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Wasteland or forest: What do you think of when you hear the words tar sands?

Strip Mining for Oil in Endangered Forests

Big oil interests are barreling ahead with a plan to sell Americans on a growing practice that is dirty and destructive, even by the standards of the oil industry: scraping away hundreds of thousands of acres of one of North America's wildest remaining forests—the Boreal—to mine the soils underneath for thick, low-grade petroleum. Producing what is known as tar sands oil consumes large amounts of natural gas and generates three times as much global warming pollution as conventional crude oil production. But there are far better, cleaner ways to meet our energy needs without destroying forests: efficiency and renewable fuels.

The tar sands industry consumes enough natural gas every day to heat roughly 4 million American homes.

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June 2006

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Economic, Environmental Costs of Tar Sands in Alberta Are Too High

With more than four tons of material dug out of open pit mines to produce each barrel of oil, it's no surprise that Alberta tar sands and the accompanying web of pipelines, roads, and wells are energy intensive and environmentally destructive:

- *Tripling* the amount of global warming pollution from the production process compared to conventional crude, and
- Destroying thousands of square miles of Boreal forest, wetlands, and wildlife that depend on this ecosystem, including many of America's birds that nest in the Boreal.

How Do You Get Oil From Tar Sands?

Tar sands are approximately 90 percent sand, clay, silt, and water and 10 percent bitumen—a tar-like substance, hence the name, that can be converted to oil through an energy intensive process. Most of today's tar sands production sites require open pit mines, some as large as three miles wide and

200 feet deep. Because only a small fraction of the oil-producing bitumen deposits are close to the surface (less than 20 percent), the rest of the deep reserves must be extracted by injecting steam underground and pumping the melted bitumen back to the surface. Once separated from the sand, clay, and silt, the bitumen is still a low-grade heavy oil that must undergo yet another energy-intensive process to turn it into a crude oil that more closely resembles conventional oil.

How Big Is the Tar Sands Development?

If we consider the reserves of bitumen under Canada's Boreal forests and wetlands—a total area of more than 55,000 square miles, which is larger than the state of Florida—Canada moves into second place for world oil reserves after Saudi Arabia. In fact, over the last 10 years, production of oil from Alberta's tar sands has doubled to approximately 1 million barrels per day and is projected to reach 3 million barrels per day by 2015.

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What's at Stake Economically and Environmentally?

- **Global warming pollution from tar sands threatens air quality and public health.**

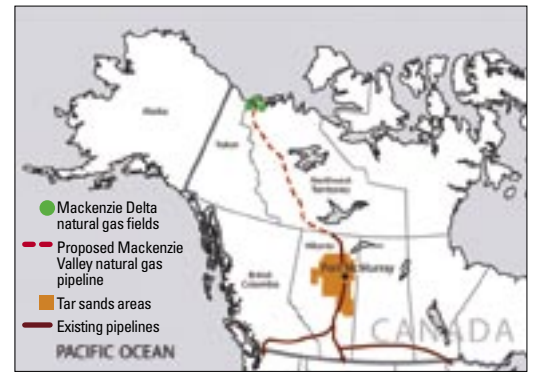
Tar sands oil production generates three times the amount of global warming pollution as conventional oil production does because of the massive amounts of energy needed to extract, upgrade, and refine the oil. And global warming pollution related to tar sands is projected to quadruple to as much as 126 megatons by 2015, up from 25 megatons in 2003. Even now, tar sands are largely responsible for Alberta's rising levels of air pollution and is Canada's fastest growing global warming emissions source.

- **Open pit mines are turning the Boreal forest into a wasteland of polluted lands and waters.**

Strip mining and drilling in the tar sands requires such a complex of open pit mines, wells, roads, and pipes that every part of the forest will be within a few hundred yards of an industrial intrusion. This is a serious threat to a region of forests and wetlands that is still 96 percent undisturbed. Not only is the land at risk, but also the water. Up to four barrels of water are drained from the Athabasca River to produce one barrel of tar sands oil. The water isn't returned to the river, but rather ends up as toxic slurry dumped in holding lagoons so big they can be seen from space by the naked eye.

- **Sprawling industrial tar sands development is slicing up habitat.**

The web of pipelines, roads, and wells required to reach bitumen deposits deep in the ground will slice up wildlife and migratory bird habitat into pieces too small to survive on. In fact, the tar sands insatiable appetite for energy has strengthened proposals to build natural gas pipelines, including a 758-mile pipeline through Mackenzie Valley, to fuel the tar sands. The Mackenzie Valley in Canada's Northwest Territories is one of the last large, intact portions of the Boreal forest, home to grizzly bear, caribou, and lynx, and the breeding ground for many of North America's songbirds and waterfowl.



Map © Boreal Songbird Initiative

- **Toxic waste and logging associated with tar sands threaten America's backyard birds.**

Each spring, more than half of America's birds nest in the Canadian Boreal forest, and by summer's end the fledglings are beginning their journey back southward to backyards across the United States. Even just a few miles of the forests, lakes, river valleys, and wetlands in the Boreal can support as many as 600 breeding pairs of migratory birds—many at risk of losing their critical habitat from tar sands oil production.

- **And unproven reclamation schemes could mean it would stay that way forever.**

Companies doing the mining have attempted to fix only a fraction of their mess, and in 40 years not a single acre has yet been certified as reclaimed by the Alberta government. Reclamation concerns are based on the fact that highly complex forest and wetland ecosystems are unlikely to regenerate in areas filled with mine waste.

What Can We Do Now?

There are cleaner, better solutions to America's energy needs that can help protect forests and cut global warming pollution: efficiency and renewables. To immediately stem the development under way of tar sands projects in Canada's Boreal forest, we should support conservation and environmentally sustainable development in the area, including:

- Interconnected network of protected areas and corridors to maintain the ecological integrity of the Boreal forest and wildlife habitat.
- Strict standards for water management, watershed preservation, and air pollution controls.
- Reduce global warming emissions from tar sands production through a combination of efficiency improvements and carbon dioxide capture and disposal.

And to move America beyond oil, we should support better, cleaner measures such as renewable fuels and energy efficiency that will fuel our future energy needs without sacrificing our land, water, and air.



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