 1080. The basis for those requests was that:

- Health Canada has failed to collect enough information in order to determine whether the serious environmental and health risks posed by wolf, coyote, skunk, and bear-killing products containing strychnine and Compound 1080 are acceptable.
- These poisons pose unacceptably high environmental risks in the form of poisonings of non-target animals throughout the ecosystems in which they are placed. Conversely, the value of these products is unacceptably low given that placing indiscriminate poisons in the environment is not a necessary or effective way to protect farmed animals or at risk caribou.
- Evidence obtained through access to information requests shows there are persistent problems with a lack of compliance with, and enforcement of, rules for the use, storage, and handling of these products. Non-compliance with label requirements increases risks to human health and the environment.

The Minister declined to conduct special reviews of these products, instead indicating that the information set out in the requests would be considered as part of the present re-evaluation.

## **B. INADEQUATE PUBLIC CONSULTATION**

The use of strychnine and Compound 1080 to kill wolves, coyotes, and black bears is a matter of significant public interest. A December 2020 poll conducted by Environics shows that the majority of Canadians oppose the use of these products, with 69% of the view that the animal welfare risks they pose are unacceptable.

Supporters of our organizations have expressed significant interest in providing comments to the PMRA regarding the Proposed Re-evaluation Decision. However, the approach taken by the PMRA to its public consultation has prevented many of these individuals from participating in the consultation. Under “How to get involved”, the online notice states that “Step 1” is to request the full consultation document by contacting the publications office. The full document should have been made available online to ensure meaningful opportunity for public

---

<sup>3</sup> See [https://docs.wixstatic.com/ugd/4bd11b\\_3e153cee4f654cf4b65d47f7e7faf707.pdf](https://docs.wixstatic.com/ugd/4bd11b_3e153cee4f654cf4b65d47f7e7faf707.pdf)

<sup>4</sup> See <https://www.canadianveterinarians.net/related-resources/cvma-comments-on-health-canada-s-consultation-on-humane-vertebrate-pest-control/>.

consultation. “Step 2” is to submit comments using the PMRA’s Publication Section. However, the Consultation Comment Form is difficult to locate (requiring individuals to navigate through multiple pages) and for a significant portion of the 90d consultation period, the Proposed Re-evaluation Decision was not even listed as a consultation document in the drop-down menu for open consultations regarding which comments could be provided. For these reasons, our organizations responded to numerous requests for assistance from supporters attempting to navigate through the online form.

Nonetheless, we are aware that more than 5,500 individuals wrote in to express their concerns via email using Animal Justice’s action alert alone. This illustrates that this is a matter of significant concern to Canadians.

Finally, groups wishing to review the data and information from pesticide manufacturers, published scientific reports and other regulatory agencies which were considered by the PMRA in the re-evaluation were told that it would take several weeks for the data and information to be released given that the Agency needed to review it to identify confidential test data or business information. This delay has further hindered groups’ ability to meaningfully review and comment on the Proposed Re-evaluation Decision. Although approximately two individual groups were provided a two week extension due to this delay, a number of groups have been working collaboratively to comment on the Proposed Re-evaluation Decision. The deadline for all members of the public should have also been extended. Because the comprehensive scientific analysis on which our collective comments are based is not yet complete, the present comments are preliminary in nature. We rely upon and support the comments of Wolf Awareness which will be filed in accordance with that group’s newly extended deadline for comment.

### **C. SUMMARY OF CONCERNS REGARDING THE PROPOSED DECISION**

The PMRA downplays the environmental risks posed by strychnine and Compound 1080 in its Proposed Re-evaluation Decision, stating that there is “a risk of death to individual non-target animals who are exposed” to the poisons. “Risk of death” to individuals is an understatement – there is virtual certainty that these products will cause intense and prolonged pain and suffering followed by death to hundreds of animals throughout the ecosystems in which they are used each year. However, as noted above the PMRA has decided to ignore pain and suffering caused to animals in its re-evaluation.

Even by ignoring these considerations, the scientific evidence is still clear that the environmental risks posed by strychnine and Compound 1080 are unacceptably high and their value is unacceptably low. The PCPA deems a product “acceptable” only if “there is reasonable certainty that no harm to human health, future generations or the environment will result from

exposure to or use of the product.” That bar is clearly not met with respect to these products. The registrations for products containing these poisons should be cancelled immediately.

### **1) Lack of science-based quantitative assessment of environmental risk**

The PMRA has failed to conduct deterministic environmental risk assessments for predacidal strychnine products, which is in direct violation of s 7(7) of the PCPA:

#### **Scientific approach**

- (7) In evaluating the health and environmental risks of a pest control product and in determining whether those risks are acceptable, the Minister shall
- (a) apply a scientifically based approach...

Rather than conducting a scientific or quantitative assessment, the PMRA appears to have largely summarized the toxicant use records provided by the registrant (Alberta). The Agency qualitatively assessed the registrant-supplied information and decided the risks were acceptable.

In past re-evaluations, the PCPA’s approach to assessing environmental risk to non-target species (e.g. Richardson’s ground squirrels), as with that of the U.S. EPA, has involved calculating risk quotients. Calculation of risk quotients is a common ecotoxicological measure and represents the “scientifically based approach” mandated in the Act. The calculation of risk quotients based on estimated environmental concentration (EEC) and no effect concentration/no observed effect concentrations (NOEC) is internationally recognized as the appropriate way to measure ecotoxicological risk. Based on the PMRA's past calculation of the risk quotient for rodenticidal strychnine – which has a significantly lower concentration of strychnine – and the Agency's subsequent decision that the risk is unacceptable, predacidal strychnine's risk to the environment is also unacceptable.

That PMRA failed to conduct this most basic element of a re-evaluation is deeply troubling and in itself requires that PMRA abandon the proposal to maintain registration of predacidal strychnine and Compound 1080 products.

Furthermore, the Agency’s determination that the risk to non-target populations is low is entirely unsubstantiated; the Agency provided no population data to demonstrate that non-target species populations are not at risk of local extirpation based on the use of these predacides, particularly scavenging species which consume a significant amount of carcasses (e.g. bears, raptors, coyotes, wolverine, cougar) and which are naturally at low densities on the landscape due to their trophic level. Risks to such non-target species are not well understood because there is a lack of data on population sizes for most species. Consistent with the precautionary principle of environmental law, action to prevent harm is necessary.

Finally, we note that the PMRA's focus on population-level risks alone is inconsistent with the PCPA, which defines "environmental risk" as being harm to the environment, including its biodiversity. Environment is defined broadly as including all living organisms and the interacting natural systems that make up the Earth. The Act does not suggest that harm to biological diversity and ecosystems is acceptable so long as an entire population of animals will not be killed or harmed.

## **2) Lack of science-based quantitative assessment of value**

The PMRA itself points out that the registrant has failed to demonstrate, based on records provided, that landowners have used alternative methods to prevent or correct livestock losses to predators and therefore the use of predacides contravenes labels that require this integrated pest management and precautionary approach. Indeed, as Alberta is the only province that uses these predacides it is clear that alternatives are both available and being used throughout the rest of the country. Without data regarding alternative methods, it is impossible for the PMRA to make an assessment of the value of strychnine and Compound 1080 as predacides within the context of livestock conflicts with wolves and coyotes. Without such assessments, the registration of these pesticides cannot be maintained.

The PMRA has also failed to complete an assessment of the value of strychnine as a pesticide within the context of caribou and other at-risk population recovery. Alberta is the only jurisdiction in Canada that uses strychnine as part of a caribou recovery program. Further, Alberta uses strychnine in a single caribou range of two overlapping caribou herds/Local Population Units (A La Peche and Little Smoky caribou). Therefore, any quantitative assessment of value would be supported only by pseudoreplicates of annual caribou population size or growth rate and how it varies according to the impact of the use of strychnine (e.g. growth rate or density of wolf population, or predation rate of wolves on caribou). Unfortunately, the Alberta government's caribou program is so lacking in baseline population data of wolves that they cannot even measure the impact of strychnine on wolves, and therefore cannot provide a quantitative assessment of the value of this pesticide in their program. It is inappropriate for the PMRA to rely on an opinion, let alone an opinion of the registrant who has a biased interest in continuing to use a pesticide, to satisfy the value assessment as set out in the PCPA.

Lastly, we are concerned that the lack of recent use of strychnine to target skunks has led to the PMRA's decision to forego any science-based evaluations of its risk and value as a tool to reduce rabies. We cannot support the ongoing use of this pesticide product without data and oppose its use based on the above-noted harm and suffering that strychnine causes as well as the environmental risks posed to non-target species.



Without proper scientific evaluation of the associated values and/or environmental risks presented, these products should not be registered for use in Canada. There is no way to responsibly or ethically evaluate these risks, thus, use of predacides should be abandoned and all registrations canceled.

### **3) Environmental risks are unlikely to be mitigated based on existing or proposed label changes**

The registrant so frequently failed to provide enough information in their records that it is impossible for the PMRA to be able to determine whether the proposed label requirements will mitigate the risk of non-target poisoning. This mitigation seems improbable, given that data that has already been presented in the above-noted special review request regarding predacidal strychnine shows how frequently baits are consumed without carcasses being found, even when label requirements are met by the registrant (e.g. in Alberta's caribou program when bait site checks every 7 days, and baits were laid according to label conditions in terms of placement and number of baits used). Indeed, the PMRA also indicated in the Proposed Re-evaluation Decision document that over 18,000 Compound 1080 tablets have been set out in the past decade, with a carcass recovery returning fewer than 100 wolves, indicating that thousands of baits have entered the food chain in Alberta alone in the last decade.

Lastly, the registrant provided no evidence within their records for the PMRA to be able to assess whether label changes to predacidal Compound 1080 in 2014 were followed, or that the environmental risks associated with its use were mitigated due to the label changes. Because label changes have continuously failed to mitigate environmental risk, and are likely to continue to fail in sufficiently mitigating these risks, it is unreasonable for the PMRA to place even greater reliance on the registrant to steward the use of these pesticides.

### **4) Lack of transparency with the public and stakeholders in re-evaluation and consultation process**

The ability of our groups, and the public more broadly, to meaningfully participate in this consultation has been significantly hindered by the lack of transparency outlined above. The PMRA did not make public their monograph or data summaries of registrant records, and has consistently failed to provide records in a timely fashion to groups formally requesting these records in requests under the *Access to Information Act*. The lengthy delay in acquiring these essential documents and the selective extension of the consultation deadline has had a significant adverse impact on our ability to provide more detailed and comprehensive comments on the Proposed Re-evaluation Decision to maintain registration of these predacides.

## **D. CONCLUSION**

Animal Justice Canada, The Fur-Bearers, Coyote Watch Canada, the David Suzuki Foundation, and Cochrane Ecological Institute oppose the Proposed Re-evaluation Decision and urge the PMRA to conduct a comprehensive scientific review of both the environmental risks of products containing strychnine and Compound 1080 as well as their value. As noted above, our organizations support and rely upon the more comprehensive scientific analysis of the Proposed Decision that will be submitted by Wolf Awareness in the coming weeks consistent with the comment deadline extension that group has been granted.

Yours truly,

Kaitlyn Mitchell  
Staff lawyer - Animal Justice Canada

Lesley Fox  
Executive Director - The Fur-Bearers

Lesley Sampson  
Founding Executive Director - Coyote Watch Canada

Lisa Gue  
Manager, National Policy - David Suzuki Foundation

Clio Smeeton  
President - Cochrane Ecological Institute