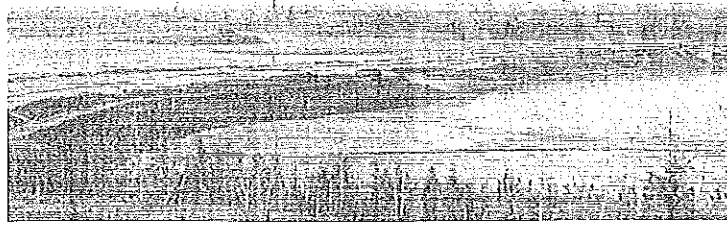


The Velvet Mine



Photos: Craig Campbell

Craig Campbell with Emilia Kennedy, Department of Sociology, University of Alberta, Canada

The most gripping fact about the business of extracting oil from the sands of north-eastern Alberta is that no-one seems to know how bad it is going to be for the boreal forest. Even less is known about the potential impacts on the local First Nations and Metis people who live there, as this extract from a special report for the Boreal Footprint Project explains.

While local indigenous people stress that there is still a good living to be made from traditional subsistence activities on the land, David Shindler, a prominent Canadian ecologist, warns that the boreal forest is in dire straits. With less than 2% of the reserves being mined at this time, impacts are set to increase dramatically as the oil sands industry is poised to expand and intensify operations. The impact of the seemingly unrestricted development in the north is not only an assault on the boreal ecology but also on the entire social and cultural landscape. Meanwhile, the government of Alberta portrays the oil sands industry as a commercial success story, won through the hard work of early visionaries.

Chipewyan, Cree and Metis people, who lived along the Athabasca river long before the arrival of cars, oil cartels, and international capital, are now dealing with an unprecedented industrial experiment. Emma Faichney, a Cree elder, remarked that 'when the [oil sand] plants opened it was good for jobs but it still ruined our country. We won't have fish or berries to eat. The animals will be unfit to eat and we won't be able to drink the water. Our lifestyle will be different. We'll have to live like whites.'

Despite the provincial government's recognition that there is an 'unprecedented pace of development' in the region, there has been almost no synthesis of data and critical work pertaining to the cumulative effects of industry on the boreal landscape. While there are countless pages of data, conference proceedings and expert statements, there are few tangible results and recommendations, despite the provincial government's recognition that there is an 'unprecedented pace of development' in the region.

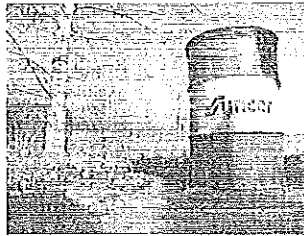
Addressing the concerns of the Fort McKay community, Bertha Ganter, a Chipewyan elder and environmental consultant, noted in a recent conference that 'the community is saddened in seeing so much land being lost. They wish to leave some of our cultural ways for future generations to enjoy and pass on. They know that when all the mineable ore has been extracted, the McKay peoples will still be there. They have survived off these lands for thousands of years, and they want lands protected and maintained to continue to sustain traditional resource harvesting such as they had before industrialisation.'

The oldest company currently operating in the oil sands is Suncor, the largest mining operation in North America, producing a quarter of a million barrels of oil per day. With little connection to the Athabasca river and the people living on its banks, Suncor's shareholders are abstractly connected to the region through nebulous financial transactions; they are trading on the environmental and social integrity of an out-of-the-way place and a socially and historically marginalised people. While the company assures the world that all is well in the oil sands, there is no definitive word on the cumulative impacts in 2010 of Suncor's projected annual emissions of 4.7 million tonnes of green house gases and 487,000 tonnes of volatile organic compounds. These

emissions are in addition to the extensive fragmentation of the forests, the displacement of hundreds of acres of soil in surface mines, vast amounts of land that lie unreclaimed, and the erasure of indigenous history through the destruction of traplines, berry-picking sites, fishing holes and medicinal plants.

Under the swell of international capital, federal proclamations, and provincial subsidies, the voices of the few Cree, Chipewyan, and Metis elders are carefully ignored and isolated. In the end, degradation of all aspects of life at the heart of the oil sands has been so acute that the Fort McKay First Nation is considering the relocation of their community to a small reserve more than 100km to the north-west, that has no road access and little development activity.

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Alberta's

Gail MacCrimmon,

Alberta's boreal forest is the focus of intense industrial development including forestry, mining and conventional oil and gas activity. The recent boom in oil sands development is adding significantly to these stresses.

The four major oil sands deposits in northern Alberta cover 42,000 km² and contain an estimated 300 billion barrels of recoverable oil, more than all the known reserves in Saudi Arabia. Oil sands are a mixture of bitumen, sand, water and clay – a form of oil similar in consistency to molasses.

The first commercially successful oil sands plant, Great Canadian Oil Sands, produced synthetic crude oil in 1967. Thirty-five years later, 13 oil sands projects have received regulatory approval and are either operational or under construction while 18 more have been proposed. Bitumen production has grown from 50,000 barrels per day in 1970 to more than a million barrels by 2000. Some C\$40 billion in new investment has been proposed and by 2040 production could top 6 million barrels per day.

To date, most oil sands projects have been open-pit surface mines where overlaying vegetation and soils are first removed, and then the oil sand is excavated and processed to extract the bitumen. These projects, while causing irreversible changes to the landscape, are limited to a relatively small area where deposits are shallow enough that mining operations are technically and economically feasible. The remaining 80-90% of the oil sands deposits are too deep to mine and can only be recovered by new *in-situ* technology that extracts the bitumen while leaving the surface sediments and sand in place.

While *in-situ* extraction does not require clearing or excavation in order to extract bitumen, the intensive network of wells and pipelines and the pre-development clearing for seismic mapping causes significant and long-lasting disturbance to the boreal forest and potential contamination of groundwater systems. The wide-

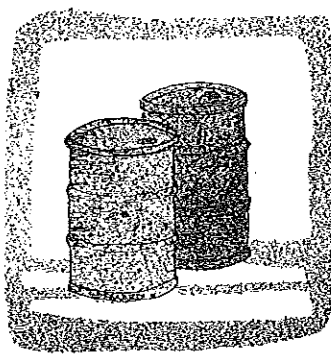
Pipeline Peril

Alison Woodley, Canadian Parks and Wilderness Society (CPAWS)

Amid an explosion of interest in developing oil and gas reserves in Canada, concern is building about what these projects will mean for wildlife and wilderness. New developments are being discussed in British Columbia (BC), Alberta, Saskatchewan, off Cape Breton Island and even on the borders of the Northwest Territories' (NWT) Nahanni World Heritage Site. Now proposals loom for new pipelines to take gas from Alaska and the Mackenzie River delta to southern Canadian and US markets.

The prospect of a pipeline cutting across the north represents a kind of *déjà vu*. Thirty years ago, in the midst of an 'energy crisis', the USA proposed a pipeline across the northern Yukon from Alaska to the Mackenzie Delta and down the Mackenzie Valley. This led to the Canadian government commissioning the Berger Inquiry which, in 1977, recommended a 10-year moratorium on a Mackenzie Valley pipeline while Aboriginal land claims were settled. The Commission also called for a permanent ban on pipeline development across the North Slope of the Yukon because it would cause irreparable harm to caribou herds and other wildlife and to the people who have relied on the caribou for generations.

A quarter of a century later, the USA government once again sees tapping into ever-more-remote fossil fuel sources as the answer to making access to energy 'secure' for the American public and industry. The difference today is that most land claims by aboriginal people in the Mackenzie Valley have been settled



and, rather than vocally opposing construction of a northern pipeline, First Nations leaders are much more interested in taking advantage of the economic opportunities that oil and gas development may bring.

Possible gas pipeline routes include an Alaska Highway route from northern Alaska through the Yukon, linking with the existing gas distribution system in northern BC, and a Mackenzie Valley route from the Mackenzie Delta up the valley to northern Alberta. A third 'over-the-top' pipeline route could bring Alaskan gas across the Beaufort Sea, pick up Mackenzie Delta gas and then continue up the Mackenzie Valley.

What are the potential impacts of pipeline development in the north? Constructing and operating pipelines means building access roads and related infrastructure such as compressor stations. These disturbances fragment the landscape into smaller habitat areas. A steel pipe snaking through thousands of kilometres of wilderness can create serious barriers to the movement of wildlife, especially migratory species such as caribou. After operations begin, there is the risk of a pipeline rupture due to frost heaving in punishing northern conditions.

But by far the largest impacts on wilderness will come from the development needed to keep the pipe filled over its lifespan: cutting seismic lines, building roads, creating networks of smaller feeder pipes, building drilling platforms and gas-processing plants and developing the supporting infrastructure such as power lines, service areas and waste-handling facilities. Under a full development scenario the Mackenzie Delta and Valley face major losses of biodiversity and wilderness.

The Yukon faces similar potentially catastrophic changes. Since 1999, the Yukon government has been inviting companies to purchase exploration leases in the north but without adequate public consultation. Efforts to convince the Yukon government to complete protected-areas planning and land-use planning in advance of development have been largely ignored.

In both the Yukon and NWT, protected areas strategies are in the early stages of implementation. A network of protected areas must be identified and reserved for legal protection prior to the development of northern oil and gas resources or use of the North for a pipeline. Equally important is the establishment of a management regime for the intervening landscape that ensures the cumulative impacts to the land are minimised and overall environmental health is maintained.

CPAWS' position on northern oil and gas development is clear: conservation must come first. There will not be a second chance to protect wilderness because oil and gas development will foreclose conservation opportunities. Only by weighing development and conservation in equal measure will the north protect its wilderness, wildlife, way of life, and enjoy a healthy economy in the future. CPAWS-NWT and Yukon, in partnership with other NGOs, have set out a northern statement of principles for oil and gas development, available at:

www.cpaws.org/news/northern-oilgas-dev-2001-1011.html

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Oil Sands

Pembina Institute

spread application of this technology poses an alarming risk to the remaspread application of this technology poses an alarming risk to the remaining integrity of the boreal forest ecosystem.

Concern over the cumulative effects of development has led to the establishment of provincial policy frameworks and multi-stakeholder organisations. Such initiatives are working to determine environmental impacts and ecological thresholds, and develop environmental management objectives and management systems. However, the complexity of the problems and of the processes themselves means that progress is slow and often challenging. Meanwhile, a pro-development provincial government and economic pressure from developers attracted by favourable economic conditions results in continuing approvals for new oil sands developments. Such approvals are being granted in advance of having the necessary information to know if the boreal forest ecosystem can withstand the present pace of development.

At present the government of Alberta is proposing to amend land use policy to allow surface mining of patterned fen, a landform represented in less than 1% of Alberta, that overlays an estimated billion barrels of bitumen. This example illustrates the fundamental dilemma faced in Alberta - that of a societal lack of willingness to limit economic development within the constraints of ecological limits. Alberta's political and corporate sectors need to move quickly to establish environmental management systems that will ensure the long-term ecological sustainability of the boreal forest. Much of the required groundwork is underway but time is needed for its completion. If the political understanding and will to implement what is clearly needed is not developed soon, the boreal forest we know now may well disappear within the space of one generation.

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