



*Syncrude's Mildred Lake tailings pond in 2008. Today, over thirty years after Syncrude began production, Environment Canada warns that addressing knowledge gaps on the fate and transport of toxins in oil sands processed water remains an important concern.*

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## Ottawa May Monitor Oil Sands' Effects on Wildlife – Limiting Them Would Be Better

It's been about a year since scientists David Schindler and Erin Kelly released their peer-reviewed research identifying elevated heavy metal levels in the Athabasca River as likely due to the tar sands industry's activity. A year has also passed since James Cameron, superstar Hollywood director, made a high profile visit to the oil sands mining region. Likewise, it has been a year since federal and provincial scientific advisory panels were appointed in response to these events and to mounting international concerns over environmental and social problems raised by Canada's permissive bitumen extraction policies.

In December 2010, the federal scientific advisory panel issued their report and criticized existing oil sands environmental monitoring programs as poorly designed, incoherent, secretive, and lacking the resources devoted to

comparable Canadian environmental challenges such as acid rain or Great Lakes pollution. In March 2011, the provincial panel similarly concluded that existing provincial and industry water monitoring programs were neither designed to, nor implemented to be able to, determine impacts from oil sands operations. This panel concluded: "Taking into consideration all data and critiques, we generally agree with the conclusion of Kelly et al. that PACs and trace metals are being introduced into the environment by oil sands operations." (See the April 2011 issue of *WLA* for further comments on both reports.)

The federal response to these findings included Environment Canada's release of a water quality monitoring plan for the lower Athabasca River in March 2011. In July Ottawa released a broader regional water quality monitoring plan

plus aquatic and land-based biodiversity plans and air monitoring plans. This is a good start. But, after examining the land-based biodiversity monitoring component in more detail, it's clear these steps need to be accompanied by substantive actions, sooner rather than later, to begin to manage more responsibly the intense cumulative impacts of oil sands development on wildlife.

The proposed aquatic biodiversity plan includes a long overdue comprehensive approach to evaluating oil sands development effects on in-stream plants, insects, and fish. If funded adequately and carried out diligently, it will go a long way toward correcting the deficiencies identified in previous monitoring programs. There is also a plan to dramatically expand monitoring of oil sands effects in the downstream wetland ecosystems in the Peace-Athabasca delta

and Slave River delta.

The newest monitoring plan proposed is the terrestrial (land-based) portion which I will discuss in some detail below as it has received much less attention relative to the aquatics and water components. It has two main thrusts, one to monitor contaminants in wildlife and one to report on habitat disturbance. In both cases, there is a clear assertion of federal jurisdiction in these actions through the *Canadian Environmental Protection Act*, *Migratory Birds Convention Act* and *Species at Risk Act*. The habitat disturbance section also notes that Canada, as a signatory to the International Convention on Biological Diversity, “is committed to the conservation of biodiversity.” It’s a welcome change to see the federal government more clearly acknowledging that it possesses the legislative foundation to carry out oversight responsibilities of the tar sands industry’s ecological impacts.

The contaminants monitoring component outlines five specific programs. The only one relating to plants will examine the health of three species (common cattail, reed canary grass and speckled alder) to assess their potential to take up contaminants in soils affected by oil sands processed water. That program will assess how these plants are affected by naphthenic acids, acids in tailings water that are highly toxic to organisms. In other words, the study will assess the health of key plants in the open water salt marshes being constructed to aid in reclaiming oil sands sites.

However, by far the most prevalent wetlands in the region now are fresh water peat-based wetlands. Although the aquatics program proposes to monitor wetland health in the deltas hundreds of kilometres downstream of operations, AWA would have liked to see a program addressing contaminants in nearby peat wetland plant communities such as McClelland Lake wetland complex. This complex has a mining project poised to invade its upper watershed and is close to other mines and in situ projects. Fresh water peatlands make up over 40 percent of the natural landscape across the oil sands region; migratory birds and

threatened woodland caribou rely upon them and Aboriginal peoples value and harvest their resources.

In March 2009, an Alberta Water Council multi-stakeholder team (which included representatives from Alberta Sustainable Resource Development and Alberta Environment) unanimously recommended that Alberta develop a monitoring program to test for contaminants that affect human health in traditional subsistence foods in key areas across the province; this team regarded such a program to be of provincial importance. But we don’t believe there has been any follow up on that recommendation.

Now the federal government proposes to take a step in that direction. One study will evaluate oil sands-related contaminant levels in 120 mallard ducks and 60 river otters harvested each year by hunters and trappers to the north

**“The predictive relationships between [cumulative effects of mines and in situ developments] and the distribution, abundance and demographics of wildlife populations in the oil sands region are largely unknown.”  
– federal biodiversity monitoring proposal**

and to the south of oil sands operations (the aquatics plan also recommends collaborating with Aboriginals who fish year-round). This seems a positive step in working with some residents of the region who harvest foods in the area. Another part of this same study will examine contaminants in the 50 dead or dying ducks per year that are collected by tar sands operators from five tailings ponds.

Two other studies will assess contaminants in wood frogs and toxins in feather tissues of live birds that nest near air quality monitoring stations. A fifth proposed contaminant study will harvest and analyze gull, tern, and swallow eggs. Swallow eggs upstream and downstream of oil sands operations will reveal more local effects on wildlife. An important goal here is to determine whether exploiting the tar sands may be responsible for the dramatically higher mercury levels typical of those eggs now when compared to the levels reported more than 30 years ago.

All these proposed contaminant studies are specific, detailed, and combine some innovative techniques with past experimental knowledge. They should be promptly implemented in order to close some of the knowledge gaps about the industry’s effects on wildlife that have not been addressed in 40 years of oil sands operations.

The second major component of the proposed biodiversity monitoring program is a habitat-disturbance monitoring piece. The proposed goals and scope of this plan sound exciting. It will not only cover the status and trends of selected wildlife and habitats but it also will evaluate how activities from exploration through reclamation of both mining and in situ (drilling) oil sands projects affect wildlife. However, further reading makes it clear this plan is not even close to being designed, let alone implemented. How the provincial governments (Alberta and Saskatchewan) and industry will collaborate in developing a monitoring plan has yet to be decided. A conceptual framework of ecosystem function needs to be developed, questions to drive the monitoring design need to be chosen, and monitored-species and stressor activities need to be selected.

In this section huge knowledge gaps are identified. It notes that we are just at “the early stage of the understanding of biodiversity in the western boreal forest” and admits that there is a “dearth of information on functional relationships.” The *Canadian Environmental Assessment Act* requires that every screening, comprehensive study of a project, and every mediation or assessment by a review panel “shall consider” any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out. Given that this requirement has existed since the law was passed in 1992 our profound mismanagement of tar sands development is underlined when the biodiversity monitoring proposal states: “The predictive relationships between [cumulative effects of mines and in situ developments] and the distribution, abundance and demographics of wildlife populations



*Boreal species such as woodland caribou need more than increased biodiversity monitoring to have a future in northeast Alberta.*

PHOTO: © JOHN E. MARRIOTT PHOTOGRAPHY

in the oil sands region are largely unknown.”

It also acknowledges the huge risks to ecosystems that government has blithely taken by leasing and approving so much activity in the bitumen deposit regions: “The time to successfully restore historic biodiversity (composition, structure and function) is currently unknown because there are currently no technologies to restore some ecosystem components. Reclamation of peatlands and their associated hydrology, for example, is not possible with current approaches and technology.” Peatlands make up over 40 percent of the intact landscape of this region so their ongoing destruction is a huge loss to the oil sands region’s boreal ecosystem.

The commitment of the federal government to more oversight rests on shaky ground. While these planning documents are encouraging, the recent substantial budget cuts to Environment

Canada and Department of Fisheries and Oceans undermine the good intentions of federal research scientists in drafting these plans. We urge the federal government to devote the resources needed to develop the contaminants and biodiversity monitoring program promptly. One conclusion seems obvious given the knowledge gaps these documents reveal and the scope of past leasing decisions. Government must stop approving oil sands leasing and development. Waiting years for an elaborate biodiversity monitoring system to document the demise of intact old growth and peatland-dependent species is more fiddling while Rome continues to burn. AWA supports biodiversity monitoring, but not as a substitute for taking more responsible management actions now. Today’s western scientific research and aboriginal traditional knowledge underline this need for immediate action.

With federal urging, the provincial government should implement a strong wetland no-net-loss policy that will motivate an “avoidance and loss minimization approach” in the in situ area (ninety-seven percent of Alberta’s oil sands region is likely to be exploited by in situ methods since the bitumen deposits there are too deep to mine). Governments should announce ecological compensation for the mass destruction of peatlands in the 4,750 km<sup>2</sup> mineable oil sands area (three percent of Alberta’s oil sands region by area). This destruction requires large territorial offsets in the Peace and Athabasca watersheds to improve aquatic ecosystems already impacted by decades of cumulative resource exploitation. The federal and provincial governments should meet their legal obligations to produce strong measures to protect and restore woodland caribou habitat. This also would benefit many other old growth forest and peatland dependent species. With federal urging, the provincial government should implement land-use guidelines similar to those outlined in the Cumulative Environmental Management Association’s 2008 Terrestrial Ecosystem Management Framework. This Framework used available data for the Regional Municipality of Wood Buffalo to test broad land-use policies that would allow key environmental indicators to only decline slightly below the range of natural variability. The Framework included a recommendation to set aside 20 to 40 percent of the oil sands region in protected areas (something the draft Lower Athabasca Regional Plan has failed to do). It also proposed a land disturbance threshold for active oil sands leases to motivate faster reclamation.

The last twelve months has been a year for releasing studies underlining how poorly our governments have managed the ecological aspects of developing the oil sands. As the paper and ink devoted to this subject has grown so too have the habitat destruction, air emissions, surface and groundwater risks and tailings ponds. Without meaningful federal leadership to assure that management actions actually curb the huge pressures on wildlife from currently approved oil sands activities, the good intentions of the proposed federal monitoring systems will be too little, too late. 🐾