



Death by a Thousand Cuts

The need for a new vision for in situ oil sands development in Alberta's boreal forest

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Outline

- Pembina's Vision
- Focus of my comments today
- What is Deep Oil Sands development?
- Impacts
- Death by a Thousand Cuts
- Questions or issues of clarification

An Oil Sands Vision

- *Development of the oil sands occurs at a pace and scale that:*
- *respects the capacity of regional ecosystems to be sustained,*
- *addresses global climate change by achieving deep reductions in greenhouse gas emissions,*
- *optimizes economic benefit to the public owners of the resource, and*
- *continuously improves the quality of life of all Albertans today and for future generations.*

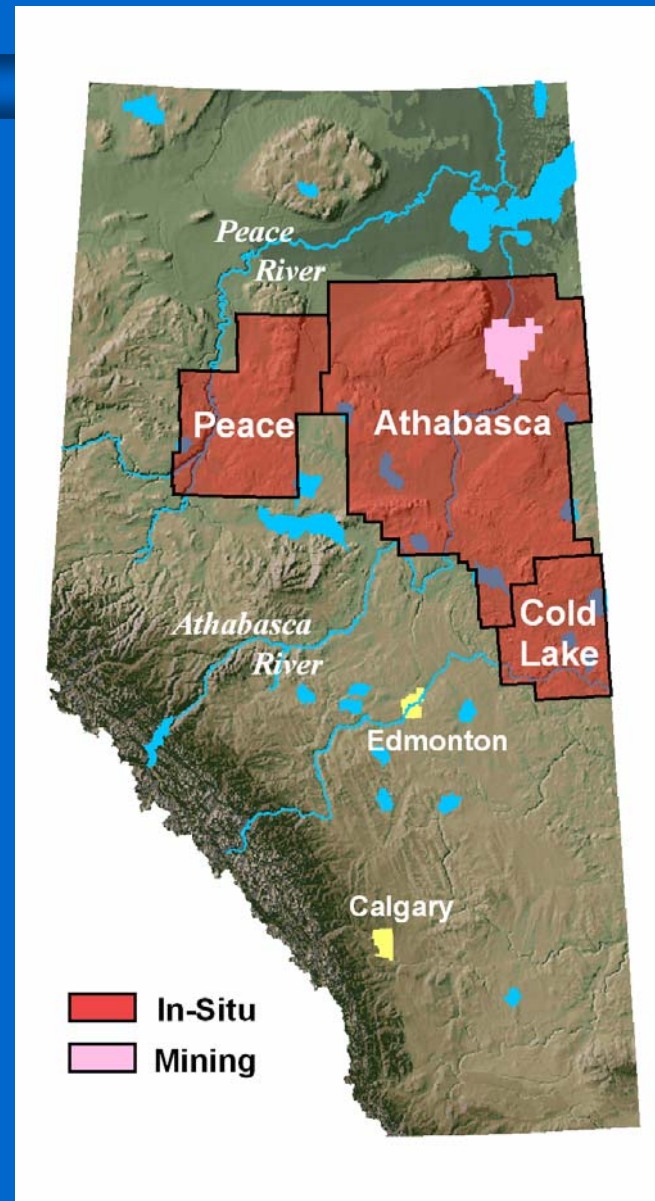
Focus of my comments today

- My colleague Dr. Mary Griffiths presented a vision concerning water use by oil sands – particularly as it pertains to in situ oil sands development in Bonnyville yesterday
- My comments will largely focus on the projected landscape impacts of in situ development and promote an alternative vision

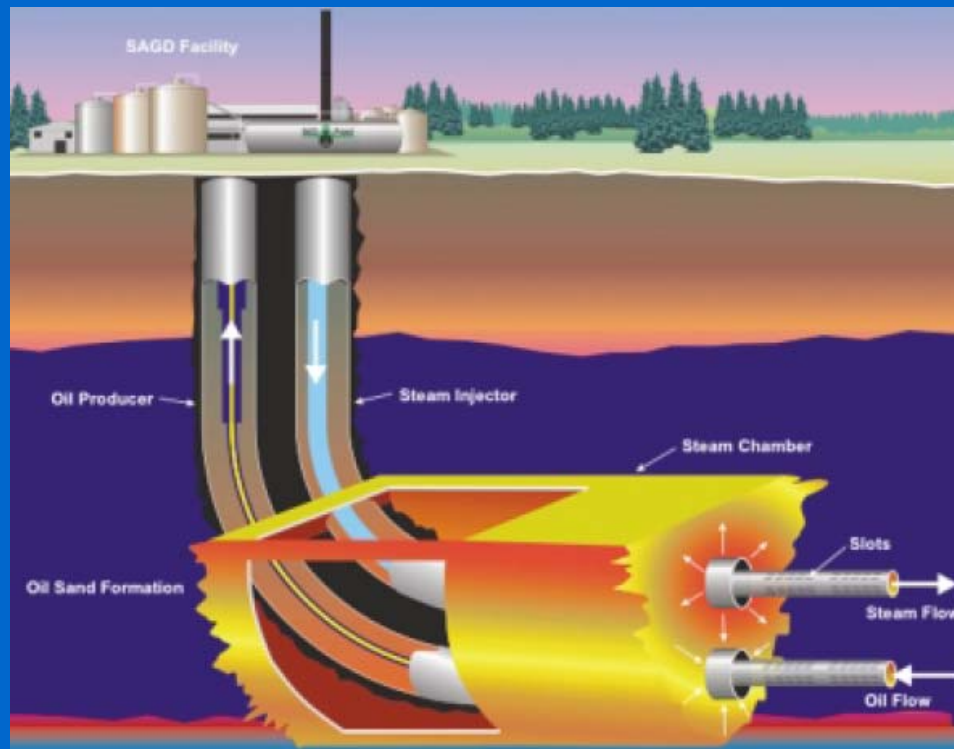
An Industrial Landscape?

- Oil sands are composed of sand, silt, clay, water and about 10% bitumen (tar).
- These enormous deposits make up about 21% of the province. Area of 14 million hectares of boreal forest (140,000 km²).
- 300,000 hectares is close enough to the surface to mine
- Although mining impacts are severe, from a land impact perspective, will be dwarfed by the impacts of deep oil sands development

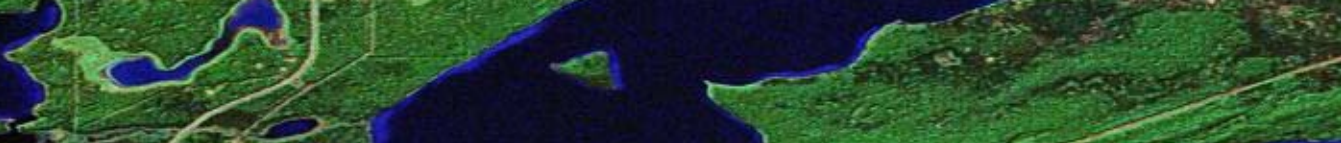

Deep oil sands
cover an area
almost 50x larger
than deposits
close enough to
the surface to
mine



In situ (in place) Extraction




- Over 80% of the bitumen can only be extracted 'in situ' whereby high-pressure steam is injected to remove the bitumen from the sand.



This was verified in a presentation to senior SRD staff by the Sustainable Ecosystems Working Group of CEMA on September 5

They concluded that preliminary results show:



Under the current development trajectory we see downfalls in many environmental indicators

SAGD is an intensive land use (we cannot maintain environmental indicators

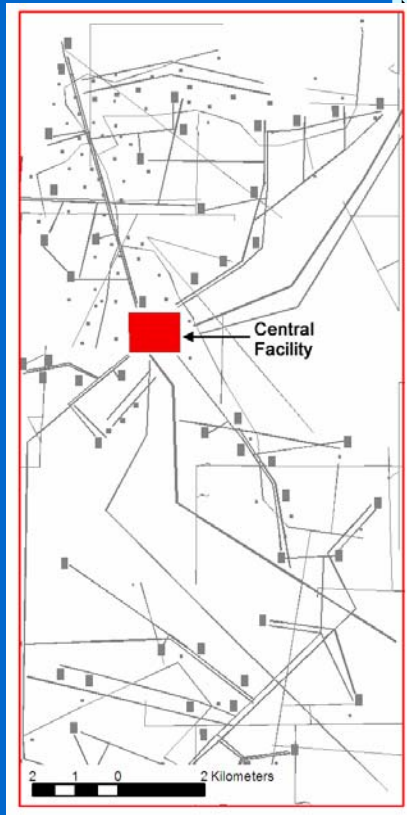
A few small tweaks to business as usual will not solve the problem



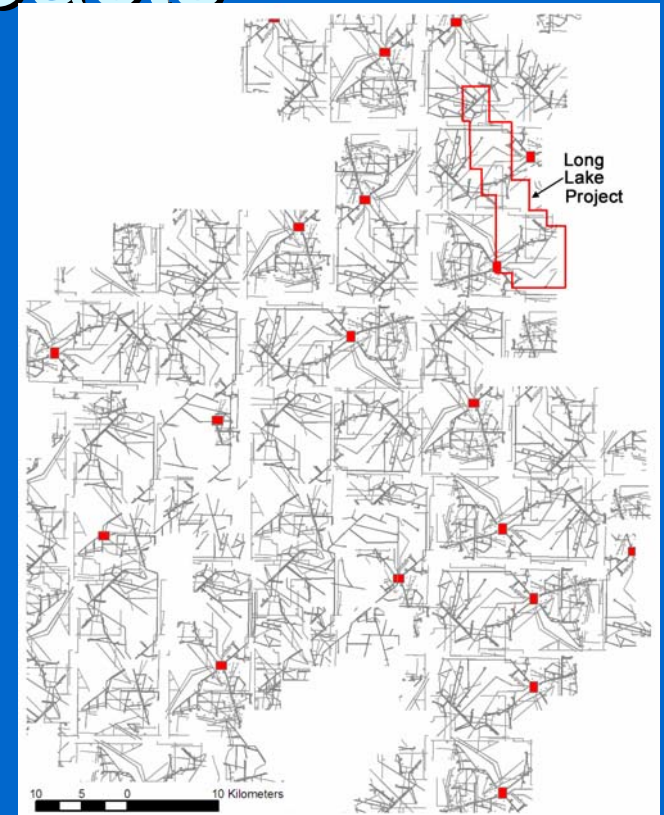
Deep Oil Sands -
an intensive
landuse



Pembina/CPAWS Modeled projected impacts



Generalized
deep oil sands
development
using data from
the OPTI-Nexen
Long Lake Project
Environmental
Impact
Assessment



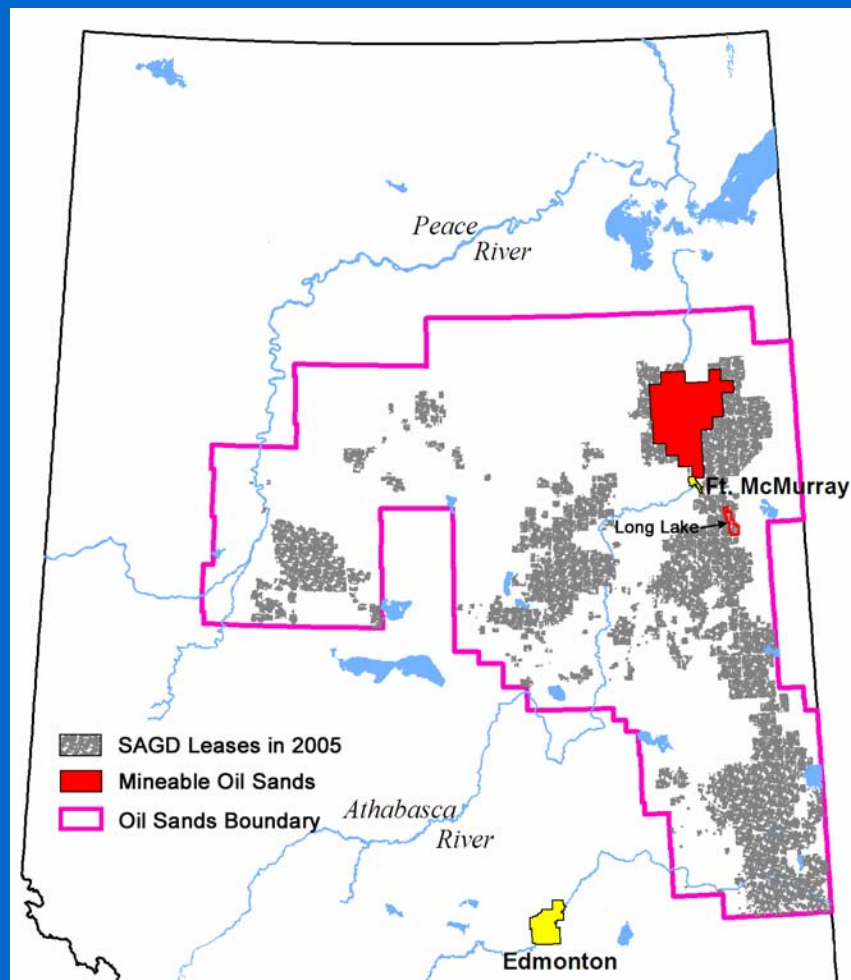
An average of
8.3% clearing

Development of existing
(2005) deep oil sands
leases (grey) will require:

2,960 km² of forest clearing

30,000 km of roads

Transform boreal forest to
an industrial zone the size
of Vancouver Island





Next slide shows simulation of future development footprint based development of existing leases



Fort McMurray

Gregoire Lake

Anzac

Gordon

63

© 2006 Navteq
Image © 2006 DigitalGlobe
Image © 2006 MDA EarthSat

© 2005

Google

52.84° W elev 497 m

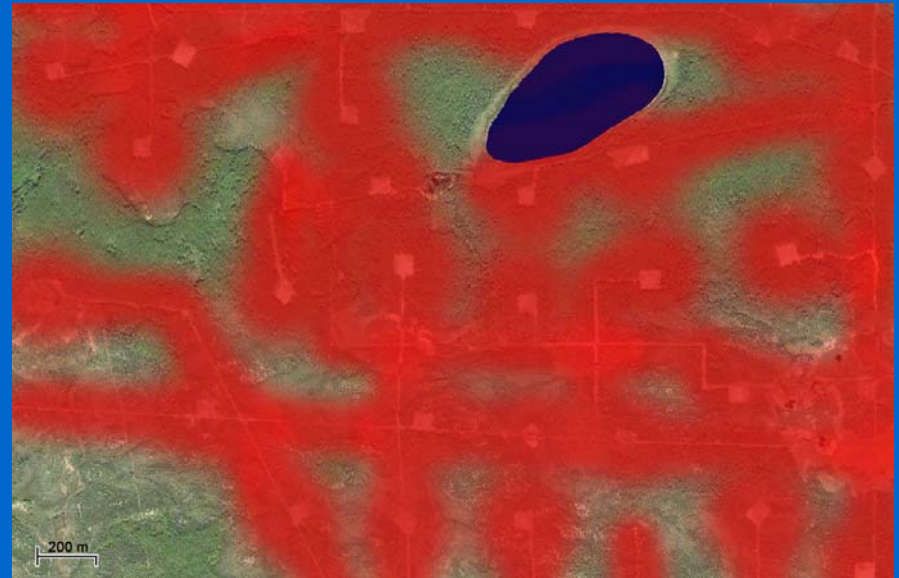
Streaming 100%

Eye alt 46.74 km

Fragmentation Impacts



Satellite image of deep oil sands site



Schematic of proportion of forest impacted

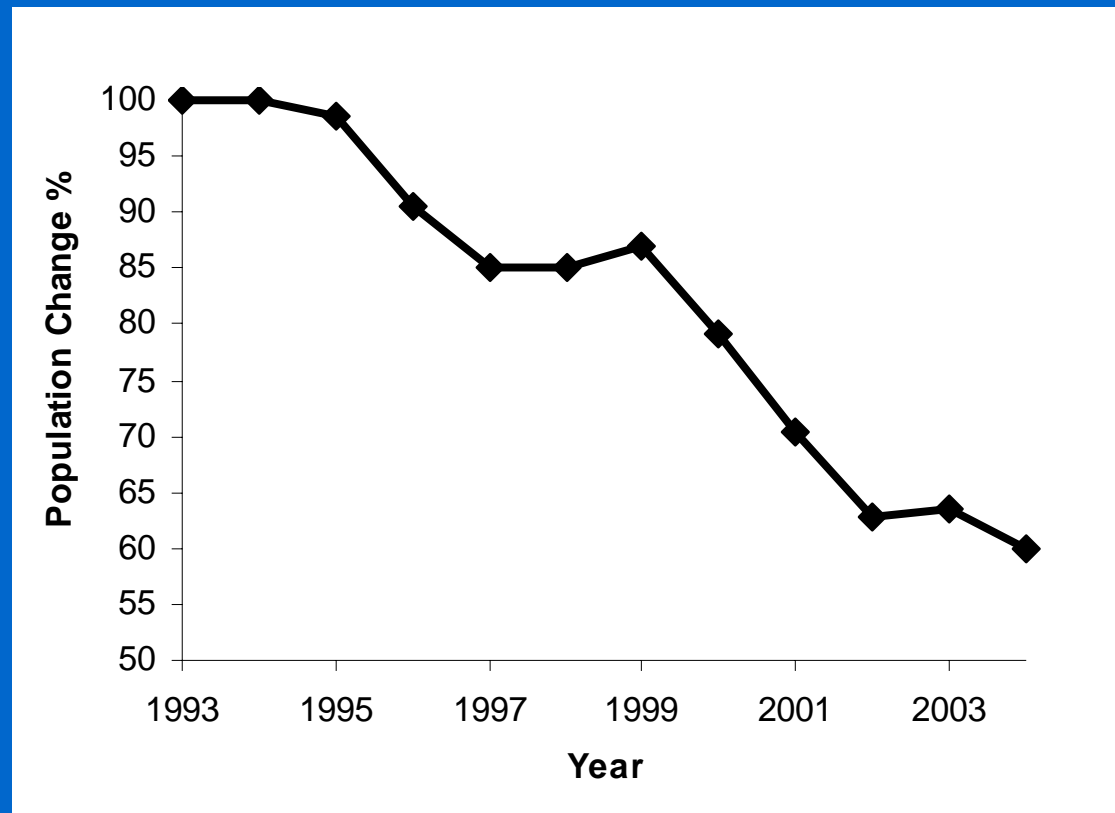
The Hard Fact

- The current regulatory process with respect to land impacts is broken
- Does not manage cumulative effects
- Assessments are not conservative
- The boreal forest cannot withstand the projected hundreds of concurrent oil sands projects (2700 agreements)

Woodland caribou in decline in deep oil sands areas

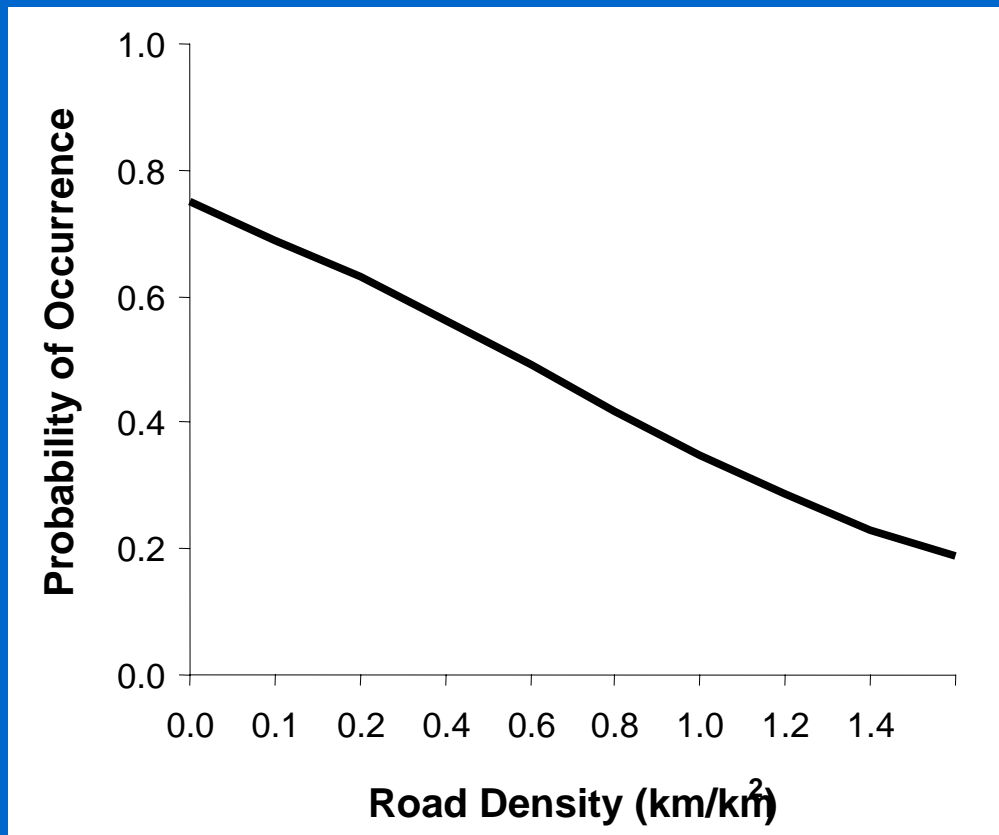


Courtesy: Wayne Lynch



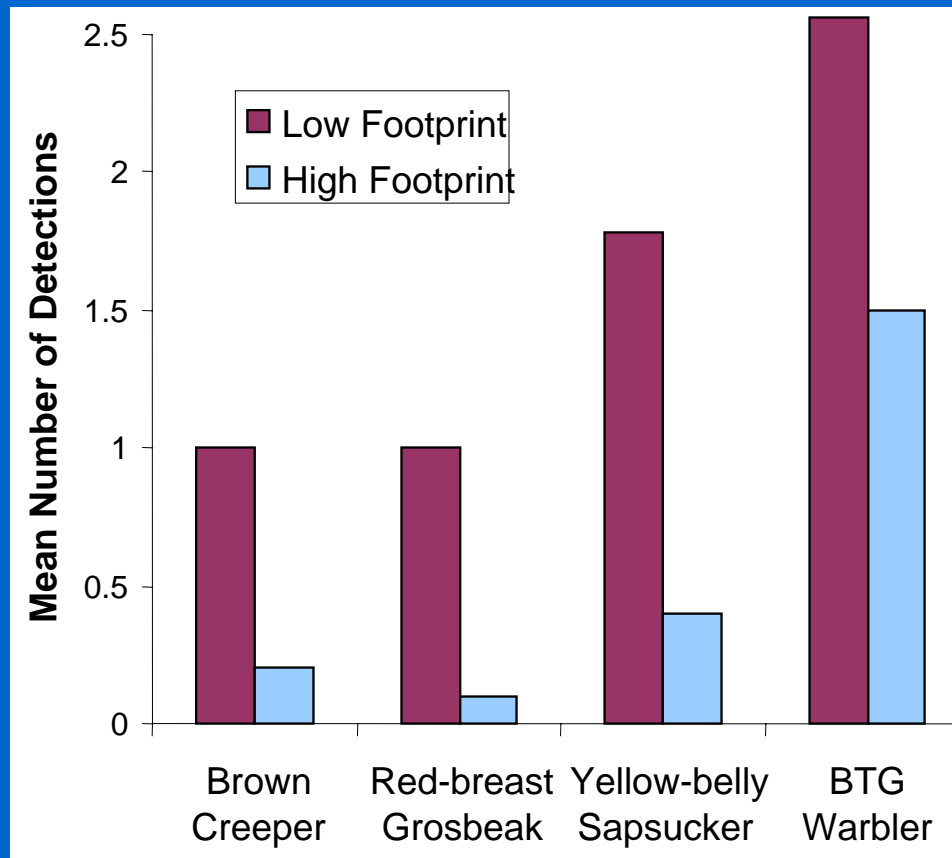
Source: Alberta Woodland Caribou Recovery Team. Alberta Woodland Caribou Recovery Plan 2004/05 – 2013/14 (2005)

Lynx vs Road Density



Courtesy: CPAWS

Forest birds vs Cumulative Impacts



Solutions

The following recommendations by CPAWS and the Pembina Institute are essential to minimize the risk to the boreal forest posed by poorly managed Deep Oil Sands development

Plan first....

- ***Develop a regional plan*** that describes the landscape objectives that will be met through the oil sands lease allocation and project approval process
- This is what CEMA was supposed to have done, but it has failed, for a host of reasons

Slow down and protect..

- ***Suspend new lease sales and project approvals*** until a regional plan is in place
- **Establish new interconnected protected areas** representative of the boreal region as a conservation offset measure

Limits and Standards...

- ***Establish limits on cumulative industrial disturbance*** and standards for the protection of wildlife habitat
- ***Establish a Land Management Planning Standard*** to guide the development of operating plans for all resource companies

Best Practices...

- ***Require all companies to implement “best practices”*** to minimize environmental damage from in situ oil sands development

Heliportable seismic

Compensatory mitigation

Restoration not reclamation

Conclusions

- Deep oil sands extraction will dwarf impacts of oil sands mines on the forest
- Important as MOSS said “regional environment will be protected”
- An area the size of Vancouver Island (> *35,000 km²) has been leased for deep oil sands extraction
- No plan is in place to protect the forest
- Oil Sands moratorium is needed

A vision for effective land management of the oil sands

Development of the oil sands occurs at a pace and scale that respects the capacity of regional ecosystems to be sustained,

- *Development of a plan before allocations and approvals*
- *Establish representative protected areas before it is too late*
- *Optimal Oil Sands Development rate directs Alberta Energy Allocations and not vice versa*
- *Limits and thresholds on maximum levels of disturbance – incorporate land trading system to offset disturbance*

Thank you!

- For copies of our report: *Death by a Thousand Cuts: Impacts of In Situ Oil Sands Development on Alberta's Boreal Forest*, to watch movie footage of deep oil sands impacts, or to obtain images of deep oil sands extraction, please visit

www.oilsandswatch.org

