

Fact sheet

Keystone XL in context: oilsands and environmental management

Two decades of ineffective policies have left their mark on the Canadian landscape

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At a glance

There is a growing debate in the United States about the environmental impact of oilsands and the related issue of whether there are effective legal and regulatory frameworks in place in Canada to address these impacts. The Governments of Alberta and Canada have stated they have stringent regulations in place to address growing impacts to air, land, and water resources. But the evidence suggests that management systems in place are either absent, ineffective, or too weak to meet the growing impacts on the landscape.

U.S. decision-makers who are concerned about oil sands impacts to Canada's Boreal Forest, wildlife including migratory birds, greenhouse gas emissions, and water pollution will want to understand Canada's plan for environmental management. Indeed, filling the proposed KXL pipeline with oilsands will result in nearly a 50 per cent increase in oilsands production. Until environmental management of the oilsands is improved, KXL will cause significant environmental harm due to increased oilsands production.

As the sole customer of nearly all (99 per cent) of Canada's oilsands exports, the U.S. has a considerable ability to influence and improve oilsands environmental management north of the border. This fact sheet provides a summary on the impact of oilsands development on land, species at risk, First Nations, water and tailings and greenhouse gases.

For a more detailed analysis, please refer to the accompanying briefing note, "Summary of Environmental Management Policy Deficiencies in the Canadian Oilsands: Implications for U.S. Decision Makers."

Land impacts

There is no regional plan in place that sets acceptable limits on levels of cumulative environmental impact to manage the pace and scale of oilsands development.

Alberta's land use planning process for the oilsands region is still in development, and efforts to date are failing to protect biodiversity, manage tailings waste and put absolute limits on Athabasca River withdrawal. The draft Lower Athabasca Regional Plan acknowledges that a cumulative effects management approach is required and that objectives must be set for environmental, social and economic outcomes, but it does not deliver effective solutions for a range of issues in the region.

An effective plan needs to:

- protect sufficient habitat for woodland caribou herds in the Lower Athabasca region;
- prevent logging and/or oil and gas activities within conservation areas;
- set a total limit on oilsands disturbance;
- identify how tailings will be managed;
- support a credible monitoring system by including the monitoring of hydrocarbon contaminants and ensuring there are multiple monitoring systems in place;
- halt water withdrawals from the Athabasca River during low-flow periods.

Furthermore, in the current draft regional plan, the proposed area to be conserved is less than recommended. The location of these sites needs to be guided by science, not existing lease sales, in order to protect the places of highest environmental value.

Species at risk: woodland caribou

Woodland caribou face the possibility of local extinction because of industrial development in northeastern Alberta.

Neither Alberta nor Canada has been willing to propose meaningful and effective habitat protection strategies to recover this threatened species.

- **Woodland caribou is listed as a threatened species, both provincially and federally.** This reflects declines in population size, contraction of range, and sensitivity to human activities.
- **Habitat restoration and protection is critically necessary.** In the absence of a strong federal recovery strategy and an effective provincial land use plan, the species is predicted to be extirpated, or locally extinct in northeastern Alberta, within 30 to 40 years.
- **Most caribou habitat in the region will be lost to make way for oilsands development.** The recently released draft recovery strategy allows for 95% of woodland caribou habitat in northeastern Alberta to be lost in order to promote oilsands development.

Aboriginal concerns

Aboriginal peoples' concerns regarding pollution of the Athabasca watershed and the possible linkage to human health have not been thoroughly investigated.

Aboriginal people have raised a number of concerns regarding water pollution to the Athabasca watershed and the possible linkage to human health.

- In February 2009, the Alberta Cancer Board released a study that suggested the overall cancer rate in Fort Chipewyan was approximately 30% higher than expected.

Water management issues

The current processes and tools used to monitor water quality in the Athabasca region have been widely discredited.

The shortcomings in water monitoring leave governments unable to effectively assess the impacts of oilsands development on water quality. Also, there is a weak voluntary framework to manage water withdrawals from the Athabasca River that could result in river damage during periods of low flow.

- **Water monitoring is inadequate.** Numerous independent researchers and government reports have reported serious flaws in the current sampling programs, a general lack of understanding of baseline conditions and inadequate analytical capabilities. While new monitoring plans have been announced, there will be a significant time lag between when these plans actually are implemented and when the information they provide will inform regulatory decision-making.
- **The supply and quality of groundwater for the oilsands region is unknown.** As a result, the cumulative effects that both mining and in situ oilsands operations have on groundwater are unknown. Effective groundwater monitoring needs to be in place as in situ oilsands extraction ramps up, given the increased reliance on saline and non-saline aquifers for steam generation to extract bitumen using in situ techniques.
- **A weak voluntary approach could result in water shortages during low-flow periods.** The current Athabasca Water Management Framework, which boasts a strict cut-off of water withdrawals, is actually only backstopped by a voluntary agreement.
- **Permitted low-flow water withdrawals put the river ecosystem at risk.** According to the awarded water licenses, current and proposed projects could withdraw more than 15% of the Athabasca River's water flow during its lowest-flow periods. Water withdrawals during winter low-flow periods risk reducing the availability of fish habitat and could reduce the health of the river's ecosystem

Tailings

The current regulatory efforts to manage growing tailings lakes are not preventing massive increases in overall tailings volume.

- **Tailings lakes have a large and growing legacy.** There are no comprehensive rules to address the legacy of the 223 billion gallons of toxic waste on the landscape.

- **To date, there has been no successful reclamation of tailings.** Although Suncor's Pond 1 has achieved a revegetated solid surface, this represents less than 1% of the total area occupied by tailings ponds today.
- **More research is needed on the rate of tailings seepage.** Modelled estimates suggest that 11 to 12.6 million litres (2.9 to 3.3 million gallons) of tailings leak into the environment each day from tailings lakes. The fact that little information is available on the actual rates or the composition of seepage indicates a concerning lack of transparency, not a lack of seepage.
- **New rules for tailings reclamation must be enforced.** In February 2009, the Alberta Energy Resources Conservation Board announced new rules to regulate the reclamation of tailings waste. While only 2 of 9 submitted tailings plans met the requirements of the regulations, the Board has approved all nine plans.

Greenhouse gases

Oilsands are a major and growing source of greenhouse gas emissions.

Neither the Government of Canada nor the Government of Alberta have climate policies in place that will counter the fast growth of greenhouse gas emissions from oilsands.

- **Alberta's climate targets are weak.** Policy allows for significantly higher emissions than recommended by climate science. With an emissions target of 16% above 1990 levels by 2050, Alberta regulates an emissions growth plan over the long term, in contrast to many other industrialized nations and scientific consensus.
- **Alberta's climate plan is likely to achieve less than one-fifth of the reductions the plan calls for by 2020.** This is due to weaknesses in the policies and accounting for emissions reductions. As a result, the plan will fail to achieve absolute reductions.
- **Meeting Canada's 2020 climate targets would require a tenfold increase in the government's climate change effort.** The projected increase in Canada's greenhouse gas emissions between 2005 and 2020 will come almost solely from the oilsands, but Canada's and Alberta's efforts to constrain these emissions is out of step with Canada's climate commitments.
- **Carbon capture and storage (CCS) is unlikely to significantly reduce emissions in the oilsands in the next 20 years.** Without a meaningful and effective price on carbon, the cost of capturing emissions from many sources is likely to be prohibitive.

This fact sheet was created from the Pembina Institute's "Summary of Environmental Management Policy Deficiencies in the Canadian Oilsands: Implications for U.S. Decision Makers." To download this briefing note and find more information about oilsands, visit: www.pembina.org/oil-sands.