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Commissioner of the Environment
and Sustainable Development
Office of the Auditor General of Canada
240 Sparks Street
Ottawa, Ontario
K1A 0G6

Attention: Julie Gelfand

Dear Ms. Gelfand:

Re: *Petition to the Commissioner of the Environment and Sustainable Resource Development on Tailings Ponds Impacts on Migratory Birds*

I write to you on behalf of Greenpeace Canada and the Alberta Wilderness Association pursuant to section 22 of the *Auditor General Act* to petition your office to seek answers to questions regarding the federal government's regulation and enforcement activities relating to migratory birds and tailings ponds in the northern Alberta oil sands mines.

Context

Tailings Ponds

Tailings are a waste by-product from the oil sands extraction processes used in mining operations. Tailings consist of a mix of water, sand, silt, clay, contaminants and unrecovered hydrocarbons.¹ For every barrel of bitumen mined from the oil sands, 1.5 barrels of toxic tailings waste is produced.² Tailings are stored indefinitely in open lakes, which **currently cover more**

¹ Jennifer Grant, Simon Dyer and Dan Woynilowicz, *Fact or Fiction* (2008) Pembina Institute, online: <pembina.org/reports/Fact_or_Fiction-report.pdf> at 5.

² Pembina Institute, *Mining vs In Situ*, online: <pembina.org/reports/Fact_or_Fiction-report.pdf>, at 3.

than 220 km² in northeastern Alberta and contain over 976 billion litres of liquid waste.³ By 2008, the areal extent of tailing ponds within the mineable oil sands region exceeded the extent of natural water bodies by 42%.

Impacts to Migratory Birds

The mineable oil sands area is located along a convergence zone of migratory bird flyways en-route to the Peace-Athabasca Delta, which is the most important waterfowl nesting and staging area in North America. **Approximately 1.5 million migratory birds use the delta during the spring and fall migrations.**⁴ Migratory birds have high probabilities of encountering the tailings ponds because of the close proximity of the Peace-Athabasca Delta and because migratory birds are attracted to ponds along the flyway. During migration, birds may stop to rest and seek food or mates on tailings ponds, particularly when those ponds are ice-free in early spring or during storm events that can cause migrating birds to land abruptly.⁵ In all, 214 bird species have been recorded in the Delta, all of which must fly over or near the oil sands region during migration.⁶

Oil sands development is a serious threat to migratory birds due to habitat loss, water contamination, and oiling risk from tailings ponds. The tailings ponds are hazardous to migratory birds because fresh tailings contain several substances with known toxicity to wildlife, including bitumen, naphthenic acids, polycyclic aromatic hydrocarbons, heavy metals, and concentrated salts. Even small amounts of bitumen can coat feathers to impede flight, buoyancy, thermoregulation, and foraging. Bitumen transferred from the feathers of a nesting bird to the surface of eggs is toxic to developing embryos.⁷

These toxic tailings ponds are also replacing the natural habitat of migratory birds. Birds land in the tailings ponds thinking that they are a natural water body, but then discover too late that they are landing in a death trap. Migratory birds are particularly vulnerable in the spring, where the warm effluent in tailings ponds creates open water attractive to migrating birds while natural water bodies remain frozen.⁸

Whooping cranes are particularly susceptible to the risk of landing in a tailings pond because the entire global population of wild, migratory whooping cranes migrates twice each year on a path that overlaps with the oil sands mineable region. In addition, wetland mosaics provide the most suitable stopover habitat for whooping cranes and should be available every ten miles—at a minimum—throughout their migratory corridor. Oil sands development seriously threatens intact

³ Government of Alberta, “Oil Sands Information Portal”, online: <osip.alberta.ca/map/>; Government of Alberta, *Lower Athabasca Region: Tailings Management Framework for the Mineable Athabasca Oil Sands* (2015), online: <aep.alberta.ca/lands-forests/cumulative-effects/regional-planning/documents/LARP-TailingsMgtAthabascaOilsands-Mar2015.pdf>.

⁴ Colleen Cassady St. Clair, *Final Report of the Research on Avian Protection Project (2010-2014)* (2014) Research on Aviation Protection Project, Department of Biological Sciences, University of Alberta, at 15.

⁵ *Ibid.*

⁶ Mikisew Cree First Nation, *Petition to the World Heritage Committee Requesting the Inclusion of Wood Buffalo National Park on the List of World Heritage in Danger* (2014), at 26.

⁷ *Supra* note 4.

⁸ *Supra* note 4.

wetland mosaics as stopover habitat.⁹ Environment Canada has stated that it considers it especially important to avoid any mortality to Whooping Cranes as a species at risk. It has also confirmed that because of the small population size and endangered status of this species, the mortality of even a small number of birds could have a substantial population-level effect.¹⁰

Dr. Colleen Cassady St. Clair of the University of Alberta recently found that **approximately 200,000 birds land on tailings ponds each year** despite existing deterrents. Dr. Cassady St. Clair's research also suggests that **there are more incidents occurring that are never reported.**¹¹ **Any numbers reported are likely an under-estimate of bird casualties** for several reasons:

- many birds migrate at night but no night-time monitoring of landings occurs;
- bitumen-killed birds may sink before detection; and
- birds that land on tailings ponds but are able to fly off are not tracked to determine lethal or sub-lethal effects.

Birds representing 94 species have been reported to have landed on tailings ponds.¹² This number likely represents a fraction of the total number of birds actually landing on ponds, as surveys were only conducted on a portion of the ponds, and only for a short period of time each day.

As of 2010, **43 species of birds**—mostly birds protected by the *Migratory Bird Convention Act*— **have died from exposure to oil sands tailings ponds.** At least nine species protected by the *Migratory Bird Convention Act* have lost over 50 percent of their population over the past 40 to 50 years, including horned grebe, lesser yellowlegs, short-billed dowitcher, boreal chickadee, olive-sided flycatcher, evening grosbeak, lesser scaup, greater scaup, and northern pintail. These waterfowl are a widely reported casualty of tailings ponds.¹³

Although the total bird mortality attributable to tailings ponds is not known with certainty, it has been estimated to reach approximately **5,000 birds annually.**¹⁴

There have also been several mass-casualties that have been publically reported:

- In 2008 **more than 1,600 birds** died after landing in a Syncrude tailings pond. Syncrude was found guilty of committing offences under the federal *Migratory Birds Convention Act* and Alberta's *Environmental Protection and Enhancement Act* and was fined \$3 million.

⁹ Earthjustice and Ecojustice, *Petition for certification of Canada pursuant to 22 U.S.C. § 1978 for failing to prevent or mitigate the impacts of tar sands extraction on 130 migratory bird species, including whooping cranes, as well as on woodland caribou*, (2011), online: <earthjustice.org/sites/default/files/TarSandsPellyPetitionSept222011CORRECTED.pdf>. See also Kevin P. Timoney, *Impaired Wetlands in a Damaged Landscape: The Legacy of Bitumen Exploitation in Canada* (Switzerland: Springer International Publishing, 2015).

¹⁰ Government of Canada, Submission to the Joint Review Panel for the Shell Canada Jack Pine Expansion Proposal, 2012.

¹¹ *Supra* note 4 at 50.

¹² Colleen Cassady St. Clair et al., *2011 Annual Report of the Regional Bird Monitoring Program for the Oil Sands Region* (2012) Research on Aviation Protection Project, Department of Biological Sciences, University of Alberta, at 3.

¹³ *Supra* note 9.

¹⁴ Kevin P. Timoney and Peter Lee, "Does the Alberta Tar Sands Industry Pollute? The Scientific Evidence" (2009) 3 *The Open Cons Biol Journ* 65-81.

- In October 2010, **more than 550 birds** had to be destroyed when an early winter storm forced the birds to land on the toxic waste ponds belonging to Syncrude and Suncor. **No enforcement action was taken by the provincial or federal government** as there was inclement weather at the time of the incident.¹⁵
- In November 2014, **122 birds** were reported dead after landing at three different tailings ponds in the Athabasca oilsands (CNRL Horizon, Syncrude Mildred Lake and Suncor Energy).¹⁶ **No enforcement action was taken by the provincial or federal government.** The Alberta Energy Regulator cited the poor weather conditions and time of day (night time) as a reason for failing to prosecute the operators.¹⁷

According to Dr. Cassidy St. Clair, **fatal landings will continue because of ever-increasing industry activity** in an area that is home to more than a million migratory birds each year. Climate change – which is causing more storms – has also been identified as a concern, as inclement weather increases the risk of bird landings.¹⁸

Lack of Regulation

As part of the provincial environmental approval process, oil sands operators are required to submit a Waterfowl Protection Plan (“WPP”) which specifies how they will monitor the number of birds coming in contact with their tailings ponds and how they will endeavor to minimize those contacts.

However, **neither level of government has established scientifically defensible or legally binding bird deterrent standards that all operators must comply with.** That means that there is no set standard that must be met by operators when submitting their WPPs. Although several academic papers and reports refer to the “industry-standard deterrent system”, there is no publicly available document providing adequate detail of this standard, nor is there any information about whether government requires that the industry standard be followed. Each operator is allowed to put forward and implement its own bird deterrence program without any binding direction from the government as to what deterrent standard must be met. The result is that methods employed to deter landings vary widely among oil sands operators.

In any event, it is important to note that while the development of legally binding bird deterrent requirements would ensure consistent application of best available standards to existing tailings ponds - thereby potentially minimizing some of the impacts to migratory birds - there would still be unacceptable risks posed to migratory birds. As will be discussed in detail in the following section, no scientifically defensible bird deterrent system currently exists that can adequately deter birds from landing on tailings ponds.

¹⁵ The Canadian Press, “Oil sands death of hundreds of ducks in 2010 blamed on weather, no charges laid” (4 October 2012) *National Post*, online: <nationalpost.com>.

¹⁶ Emily Mertz, “122 birds dead after landing on three separate oilsands sites” (6 November 2014) *Global News*, online: <globalnews.ca>.

¹⁷ *FOIP* document, 2014-G-0072 at 3.

¹⁸ The Canadian Press, “Ducks killed in Alberta oilsands tailings pond will result in no charges laid” (4 October 2012) *Huffington Post*, online: <huffingtonpost.ca>.

Deterrent Efficacy

There is no empirical evidence that the standards contained in the WPPs authorized to date, or any industry-standard deterrent system, are effective in deterring birds. To the contrary, the evidence outlined above strongly suggests that the bird deterrent systems currently in place are ineffective in deterring birds from tailings ponds.

The efficacy of the deterrents used on oil sands tailings ponds are not completely understood because studies are typically conducted during the daytime, and many birds migrate at night. No study has looked at bird behaviour or deterrent efficacy at night. **Studies that have been conducted clearly demonstrate the lack of deterrent efficacy.** One study found that relative to a non-deterrent control, **the odds of landing at a tailings pond protected by industry-standard bird deterrents was 38% for ducks and 69% for shorebirds.**¹⁹ Further, a 2013 monitoring program found that when two swallow species that had abnormally high flyover rates are removed from the analysis, 63% of observed birds with a federal or Alberta species-at-risk designation landed on tailings ponds.²⁰

Such odds are unacceptably high, and can be extrapolated to increase substantially during the nighttime, when more birds are migrating and are more likely to come into contact with tailings ponds.

In any event, **deterrent systems are not a long-term solution to the problem of avian mortality in the Oil Sands.**²¹ Regardless of the efficacy of any particular deterrent system, birds will land on the closest available water source during inclement weather conditions, whether or not deterrents are in place.

A review of deterrent systems used in tar sands tailings ponds submitted as part of the Shell Pierre River Mine and Jackpine Mine Expansion hearings concluded the following:

“Unfortunately, bird interactions with tailings ponds have been predicted to continue into the future. For the proposed Joslyn North Mine Project, the proponent has predicted that the probability of “*waterfowl interaction with tailings ponds*” as being “*likely*” and that a worst case scenario is also “*likely*” with a magnitude of the effect to be “*serious to major*” (Total E&P Joslyn Ltd. 2010, Accidents and Malfunctions; Table 1-1). mortality events at the Shell Muskeg River and Jackpine Mines continue to occur even after the implementation of their Bird Deterrent Programs. In light of this evidence, and the limitations of the system discussed above, Shell appears to be overly confident in the BirdAvert™ system. The effectiveness of this system remains questionable.”²²

¹⁹ Robert A. Ronconi and Colleen Cassady St. Clair, “Efficacy of a radar-activated on-demand system for deterring waterfowl from oil sands tailings ponds” (2006) *Journal of Applied Ecology* 43:1 at 116.

²⁰ *Supra* note 4, Chapter 5, Appendix A, Table 9A (Flyovers and landings by species at risk at any of the lease sites for process-affected ponds in 2013).

²¹ Management and Solutions in Environmental Management, *Avian Hazard Map - Shell Hearing Submission: Prepared for Athabasca Chipewyan First Nation* (2012), online: <ceaa.gc.ca/050/documents_staticpost/59540/82080/Appendix_E_-_Part_14.pdf> at 13.

²² *Ibid* at 14.

Lack of Enforcement

Enforcement measures can be taken by the federal government pursuant to section 5.1(1) of the *Migratory Birds Convention Act*, 1994:

5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

Enforcement measures can also be taken where the migratory bird is classified as a species at risk, pursuant to section 32(1) of the *Species at Risk Act*, 2002:

32. (1) No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.

Despite these enforcement mechanisms being at the federal government's disposal, we continue to see a lack of enforcement.

As set out above, although the exact number of birds being impacted is unknown, we do know that impacts to migratory birds due to tailings ponds are occurring on a continual basis, with estimates as high as 5,000 deaths a year. We also see discrete incidents where hundreds of birds are reported dead at one time. The evidence is also clear that bird deterrents are ineffective in preventing many impacts to birds, particularly during the night and in inclement weather. Nonetheless, the approach taken at both levels of government is to allow operators to rely on the faulty bird deterrent systems as a due diligence defence to avoid legal prosecution.

The due diligence standard cannot be deemed to have been met simply on the basis of having bird deterrent systems in place when scientific evidence confirms that they are ineffective in preventing impacts to birds. Given that they are ineffective even during the day, and in good weather conditions, the probable heightened risk of ineffective deterrent efficacy at night or during inclement weather is unacceptable. Changing weather conditions—including fog, wind, snow, and freezing temperatures—are a frequent reality in northern Alberta. It is insufficient for operators to have bird deterrent systems that cannot deter a significant proportion of waterfowl during optimal weather conditions. That should not be the due diligence standard.

Rather, the standard required must be a bird deterrent system that accounts for non-optimal weather conditions and that is fully operational during all hours of the day and night.. If tailings ponds cannot be operated in a safe manner at different times of day and in varying weather conditions then they should not be permitted at all, as allowing such operations would be a contravention of the federal government's obligations under the *Migratory Birds Convention Act*

and the *Species at Risk Act*. At the very least, operators should be held responsible under the law and should not be able to rely on the due diligence defence to avoid prosecution. Nonetheless, we continue to see a lack of enforcement action being taken against operators for potential violations of these federal laws.

Questions

- 1. Why has the evidence of ongoing impacts to migratory birds not resulted in enforcement actions being taken by Environment Canada pursuant to the *Migratory Birds Convention Act* and the *Species at Risk Act*?**
- 2. How does the federal government justify continued approval of oil sands mines that clearly cause significant and ongoing impacts to migratory birds given its legal responsibilities under the *Migratory Birds Convention Act* and the *Species at Risk Act*?**
- 3. How does the federal government justify permitting operators to rely on the due diligence defence when the evidence is clear that the current bird deterrent systems are at best partially ineffective, and at worst wholly ineffective, in preventing impacts to migratory birds?**
- 4. How does the federal government justify its lack of involvement in conducting research and monitoring regarding impacts of tailings ponds on migratory birds and ways to mitigate the impacts?**

Thank you in advance for your consideration of this request.

Sincerely,



Melissa Gorrie
Barrister and Solicitor, Ecojustice
On behalf of the Petitioners

cc. Greenpeace Canada
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