

ISSUE BRIEF:

MIGRATORY BIRDS AND TAR SANDS



INTRODUCTION*

Every spring we watch in awe as hundreds of species of songbirds and waterfowl migrate across the continent on their way to summer habitat where they breed and live. In autumn, these birds and their offspring again pass through our backyards, fields, wetlands, lakes, rivers and forests.



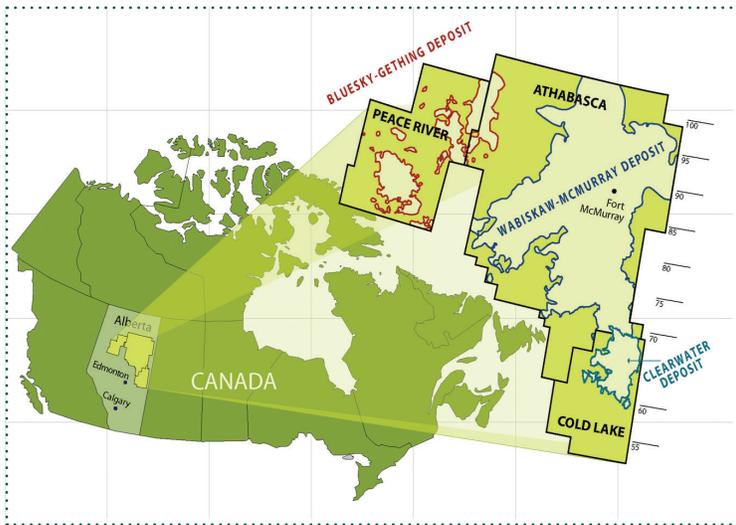
More than half of United States birds spend a large part of the year outside of the U.S.¹ Many depend on habitat in Canada – the boreal forest – which is being ravaged by one of the largest and most pernicious industrial undertakings our civilization has ever known.

A substantial portion of northern breeding habitat for migratory birds is under siege. Industry thirst to develop a particularly polluting form of oil known as tar sands is resulting in the destruction, fragmentation and poisoning of one of the most beautiful and important wildlife habitats in North America – one relied on by at least 130 species of internationally protected migratory birds and waterfowl, including the endangered Whooping Crane.



Tar sands development is resulting in the devastation of invaluable wildlife habitat in violation of international treaties designed to protect the shared migratory wildlife of Canada and the United States. Industry and Canadian officials hope this destruction will be hidden away and go unnoticed.

* This issue brief was authored by Jim Murphy at National Wildlife Federation. Sarah Burt and Jessica Lawrence at Earthjustice, and Melissa Gorrie at Ecojustice Canada contributed substantially to the material and research used to write this issue brief.



Alberta's oil sands areas

We cannot allow that to happen. The United States has a big say in whether or not land-locked tar sands oil can get to market, and further tar sands development occurs. In fact, much of the infrastructure the tar sands industry needs to get this dirty oil to international markets must first be approved by the U.S. State Department. Without market access, it is unlikely the industry can realize enormous expansion plans that threaten a habitat area the size of Florida.



North America's Boreal Forest
A Global Treasure and Haven for Birds

Stretching from Alaska across Canada, the vast Boreal Forest is one of the largest unspoiled forest ecosystems remaining on Earth. Many of the birds that migrate through or winter in our yards and neighborhoods breed in North American Boreal Forest.

- The Boreal supports over 300 species of birds - that's nearly 50% of the species found in the U.S. and Canada! And over 90% of those species migrate to or through the continental U.S. for the winter.
- Up to 3 billion warblers, thrushes, sparrows, flycatchers, hawks and other land birds breed in the Boreal and up to 5 billion - adults and their new young - migrate south from the Boreal each fall. Of these almost 1 billion stay in the U.S. for the winter.
- 30% of North America's landbirds (3 billion) 40% of North America's waterfowl (26 million) and 30% of its shorebirds (seven million) nest in the wetlands of the Boreal Forest.

Map created by eNature/NWF supported by The Pew Charitable Trusts

Boreal Forest migratory bird map

Saying no to tar sands is a critical pillar in an effective strategy to protect wildlife from carbon pollution. Tar sands is a risky, carbon intensive fuel that is not needed to meet the United States' energy demands. Indeed, the tar sands industry is mainly seeking to transport spill prone tar sands through the United States to access world markets, not supply us with oil. Instead of allowing harmful tar sands development, we can and must promote and invest in safe, renewable energy.

The U.S. Department of Interior has a duty to report to the President that Canada is violating its obligations to protect wildlife. National Wildlife Federation and other conservation groups have requested that the Interior Department Secretary investigate tar sands activities and report to the President whether or not tar sands development undermines Canada's obligations to protect migratory birds. The facts clearly support a determination that Canada is not protecting migratory birds and wildlife. The President should then pressure Canada to live up to its century-long obligations, even if this requires punitive measures.

This report examines the threat of tar sands to North America's treasured migratory songbirds and waterfowl, and what can be done to stop this threat.

TAR SANDS DEVELOPMENT:

A direct threat to North America's birds

What are the Tar Sands?

Tar sands are a mixture of sand, clay, water, and a dense and extremely viscous, tar-like form of petroleum called bitumen.² After extraction, the bitumen is separated from the sand, clay and water and is eventually refined into transportation fuel, such as gasoline. Tar sands is the carbon-intensive oil that is proposed to be pumped through the controversial Keystone XL pipeline and other United States pipelines, such as the Alberta Clipper line in the midwest.

Tar sands are often shipped by diluting the peanut butter like bitumen with a toxic diluent derived from natural gas condensate, resulting in a substance called diluted bitumen.³ When it spills, diluted bitumen is nearly impossible to clean up as was made apparent by the tragic tar sands pipeline spills that devastated the Kalamazoo River in July of 2010 and Mayflower, Arkansas in March of 2013.

Today, the tar sands industry is producing about two million barrels a day of crude oil. They have plans to double that production in less than ten years.⁴ **The overall region threatened by tar sands development is equal to the size of Florida.**⁵

In addition to carbon pollution and tragic spill risks, tar sands development has another dirty underside. Extracting this tar-like substance results in immense devastation to North America's most productive bird and waterfowl habitat. Getting tar sands out of the ground requires enormously invasive and resource intensive processes that destroy immense areas outright by strip mining, or severely fragments habitat via in-situ (a form of drilling) operations.

How Tar Sands Development Threaten Birds and Waterfowl

This massive destruction and fragmentation is occurring in the heart of North America's boreal forest, which serves as breeding habitat for countless birds. Every year, millions of songbirds and waterfowl migrate through our forests, wetlands, lakes, and backyards, many en route to the boreal forest of Canada.⁶ In fact, wildlife watching in the United States, including bird watching, is by far the most popular wildlife based activity and brings tremendous economic revenue.⁷ In addition, sportsmen and women flock to local wetlands and lakes to hunt waterfowl, passing a cherished tradition from parent to child, intimately connecting with nature, and generating further economic revenue. The total revenue from wildlife related economic activity in 2011 was just under \$145 billion.⁸



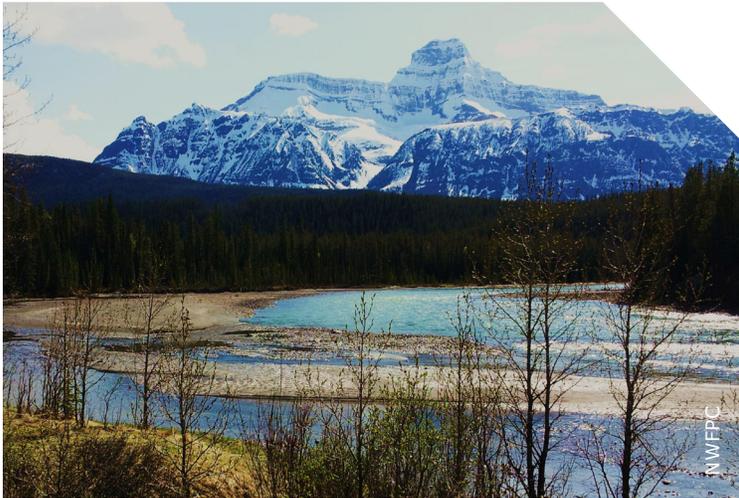
Alberta Oil sands map



Alberta tar sands

Recognizing the value of protecting migratory birds and waterfowl, in 1916, the United States and Canada entered into the Migratory Bird Treaty, which gave rise to the Migratory Bird Convention, in order to protect this shared wildlife resource and the cultural heritage it sustains. Both countries agreed to assume obligations to protect migratory birds and waterfowl, and their habitats, from harm and destruction.

The boreal forest of northeast Alberta is an important breeding area for over 292 species of protected birds.⁹ Sadly, and contrary to the international protections the United States and Canada have honored for a century, tar sands development is threatening at least 130 species of internationally protected birds and waterfowl, including iconic species like whooping crane, common loon and trumpeter swan.¹⁰



The direct and indirect impacts to birds from tar sands development are immense. **Waterfowl and shorebirds land in tailings ponds that they mistake for natural water bodies and become oiled with waste bitumen and toxic elements. They then drown, die from hypothermia, or suffer from ingestion of toxins.**¹¹ Toxins from the tailings ponds and other pollutants from tar sands operations leak millions of gallons of toxic liquid waste into wetlands and forests each day, further contaminating habitat.¹² In-situ mining operations fragment thousands of acres of habitat with extensive pipeline and drilling equipment.¹³

As a significant contributor to climate change, tar sands – which according to the State Department’s own analysis is almost twenty percent more carbon pollution intensive than conventional oil on a well to wheel, or



Poisoning the Water and Air

Toxic pollutants from tar sands development sites contaminate nearby wetlands and waterways through direct water contamination or deposition of airborne particulates through rain or runoff.³⁷

Toxic pollutants from tar sands development have been documented in the famed Athabasca River system downstream from tar sands operations at levels greater than could have come from natural seepage from the bitumen layer.³⁸ Contaminants were also found in snowpack over 30 miles from tar sands pollution sources.³⁹ Mercury, arsenic and polycyclic aromatic hydrocarbons (a group of toxic chemicals referred to as PAHs, some of which are carcinogenic) have been found in the lower Athabasca River system and its tributary, the Muskeg River.⁴⁰ Significant releases of pollutants from tar sands operations caused by tailings ponds seepage, spills and a pipeline break into the Athabasca River have been documented repeatedly over the last forty-five years.⁴¹

Seepage from toxic tailings is a significant concern. Tailings ponds contain a toxic mixture of bitumen salts, naphthenic acids, and polycyclic aromatic hydrocarbons (PAHs) suspended in water, sand, silt, and fine clay.⁴² The ponds also contain heavy metals which can be toxic including arsenic, cadmium, copper, lead and zinc.⁴³

In 2009, the seepage rate from all tar sands tailings ponds was estimated at about 2.9

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lifecycle, basis¹⁴ – also impacts migratory birds by fueling shifting food supplies and wildfires in forests, droughts in wetlands, and causing dramatic changes in vegetation and predators.¹⁵



Tar Sands Extraction: A Dirty Business in the Heart of the Boreal Forest

The tar sands region sits in the heart of the boreal forest, which provides valuable and often irreplaceable habitat many bird species depend on, such as forests, peat bogs, grasslands, lakes, rivers, fens, swamps, marshes, and shallow ponds.¹⁶ The area is extremely sensitive and highly vulnerable to water pollution, as roughly forty percent of the area is wetlands that are frequently connected by groundwater or surface hydrology.¹⁷

Tar sands developments create huge open-pit mines, toxic waste tailings ponds, extraction wells, noisy compressor stations, refineries, upgrading facilities, and networks of new roads, drilling pads, seismic lines, and pipelines in this recently-pristine habitat.¹⁸ This infrastructure reduces wetlands and forest land area, fragments forest-based habitat, lowers the water table, and generates significant air and water pollution.¹⁹

The oil industry extracts tar sands in two ways, both of which are highly polluting and impactful. Tar sands within 250 feet of the surface are extracted through strip mining. Tar sands below this threshold must be extracted by *in situ* drilling, involving injection of high-pressure steam into wells to melt the bitumen so it can be pumped out.²⁰

million gallons per day.⁴⁴ Researchers noted that “[l]eakage of toxins from tailings ponds may be a concern for decades, if not for centuries.”⁴⁵ In addition, saline groundwater is used in drilling and then disposed of in small wastewater ponds, which can leak into and contaminate the wetlands that migratory birds depend upon.⁴⁶

Tar sands operations emit nitrogen oxides, into the air, which cause smog and are deposited into wetlands through rain and runoff, as well as causing algal blooms and increased aquatic plant growth, which leads to eutrophication and hypoxic conditions in wetlands.⁴⁷

Planned expansion of tar sands operations will result in further sulfur dioxide emissions that cause acid rain and are projected to negatively impact an areas of up to 390 square miles.⁴⁸ At least twenty-five regional lakes that will be affected already lack the capacity to buffer additional acidity, which harms aquatic life.⁴⁹

Tar sands oil production also generates three times the global warming pollution per barrel as conventional oil due to large amounts of energy needed for extraction, upgrading, and refining.⁵⁰ Carbon pollution from the Canadian oil sands is expected to reach 108 megatonnes by 2020—one fifth of Canada’s current national emissions.⁵¹

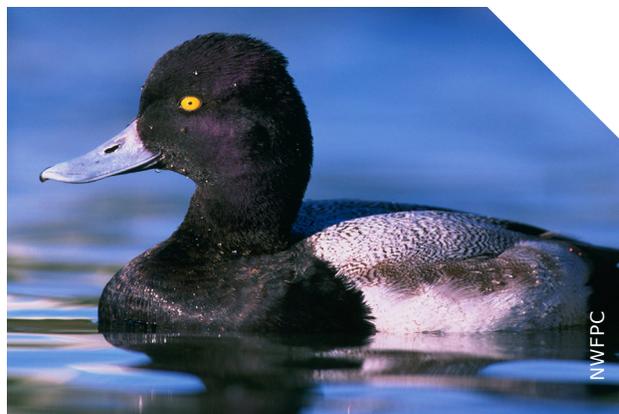
The growth in tar sands emissions alone will cancel out every other effort to reduce carbon emissions in Canada between now and 2020.⁵² Extracting and processing the estimated 315 billion barrels of crude oil from tar sands would emit roughly twenty-seven billion metric tons of CO₂ equivalent greenhouse gases. Burning this oil would release another 135 billion metric tons of carbon dioxide.⁵³

The extraction process for tar sands is highly energy and water intensive. By 2007, tar sands operations were permitted to remove enough water from nearby boreal forest water bodies like the Athabasca River to meet the needs of a city of three million people – and water removal is projected to *increase* by at least fifty percent as additional projects become operational.²¹

Current regulations are so weak that companies could continue to withdraw water well beyond safe ecological limits for many local species.²² Tar sands mining operations used about 170 million cubic meters of water in 2011, enough water to meet the needs of about 1.7 million people and a daily use equivalent to the amount needed to fill 309 Olympic swimming pools.²⁴ **Once used, the withdrawn water is severely polluted. Over ninety-five percent of the water tar sands operations withdraw from the Athabasca River becomes too polluted during processing to ever be returned.**²³

By 2010, there were ninety-five active tar sands projects, including eighty-nine in-situ drilling projects and six strip mines.²⁵ Strip mining, which involves clear-cutting forests and removing all vegetation, soil and earth above the tar sands layer, has already destroyed 256 square miles of natural landscape, with 586 square miles under active development – just one third of the total mineable area of 1850 square miles.²⁶ Studies have found no evidence that strip mined areas can be fully restored to their prior habitat conditions, despite elaborate restoration attempts and claims by industry.²⁷ To date, less one square mile of disturbed land has been certified as reclaimed, and even this certified land has not been returned to its natural state.²⁸

Initial processing of tar sands creates immense pollution problems for wildlife. To mine the tar sands, wetlands need to be drained, rivers diverted, and all trees and vegetation stripped from the surface.²⁹ Approximately four tonnes of material (two tonnes of soil and rock above the deposit and two tonnes of oil sands) must be mined to produce one barrel (forty-two gallons) of synthetic crude oil.³⁰ **Every two days, mining operations move enough tar sands material to fill Yankee Stadium.**³¹ For in situ production, well pads ranging in size from one to seven hectares (two and a half to seventeen acres) are cleared of all vegetation, and multiple pairs of horizontal wells are drilled into the bitumen-containing formation.³² Well pads generally have eight to twenty wells.³³



The population of lesser scaup, also known as the “little bluebill” for its distinctive broad, blue bill, has declined as much as seventy percent in the past thirty years.⁵⁹ These waterfowl are widely reported casualties of tailings ponds from tar sands development.⁶⁰ Additionally, they rely largely on the boreal forest for breeding, and while the cause of their decline is still not certain, it is suspected that contaminants and habitat alteration – perhaps resulting from climate change – are factors.⁶¹



Tailings ponds have resulted in the tragic death of countless waterfowl. In 2008, 1,600 ducks died in Syncrude tailings ponds.⁶² An October 2010 storm resulted in hundreds of ducks landing on a Suncor tailings pond near Fort McMurray, AB: at least 550 ducks were too oiled to save.⁶³ Efforts to deter birds from landing on ponds, like the scarecrow pictured, have limited effect.

The vast amounts of water that are used to process the tar sands material and separate the bitumen end up in tailings – a slurry of bitumen, water, sand, silt and fine clay particles – that is pumped to tailings ponds.³⁴ These enormous bodies of toxic water are some of the largest human-made structures in the world and, as of 2010, collectively cover an area over sixty-five square miles – about the size of Washington, D.C.³⁵ These toxic ponds are so large they are among only a few human-made structures that can be seen from space.³⁶

UNDERMINING OUR SHARED WILDLIFE HERITAGE

Tar sands development harms birds in multiple ways. Below are some of the primary ways tar sands development threatens North America’s wildlife heritage in birds.

Tailing Ponds = Bird Fatality

Tailing ponds are often fatal to birds. When waterbirds and shorebirds mistake tailings ponds for natural waterbodies and land in them, they can come into contact with oily bitumen wastes that weigh them down and cause them to become incapable of flight.⁵⁴ Birds can also absorb tar sands toxins through inhalation, ingestion, and skin contact.⁵⁵



Flickr: USFWS

As of 2010, forty-three species of birds protected by the Migratory Bird Convention have suffered fatalities from exposure to tar sands tailings ponds.⁵⁶ Bird species in drastic population decline are at particular risk when flocks land on tailings ponds for stop-overs.⁵⁷



Flickr: JD Hascup

Tar Sands Operations = Breeding Habitat Destroyed

Tar sands operations destroy wide areas of critical habitat for migratory birds. One square mile of forest in the northeast Alberta (where the tar sands are) can support as many as 500 breeding pairs of migratory birds, some of the highest densities anywhere within Canada’s boreal forest.⁶⁹ The industrial footprint of the tar sands may double in the next fifteen years, and, as a result, habitat loss will continue to increase.⁷⁰

The potential impacts on birds are staggering:

- Between 22 million and 170 million birds breed each year in the tar sands area.⁷¹ A 2009 study estimated that the impacts of tar sands operations on habitat have caused the loss of 58,000 to 402,000 birds.⁷² **Tar sands mining and drilling on bird habitat are projected to reduce the forest-dependent bird population by between ten and fifty percent.**⁷³

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At least nine protected species found in the tar sands region have lost over fifty percent of their population over the past forty to fifty years, including: horned grebe, lesser yellowlegs, short-billed dowitcher, boreal chickadee, olive-sided flycatcher, evening grosbeak, lesser scaup, greater scaup, and northern pintail.⁵⁸

Heavy Metals = Reproductive, Health and Behavior Problems

Pollution from tar sands operations is harmful to migratory birds. When heavy metals such as mercury, lead, and cadmium accumulate in wetlands, they magnify in the food chain and build up in birds' tissues, or bioaccumulate, causing problems with overall health, reproduction, and behavior. These effects increase risk of death for adult birds, as well as embryo malformations, reduced egg weights, and reduced chick survival.⁶⁴

Tar sands pollutants in wetlands also affect the food chain for fish-eating birds by killing fish directly or causing severe deformities, lesions and other health problems in fish.⁶⁵ Acid rain caused by emissions of air pollutants from tar sands operations also can increase birds' uptake of heavy metals.⁶⁶ The acidity also depletes calcium in the soil, leaving less available in the food chain for successful egg production.⁶⁷ In addition, acid rain decimates populations of aquatic invertebrates, insects and fish, which are important food sources for waterbirds and insectivorous birds.⁶⁸

Tar Sands = Climate Change

Climate change which will be exacerbated by tar sands development threatens migratory birds as well. Temperatures in Canada's boreal forest have already risen up to four degrees Celsius (over seven degrees Fahrenheit) in some areas over the past century.⁷⁹ This causes dramatic changes in timing of ecosystem events including the emerging of springtime insects and the mating and nesting of birds.⁸⁰ Migratory birds may arrive too late to take advantage of the insect emergence, which is key to providing adequate food for nestlings.⁸¹

Climate change is shifting bird distributions, altering their migration behavior and habitat, and threatening some species with extinction.⁸² As ranges shift north, some species will be replaced by species from further south. All will face habitat loss as well as new competitors, prey, and predators.⁸³ Moreover, as water tables near mines are lowered during "landscape dewatering," surrounding wetlands become drier.⁸⁴ Such dewatering particularly impacts waterbirds, as drier wetlands will be more strongly affected by late summer droughts that are projected to become more common in the region due to global warming.⁸⁵

Even without tar sands expansion, which is expected to increase water withdrawals by 170 percent between 2010 and 2030, climate change is projected to result in a thirty percent decrease in flow in the Athabasca River by 2050.⁸⁶ This double whammy of tar sands expansion and climate change will put this river system under tremendous stress.

- Strip mining of the 1,200 square miles allocated for mines will destroy habitat for an estimated 480,000 to 3.6 million adult birds.⁷⁴
- Drilling infrastructure could eliminate or fragment another 19,000 square miles of migratory bird habitat – an area about twice the size of New Jersey.⁷⁵
- Tar sands operations will also reduce bird hatchlings, with one estimate ranging from 9.6 million to 72 million fewer birds being hatched over a 40-year period.⁷⁶
- The 5,000 existing compressor stations may have reduced local bird populations in Alberta by 27,000 birds due to habitat loss, and an additional 85,000 birds from noise effects.⁷⁷ Expansion of drilling as planned could eliminate another 425,000 birds from the noise effects of compressor stations alone.⁷⁸

A Case Study: The Majestic Whooping Crane

The whooping crane is North America's tallest and perhaps most majestic bird. It is also one of its rarest and most endangered, and serves as a symbol of international conservation efforts.⁸⁷ In 1941 the population had fallen as low as sixteen adults due to unregulated takes and habitat destruction.⁸⁸ It is now directly threatened by tar sands development.

Thanks largely to the Endangered Species Act, today the whooping crane population is slowly recovering, but the species remains critically endangered. In 2010, the global population of wild whooping cranes was just 383 birds, 270 of which migrate over the tar sands region, both when flying from Alberta and the Northwest Territories to coastal Texas in the fall and when returning from Texas north in the spring.⁸⁹ Pairs, family groups or small flocks fly up to 6000 feet high and cover up to almost 500 miles per day.⁹⁰ They descend by nightfall, landing opportunistically at any available water body along their migration route.⁹¹ The cranes take flight again only when weather conditions are right.⁹² They may stay at stop-over locations overnight, or up to one week in spring and two weeks in fall.⁹³ The majority of these stopovers

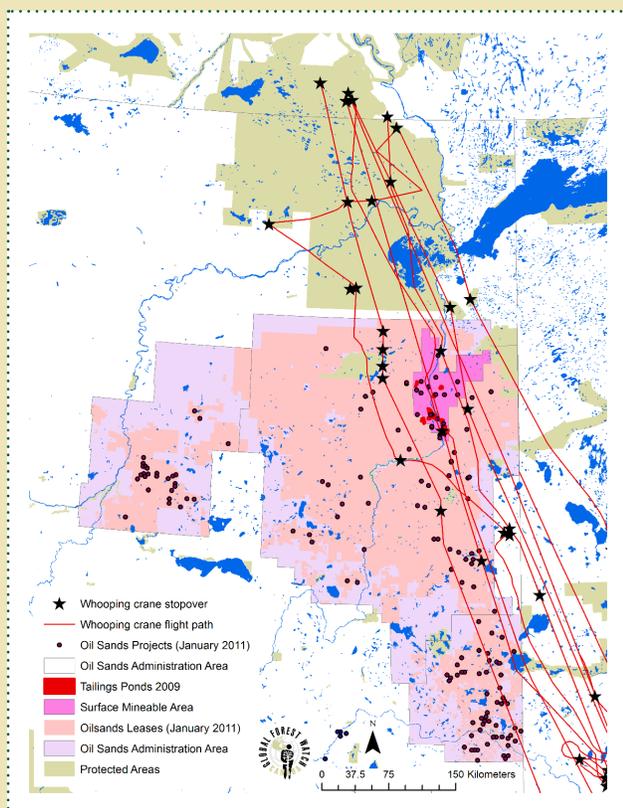


Flickr: NaturesFan1226

occur within 100 miles of the cranes' main migratory corridor.⁹⁴

Studies have documented that the migrating whooping cranes fly over the tar sands area and land on many different water bodies within their migratory corridor.⁹⁵ One group was grounded northeast of Fort McMurray, Alberta – the heart of tar sands extraction – for a week due to dense smoke from forest fires.⁹⁶ A second group stayed on the ground in the Birch Mountains northwest of Fort McMurray for two days due to unfavorable weather and adverse winds.⁹⁷

In 2006, a family group of possibly oil-stained whooping cranes were photographed during a fall migration stop-over on the Platte River in Nebraska.⁹⁸ A United States



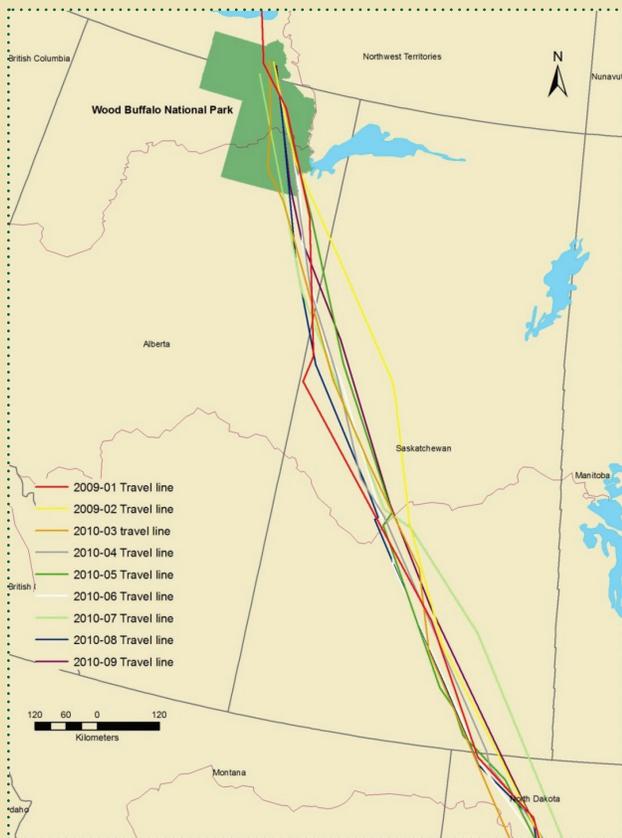
Possibly oiled Whooping Cranes in flight at the Platte River, Nebraska, Fall 2006. The underbellies of Whooping Cranes are normally white. Credit: Whooping Crane Journey North, Tom Stehn's Report: Migration Dangers (March 16, 2007) http://www.learner.org/jnorth/crane/spring2007/Update031607_Stehn.html.

Fish and Wildlife Service official stated that these cranes may have been oiled by tar sands operations in Canada, indicating that wading in a waste pond could have been a likely source.⁹⁹

During the fall migration of 2010, whooping cranes fitted with Global Positioning Systems (GPS) transmitters were documented making stopovers in the tar sands region, in both the surface mineable area and the drillable area.¹⁰⁰

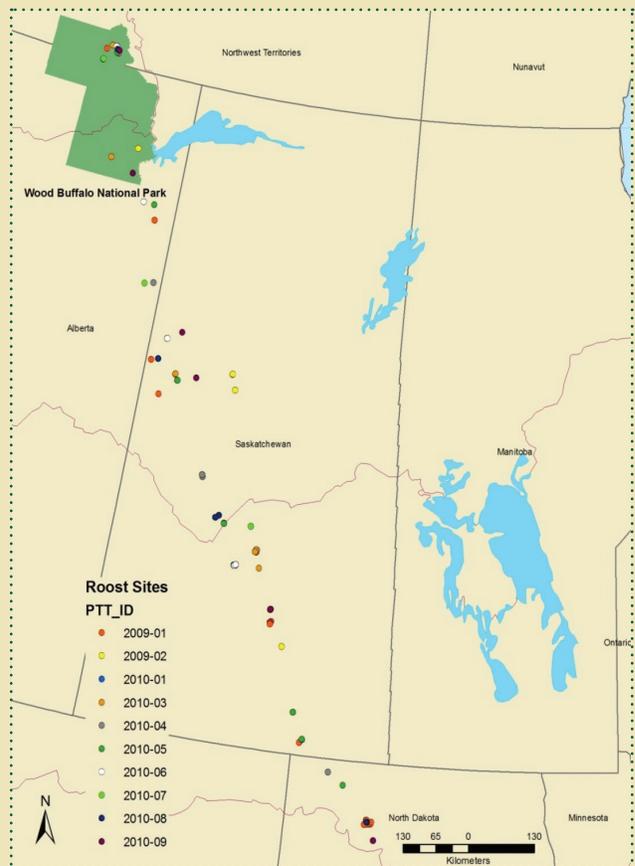
It is clear that the cranes use the tar sands area for stopovers; some cranes have possibly been oiled somewhere along their northern migration corridor; and tar sands tailings ponds pose a threat to the entire global population of migratory whooping cranes. In addition, tar sands extraction is reducing suitable stopover habitat for whooping cranes in the tar sands region, and contributing to climate change that will alter their breeding, migration, and wintering habitats. Expanded and continued tar sands operations will increase the grave threat to whooping cranes, almost certainly jeopardizing the fragile recovery of one of American's most amazing of birds.

Whooping Crane Migration Through Alberta's Tar Sands



Migration Routes of GPS-tracked Whooping Cranes in Canada fall 2010

Source: Walter Wehtje, Aransas Wood Buffalo Population Radio-Marked Whooping Crane Fall 2010 Migration Report, *The Crane Trust* (unpublished report of April 2011) at 8.



Migration roost sites of GPS-tracked whooping cranes in Canada during fall 2010 (Note: 2010-01 travel route not shown as there were too few data points to provide an accurate representation of its travel route).

Source: Walter Wehtje, Aransas Wood Buffalo Population Radio-Marked Fall 2010 Migration Report, *The Crane Trust* (unpublished report of April 2011) at 8.

Canada: Giving Big Oil A Green Light

Despite Canada's historic reputation as a good steward of the environment, the Canadian government has failed to effectively regulate the tar sands industry and has even made decisions to proceed with tar sands development when massive impacts to birds and wildlife were acknowledged. While Canadian federal authorities exist for regulating environmental impacts, the Canadian government has fallen short in its implementation of these authorities in the context of the tar sands industry. For example, the federal government does not regulate certain toxic substances like naphthenic acids that are utilized and released in the extraction process.¹⁰¹ These acids are recognized as hazardous substances.¹⁰²

The Canadian government has also failed to prosecute or prevent the leakage of contaminated tailings ponds into surface and groundwater despite overwhelming evidence that such pollution occurs.¹⁰³ Required measures for the protection of waterfowl from the lethal risks posed by tailings ponds are inadequate or non-existent.¹⁰⁴ Although the water licenses granted to tar sands operations limit the total quantity of water that each operator can withdraw, there are no enforceable restrictions on withdrawing water during extreme low flow periods, only voluntary guidelines.¹⁰⁵ Finally, there is no cumulative environmental assessment of the impacts of tar sands activities on the environment.¹⁰⁶

Weak environmental regulation and enforcement combined with overwhelming influence of the oil and gas industry on the Canadian government have allowed the tar sands industry to expand at break-neck pace without regard for the devastating impacts on migratory birds and waterfowl, and the ecosystems on which they rely. In a retreat from Canada's historic role as an environmental leader,¹¹⁰ the Canadian government has been unwilling to put mechanisms in place that would prevent or mitigate such harms and thus contributes to the diminishment of the effectiveness of domestic and international efforts to protect these species.



Jim Crossley

Putting Tar Sands Ahead of Wildlife

A telling example of the lax regulatory environment perpetuated by Canadian government is the proposed Jackpine tar sands mine expansion. About six years ago, Royal Dutch Shell applied to expand its Athabasca Oil Sands project in Alberta. The proposed Jackpine mine expansion will increase daily production from 255,000 to 355,000 barrels – a massive undertaking that will decimate an enormous swath of boreal forest, have severe impacts on wildlife, air and water quality, and jeopardize the health of surrounding indigenous communities.¹⁰⁷

The Joint Review Panel established by Canada's federal and provincial regulators charged with protecting the public and natural resources at risk found that "the project would likely have significant adverse environmental effects on wetlands, traditional plant potential areas, wetland-reliant species at risk, migratory birds that are wetland-reliant or species at risk, and biodiversity. There is also a lack of proposed mitigation measures that have been proven to be effective."¹⁰⁸ But these regulators still declared that Shell's proposal is in the "public interest" because "[t]he Project would provide notable economic benefits for the region, Alberta, and Canada." The Panel alarmingly concluded that "[a]lthough ... there would be significant adverse project effects on certain wildlife and vegetation ... the Panel considers these effects to be justified and that the project is in the public interest."¹⁰⁹



THE UNITED STATES MUST ACT TO PROTECT MIGRATORY BIRDS FROM TAR SANDS DEVELOPMENT

The Obama Administration has an obligation to ensure that the Canadian government lives up to its end of the bargain to protect our shared wildlife. It also has an obligation itself to protect wildlife and safeguard the public interest in abundant wildlife.

Foremost, President Obama and Secretary of State John Kerry can slow tar sands expansion and the resulting impact on birds by denying tar sands pipelines like the proposed Keystone XL pipeline through American's heartland, the Alberta Clipper pipeline expansion in the Great Lakes, and a likely tar sands pipeline project through northern New England that would convert the use of an existing conventional oil line. These pipeline proposals are the lynchpins of massive industry expansion plans, as oil companies desperately seek access to international markets for this land-locked resource.¹¹¹ Other options like rail or Canadian pipelines are meeting resistance in Canada or do not provide the economic advantages of pipelines the industry covets.¹¹² President Obama's decisions on these pipelines will have substantial impact on whether tar sands expansion is kept in check and investors turn to cleaner, more advanced energy solutions, or this massive destruction continues unabated.¹¹³

President Obama and Secretary Kerry can deny these pipeline projects if they are not in the national interest. In addition to tar sands' immense carbon pollution and the risk of tar sands spills to American communities and wildlife, the impacts to internationally protected migratory birds and wildlife in Canada is one more compelling reason these pipeline projects are not in the national interest and should be denied.

Additionally, and pursuant to a petition under a law from the early seventies known as the "Pelly Amendment" that conservation groups filed in September of 2011, the Secretary of the Interior must investigate activities of Canadian tar sands extraction, because these activities affect international conventions which protect migratory birds and waterfowl.¹¹⁴ If Interior Secretary Jewell determines that tar sands extraction is diminishing the effectiveness of these conventions, she must officially inform (or certify to) the President of this fact.¹¹⁵ The President can then choose to take actions, including punitive actions, to pressure the Canadian government to live up to its protective duties.

It is clear that tar sands extraction is resulting in threats to migratory birds, including critically endangered species like whooping cranes. Secretary Jewell's Department has had this petition for two and half years now, and it is time to act. It should be easy for her to conclude that tar sands extraction is contrary to the spirit and terms of treaties protecting wildlife. The purpose of the Migratory Bird Convention is to "sav[e] from indiscriminate slaughter and ... insur[e] the preservation of migratory birds" that are "in danger of extermination through lack of adequate protection" during the nesting season or during migration.¹¹⁶ Tar sands extraction is causing staggering impacts to migratory birds, which will only increase with continued industry expansion. The Secretary *must* make this fact formally known to the President. **President Obama should then take decisive measures necessary to protect these birds, including possible sanctions on Canada until it takes its wildlife protection obligations seriously, and denying projects, like tar sands pipelines, which enable further tar sand development.**



Barbara Blash

CONCLUSION

Massive destruction and fragmentation of the boreal forest is occurring at a staggering pace due to the oil industry's desire to extract tar sands coupled with lax regulation and enforcement by the Canadian government. The result is that an area the size of Florida in the heart of one of North America's most important bird habitats is being leveled, poisoned, drained and destroyed. Tens of millions of birds are ultimately at risk.

The United States can stop this travesty. President Obama and Secretary of State Kerry can say no to pipeline projects needed to fulfill massive expansion plans, like Keystone XL, and give critical signals to market investors that tar sands development is a bad and risky bet. Interior Secretary Jewell can officially declare to the President that Canada is failing to protect wildlife under international treaties, and the President should take actions necessary to ensure protection occurs, including possible sanctions.

In order to provide wildlife and future generations a safe and healthy future, we need to end our addiction to oil. Tar sands is a bad bet for wildlife, and one we don't need to take. It is only by investing in clean, advanced energy solutions that wildlife and future generations will be spared the harms of carbon polluting, destructive tar sands. The time to turn away from bad investments like tar sands and make smarter energy choices that protect the future of wildlife and our children is now.



Species Protected by the Migratory Bird Convention That Breed in or Migrate Through the Tar Sands Region¹¹⁷

1. American Avocet
2. American Bittern
3. Bobolink
4. Bufflehead
5. Canvasback
6. Boreal Chickadee
7. American Coot
8. Sandhill Crane
9. Whooping Crane
10. Short-billed Dowitcher
11. American Black Duck
12. Harlequin Duck
13. Ring-necked Duck
14. Ruddy Duck
15. Wood Duck
16. Great Egret
17. Alder Flycatcher
18. Great-crested Flycatcher
19. Least Flycatcher
20. Olive-sided Flycatcher
21. Yellow-bellied Flycatcher
22. Gadwall
23. Marbled Godwit
24. Barrow's Goldeneye
25. Common Goldeneye
26. American Goldfinch
27. Canada Goose
28. Ross' Goose
29. Snow Goose
30. Eared Grebe
31. Horned Grebe
32. Pied-Billed Grebe
33. Red-necked Grebe
34. Western Grebe
35. Evening Grosbeak
36. Bonaparte's Gull
37. California Gull
38. Franklin's Gull
39. Glaucous Gull
40. Herring Gull
41. Iceland Gull
42. Mew Gull
43. Ring-billed Gull
44. Great Blue Heron
45. Dark-eyed Junco
46. Killdeer
47. Eastern Kingbird
48. Ruby-crowned Kinglet
49. Arctic Loon
50. Common Loon
51. Red-throated Loon
52. Mallard
53. Common Merganser
54. Hooded Merganser
55. Red-breasted Merganser
56. Common Nighthawk
57. Red-breasted Nuthatch
58. Oldsquaw or Long-tailed Duck
59. Northern Oriole
60. Red Phalarope
61. Red-necked Phalarope
62. Wilson's Phalarope
63. Eastern Phoebe
64. Say's Phoebe
65. Northern Pintail
66. American Pipit
67. Redhead
68. Common Redpoll
69. American Robin
70. Buff-breasted Sandpiper
71. Least Sandpiper
72. Semipalmated Sandpiper
73. Solitary Sandpiper
74. Spotted Sandpiper
75. Upland Sandpiper
76. Greater Scaup
77. Lesser Scaup
78. Surf Scoter
79. White-winged Scoter
80. Northern Shoveler
81. Pine Siskin
82. Common Snipe
83. Sora
84. American Tree Sparrow
85. Chipping Sparrow
86. Clay-colored Sparrow
87. Fox Sparrow



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|----------------------------|-------------------------|------------------------------|
| 88. LeConte's Sparrow | 103. Western Tanager | 118. Cedar Waxwing |
| 89. Lincoln's Sparrow | 104. Blue-winged Teal | 119. American Wigeon |
| 90. Savannah Sparrow | 105. Cinnamon Teal | 120. Eurasian Wigeon |
| 91. Sharp-tailed Sparrow | 106. Green-winged Teal | 121. Willet |
| 92. Song Sparrow | 107. Arctic Tern | 122. Black-backed Woodpecker |
| 93. Swamp Sparrow | 108. Black Tern | 123. Pileated Woodpecker |
| 94. Vesper Sparrow | 109. Caspian Tern | 124. Three-toed Woodpecker |
| 95. White-crowned Sparrow | 110. Common Tern | 125. Western Wood-Pewee |
| 96. White-throated Sparrow | 111. Hermit Thrush | 126. House Wren |
| 97. Bank Swallow | 112. Swainson's Thrush | 127. Marsh Wren |
| 98. Barn Swallow | 113. Philadelphia Vireo | 128. Winter Wren |
| 99. Cliff Swallow | 114. Red-eyed Vireo | 129. Greater Yellowlegs |
| 100. Tree Swallow | 115. Solitary Vireo | 130. Lesser Yellowlegs |
| 101. Trumpeter Swan | 116. Warbling Vireo | |
| 102. Tundra Swan | 117. Bohemian Waxwing | |



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- "[9] The Panel finds that the Project would likely have significant adverse environmental effects on wetlands, traditional plant potential areas, wetland-reliant species at risk, migratory birds that are wetland-reliant or species at risk, and biodiversity. There is also a lack of proposed mitigation measures that have been proven to be effective. The Panel also concludes that the Project, in combination with other existing, approved, and planned projects, would likely have significant adverse cumulative environmental effects on wetlands; traditional plant potential areas; old-growth forests; wetland-reliant species at risk and migratory birds; old-growth forest-reliant species at risk and migratory birds; caribou; biodiversity; and Aboriginal traditional land use (TLU), rights, and culture. Further, there is a lack of proposed mitigation measures that have proven to be effective with respect to identified significant adverse cumulative environmental effects.")
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