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# Danger in the Nursery:

## Impact on birds of tar sands oil development in Canada's Boreal forest

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Read the full issue paper  
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wildlife/borealbirds](http://www.nrdc.org/wildlife/borealbirds).



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Each spring more than half of America's birds flock to the Canadian Boreal forest to nest. There, every square mile (2.5 kilometers) of forests, lakes, river valleys, and wetlands in the Boreal can support as many as 500 breeding pairs of migratory birds. Yet almost all the biggest oil companies are mining and drilling important Boreal forest and wetlands—that could eventually cover an area the size of Florida—to access thick, low-grade petroleum. Canada and the United States must protect migratory birds and bird habitat from this new form of high-impact energy development.

Tar sands oil development creates open pit mines, habitat fragmentation, toxic waste holding ponds, air and water pollution, upgraders and refineries, and pipelines spreading far beyond the Boreal forest. This development is destroying habitat for waterfowl and songbirds that come from all over the Americas to nest in the Boreal. Each year between 22 and 170 million birds breed in the 35 million acres of Boreal forest that could eventually be developed for tar sands oil. Faced with tar sands development, migrating birds don't just move elsewhere since they depend on a certain type of habitat. Not only do many adult birds die when faced with lost and fragmented habitat and ponds of mining waste, but future generations of birds will have lost their chance to exist.

The Boreal forest tar sands area is incredibly important for birds as a breeding habitat and as a globally important flyway for a great abundance and diversity of wetland-dependent birds. Unfortunately the rapidly expanding industrial tar sands oil extraction operations increasingly place these birds at risk.

Virtually every facet of tar sands oil development has the potential to harm Boreal birds—many of which are migratory birds that are protected by treaty and national law. Combining the various estimates of the loss of birds from mining and in situ operations, our research projects a cumulative impact over the next 30 to 50 years ranging from a low of about 6 million birds lost to as high as 166 million birds lost. Beyond the direct habitat effects, there are many other impacts to birds that, while harder to quantify, are known or expected to cause significant problems for birds and other wildlife.



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## Birds of the Boreal Forest: Migration Routes

DO YOUR OIL & YOUR BIRDS COME FROM THE SAME PLACE?

### ALBERTA'S TAR SANDS OIL DEVELOPMENT THREATENS NORTH AMERICA'S BIRDS

*Over the coming three to five decades under projected tar sands oil development, as many as 166 million birds including future generations could be permanently lost.*



Tar sands development would turn pristine Boreal wilderness into a network of industrial sites.

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#### ■ Tar Sands Mining Causes Bird Habitat Loss:

The projected strip mining of 740,000 acres (300,000 hectares) of forests and wetlands in the tar sands will result in the loss of breeding habitat for between 480,000 and 3.6 million adult birds. The corresponding impact on breeding will mean a loss of between 4.8 million and 36 million young birds over a 20-year period, to between 9.6 million and 72 million birds over a 40-year period.

#### ■ Tailings Ponds Result in Oiled Birds:

Annual bird mortality from landings and drowning in the oily water in current tar sands tailings ponds could range from more than 8,000 birds to well over 100,000. A doubling of tailings ponds—likely with proposed tar sands mining expansions—would increase projected annual bird deaths to between 17,000 to 300,000 individuals.

#### ■ Tar Sands Drilling Fragments Bird Habitat:

Tar sands drilling projects are projected to result in the loss of more forest-dependent bird habitat than strip mining and could harm as many as 14.5 million breeding birds from direct habitat loss and as many as 76 million birds from fragmentation and habitat degradation over a 30 to 50 year period.

#### ■ Water Withdrawals Harm Wetlands and Water Habitats:

Current tar sands operations are permitted to remove enough water to meet the needs of a city of 2 million people, and water removal is projected to increase by 50 percent as planned tar sands projects become operational. Changes to Alberta's rivers and underground reservoirs could have profound impacts on the hundreds of thousands of birds that are dependent on the wetland habitats in the tar sands and Peace-Athabasca Delta and other parts of the Mackenzie River watershed.

## The Birds of the Boreal

**Tar sands development threatens many of North America's most beloved birds:**



### Olive-sided Flycatcher:

The Olive-sided Flycatcher migrates as far south as Bolivia and Amazonian Brazil during the winter, the longest migration of any North American passerine. It nests in the Boreal, including in the Boreal forest underlain with tar sands. The flycatcher has

had one of the largest declines seen in the past 40 years (76 percent). It is on Canada's official list of Threatened bird species and considered a species of concern in the United States.



**Evening Grosbeak:** At one point, the Evening Grosbeak was one of the most common backyard birds in

southern Canada and much of the United States, but sightings in the United States are becoming increasingly rare. The Evening Grosbeak has experienced a 70 percent to 80 percent decline over the last 40 years. It specifically needs coniferous forest for its nesting, making it vulnerable to the loss and fragmentation of Boreal forest clear-cutting associated with tar sands.



**Lesser Scaup:** The migration path of the Lesser Scaup passes through the section of the Boreal forest affected by tar

sands development. The Scaup has experienced an overall 70 percent decline in population over the last 50 years. In particular, Lesser Scaup are at risk of mistaking toxic tar sands tailings ponds for natural bodies of fresh water on which they can land.



**Black-throated Green Warbler:** The Black-throated Green Warbler ranges over the eastern United States and Canada, breeding

as far west as the Boreal in northeastern Alberta. With its bright yellow face and its persistent song of "zoo-zee, zoo-zoo-zee," this bird is easy to recognize during breeding season. The Alberta government has identified the Black-throated Green Warbler as at risk of long-term declines due to habitat loss.



**Whooping Crane:** Whooping Cranes were nearly extinct in 1941 with a population low of just 15 birds. Now, the population of the largest North American crane has reached a worldwide total of 470 birds

in three populations. The Whooping Cranes nest in bulrush marshes or other wetland vegetation. The migratory Whooping Crane population breeds entirely within the Boreal, specifically in Wood Buffalo National Park, downstream from the tar sands mines. The breeding success of the cranes is jeopardized in dry years. Most global warming scenarios predict more dry years within the region where Whooping Cranes nest.

Photo Credits: Olive-sided Flycatcher: Jeff Nadler; Evening Grosbeak: Courtesy of Ducks Unlimited, D. Faucher; Lesser Scaup: Courtesy of Ducks Unlimited; Black-throated Green Warbler: John Kormendy.

**Air and Water Toxins Bioaccumulate:** Major impacts are likely from tar sands air and water pollution causing the accumulation of toxins in tissues, from acid rain and nitrogen deposition, air pollution and heavy metals. Birds can inhale, ingest, or come into contact with contaminants; these contaminants can build up in the tissues and lead to weakened birds, problems with reproduction, and often to eventual death. Pollution can also lead to changes in habitat and food which will indirectly harm the health of birds. And these effects are not limited to birds—tar sands toxins can affect other wildlife and local human populations as well.

**Global Warming Contributed to by Tar Sands Is Already Affecting Boreal Birds:** The tar sands are Canada's fastest growing source of greenhouse gas emissions, producing as much as three times the global warming pollution per barrel from the production process as conventional oil production. The Boreal ecosystem is at the frontlines in feeling the impacts of global warming—and so are Boreal birds. Long-distance

## Widespread Impacts of Tar Sands



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The Bay-breasted Warbler (top), the White-throated Sparrow (center), and the Gray Jay (bottom) are extremely reliant on the Boreal forest for habitat.

as insects emerge earlier in the spring due to warmer temperatures. Birds that hoard food to get through the winter and to start feeding their young in the spring may find the food spoils before the first freeze. Global warming could hit ducks especially hard as wetlands become drier.

### Recommendations for Protecting Boreal Birds

Many scientific reports on the status of the planet's birds over the past 20 years warn of drastic declines and looming extinctions. This report's analysis echoes these cautions and challenges decision-makers and companies to get it right in Canada's Boreal forest, while there is still time to save the great bird nursery of the Americas. Tar sands oil development should not be the solution to our fuel needs. Both Canada and the United States have a choice to make between fuels that harm the environment (including damage to critical bird habitat) and clean energy now.

An immediate solution to the pace of development and to environmental problems relating to tar sands oil development is a moratorium on new projects and project expansions and clean up of existing projects. Alberta needs to prove that even the current level of production can be done without serious environmental impacts. At the same time, U.S., Canadian, and domestic and international regulations must be strengthened to protect the Boreal forest and the birds who make the forest their home. And oil companies should adhere to strict standards of best practices for their current operations in order to protect habitat and minimize their impact on land, air and water.

### Mackenzie Gas Project: Tar Sands Expansion is Spurring Industrialization Beyond the Tar Sands Region

This proposed 700-mile long gas pipeline would stretch the length of the pristine Mackenzie Valley, carrying natural gas from the Mackenzie Delta on the Arctic Ocean to northern Alberta in large part to satisfy the energy demands of tar sands production. The Mackenzie River watershed provides important breeding habitat for more than 300 species of birds and could be opened up by the pipeline for additional industrial development projects.



Spruce Grouse

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### Tar Sands Oil and Boreal Birds in the Great Lakes Region

Tar sands oil and migrating birds coincidentally follow a similar path on some of the routes between Canada and the United States. During the spring migration, large numbers of ducks, geese, shorebirds, blackbirds, sparrows, warbler, and thrushes fly through the Chicago region north to nest in the Boreal impacted by tar sands oil development. Yet the Great Lakes region is the largest recipient in the United States of tar sands oil. For instance, a number of the area refineries, including BP Whiting, ConocoPhillips Wood River, Citgo Lemont, and ExxonMobil Joliet have the capacity to refine blended bitumen/heavy crudes, and some are also planning expansions to take tar sands oil that will include new oil pipelines in the region.