

Canada's Oil Sands
Scales and Perspectives
by Jeff Powers & Byron White

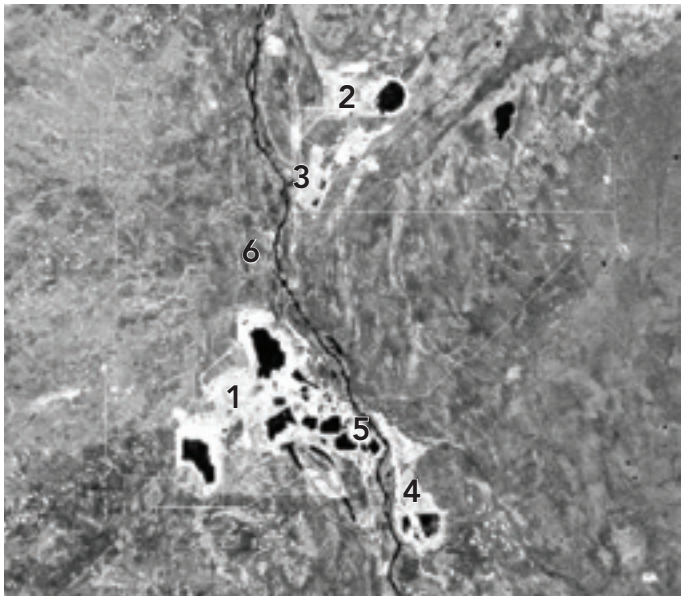
The ubiquity of Oil Sands coverage in the media today attempts to compress one of the largest industrial endeavours undertaken by man into sound bites and quotes. We are bombarded with politicized snippets of information—from environmental impacts to economic drivers. Many people are well aware of the plethora of arguments that surround the project, but an aspect that remains elusive

is the sheer magnitude of scale that the Oil Sands encompass. The following is an effort to gain some form of perspective of the Oil Sands, attempting in simple terms, to contextualize scales of land area, volume of oil, water and the economic reach into a wide-angle snapshot of the sprawling nature of the project.



1.7 TRILLION barrels of oil in the Oil Sands (or 2700 km³)

8x The estimate reserves of Saudi Arabia



1. Syncrude—Mildred Lake
 2. Syncrude—Aurora North
 3. Shell Canada—Muskeg River
 4. Suncor—Steepbank/Millennium
 5. Suncor—Tailings Pond 1
 6. Athabasca River

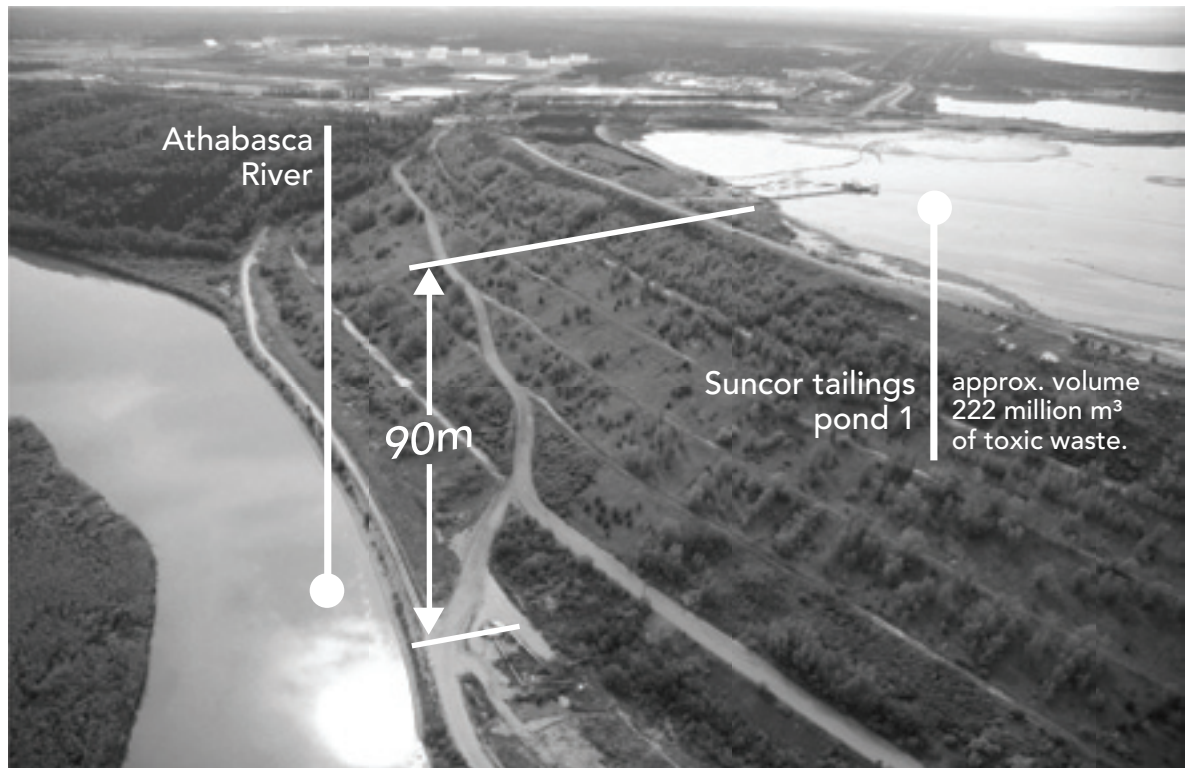


Photo: David Dodge, The Pembina Institute

Suncor Board of Directors and Other Corporate Affiliations

Byron White and Jeff Powers are recent graduates of the University of Toronto's Daniels School of Architecture Landscape and Design, and founders of the design consultancy and research group, Methods&Operations. Their research interests range from countrywide landscape and architecture systems analysis to the ergonomics of handrails—and various stops in between. www.methodsandoperations.com



...or 4/5 of the Great Lakes



50%

 of the water in the Great Lakes would be required

90% of the fresh water used for extraction is held in toxic tailings ponds. Syncrude's tailings pond is considered the second largest dam in the world.



Current surface mining of bitumen at the Suncor Millennium Mine north of Fort McMurray, Alberta.

Photo: David Dodge, The Pembina Institute



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That is, with current production methods, between 2–4.5m³ of water is required for every 1m³ of crude extracted. To extract the total oil sands reserves at this rate it would

require using 12,160 km³ of water—or 50% of the total volume in the Great Lakes or 10% of the Earth's total surface freshwater reserves.



Possible affected spill area.

Diseased fish from Lake Athabasca, collected by Ray Ladouceur, Dec. 2009.

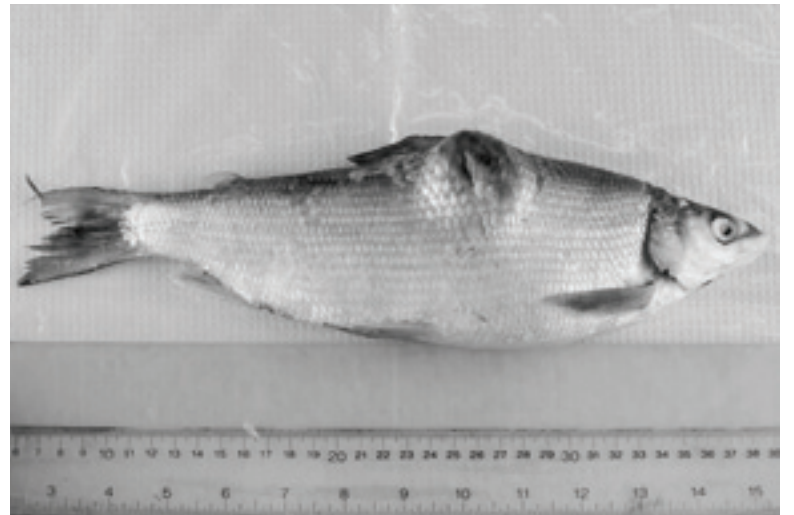


Photo: John Ulan, EPIC Photography.



J Brian MacNeill



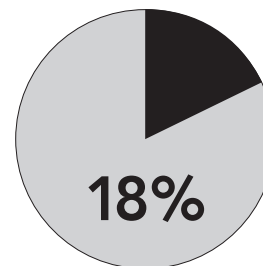
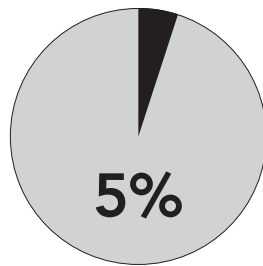
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Statistics Canada Values the Oil Sands at \$342 Billion of Canada's Worth

Other Estimates Put it Closer to \$1482 Billion of Canada's Worth

Andrew Sharpe. The Valuation of the Alberta Oil Sands. 2008