



Regulatory Action in Alberta's Oil Sands

Energy Resources Conservation Board - Washington, D.C.

May 2011

Energy Supply

Canada is the largest supplier of crude oil to the U.S.

- Oil sands production a growing contribution to North American energy supply and security



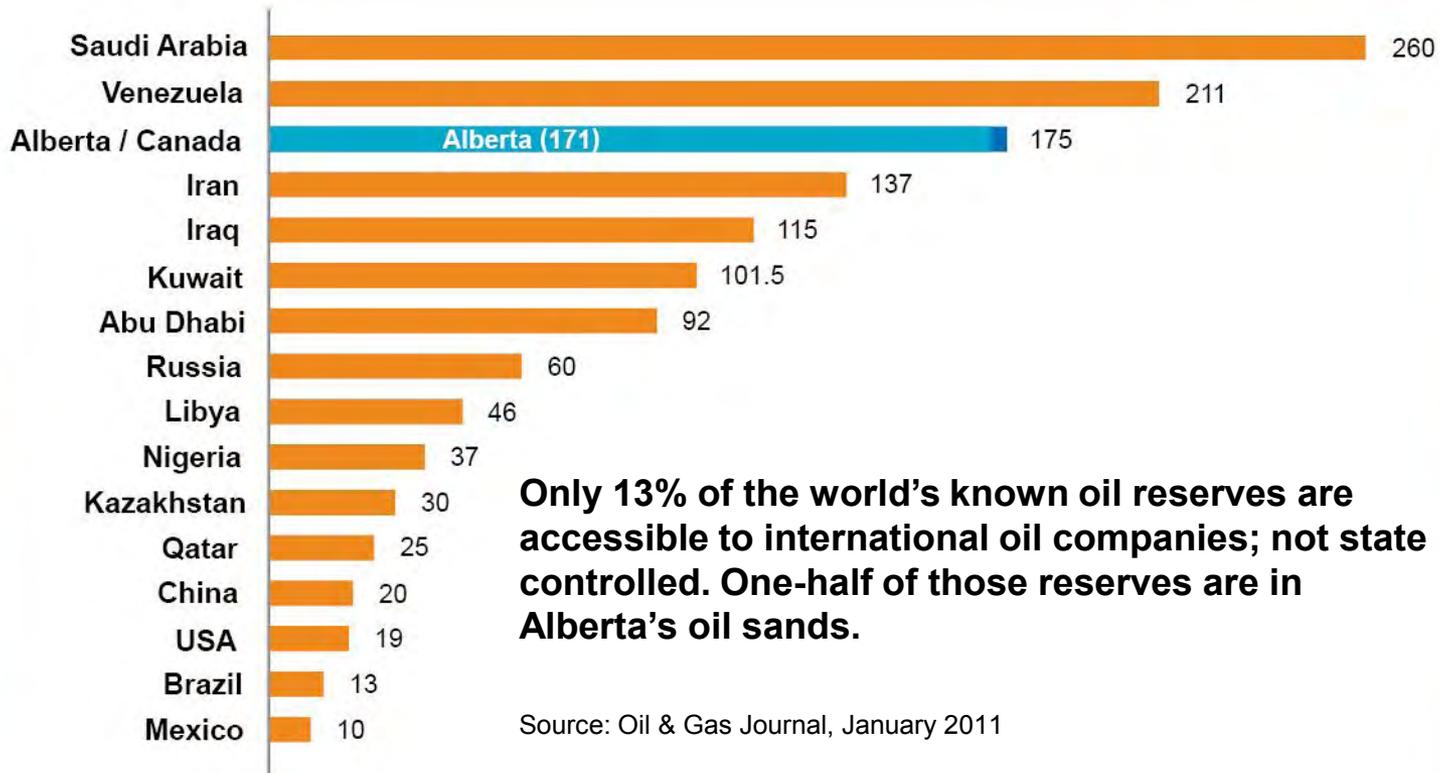
Alberta's Location



Alberta covers
661 190 km²
(255 285 miles²),
an area comparable to Texas.

World oil reserves

(billions of barrels - established)



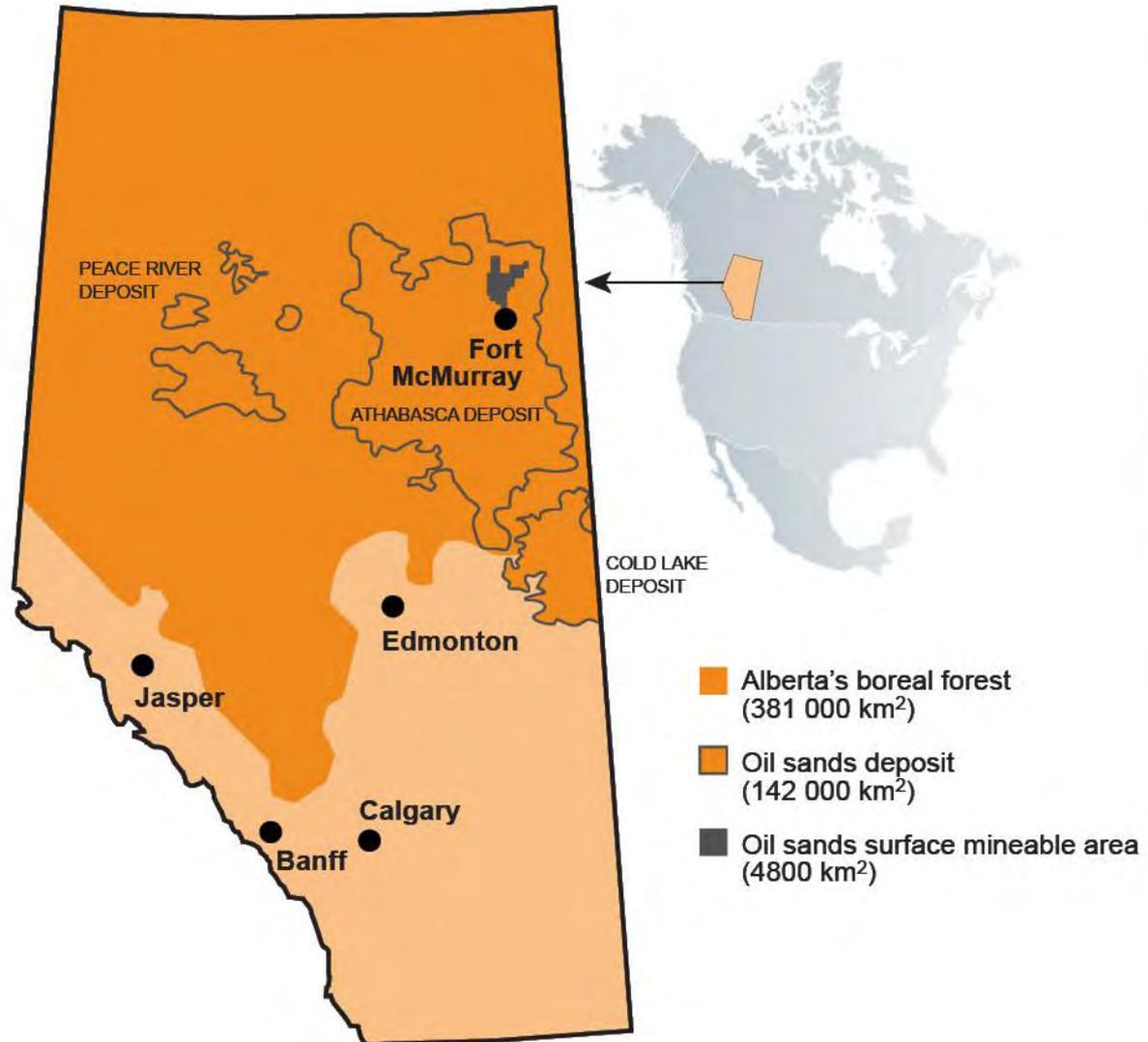
Where are the Oil Sands?



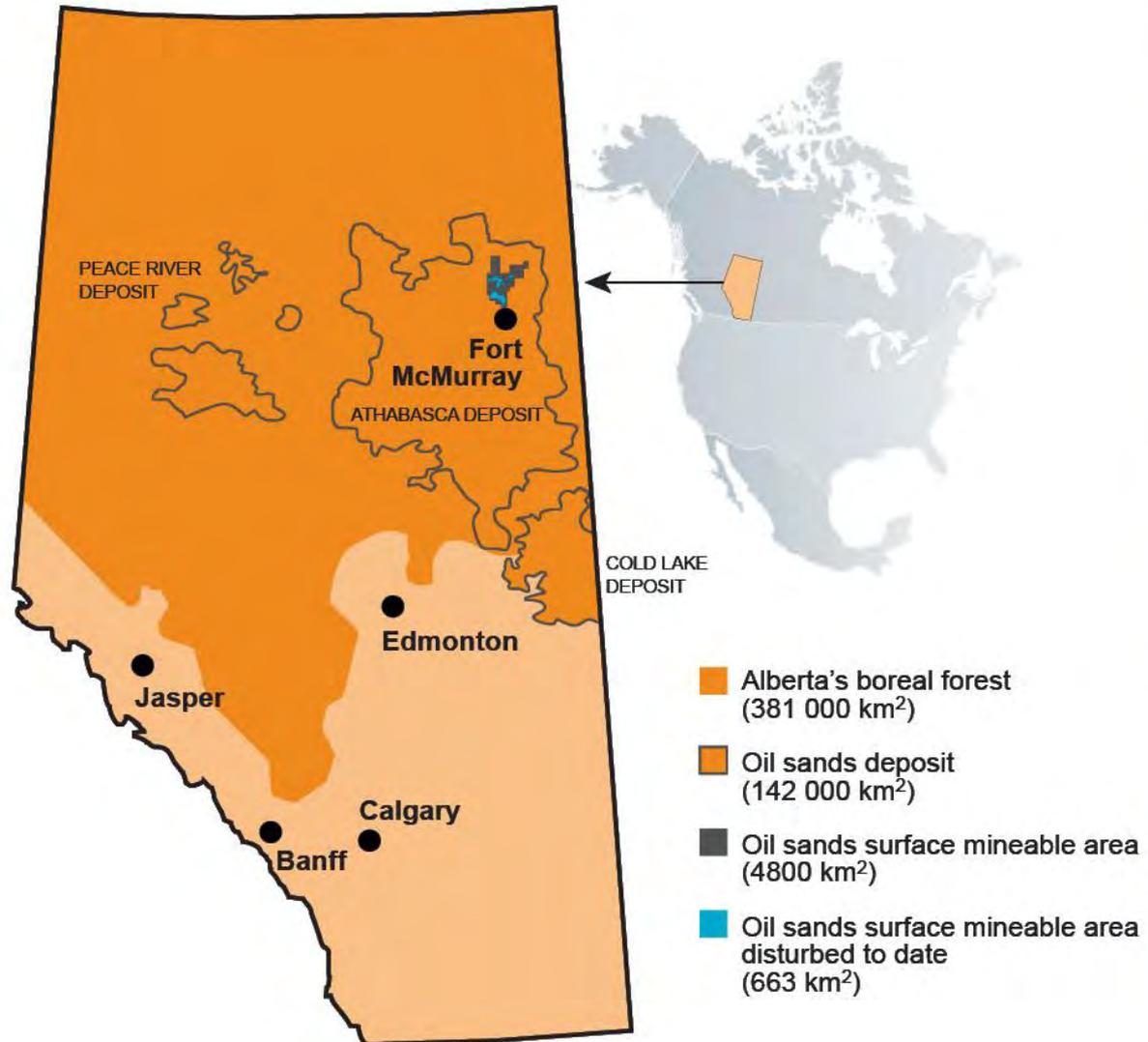
Where are the Oil Sands?



Where are the Oil Sands?



Where are the Oil Sands?



The Alberta Context

Albertans own the resource

Alberta Government

- Grants tenure
 - Sets and collects royalties
-

**Tenure is an opportunity,
not a right**



Alberta's Values

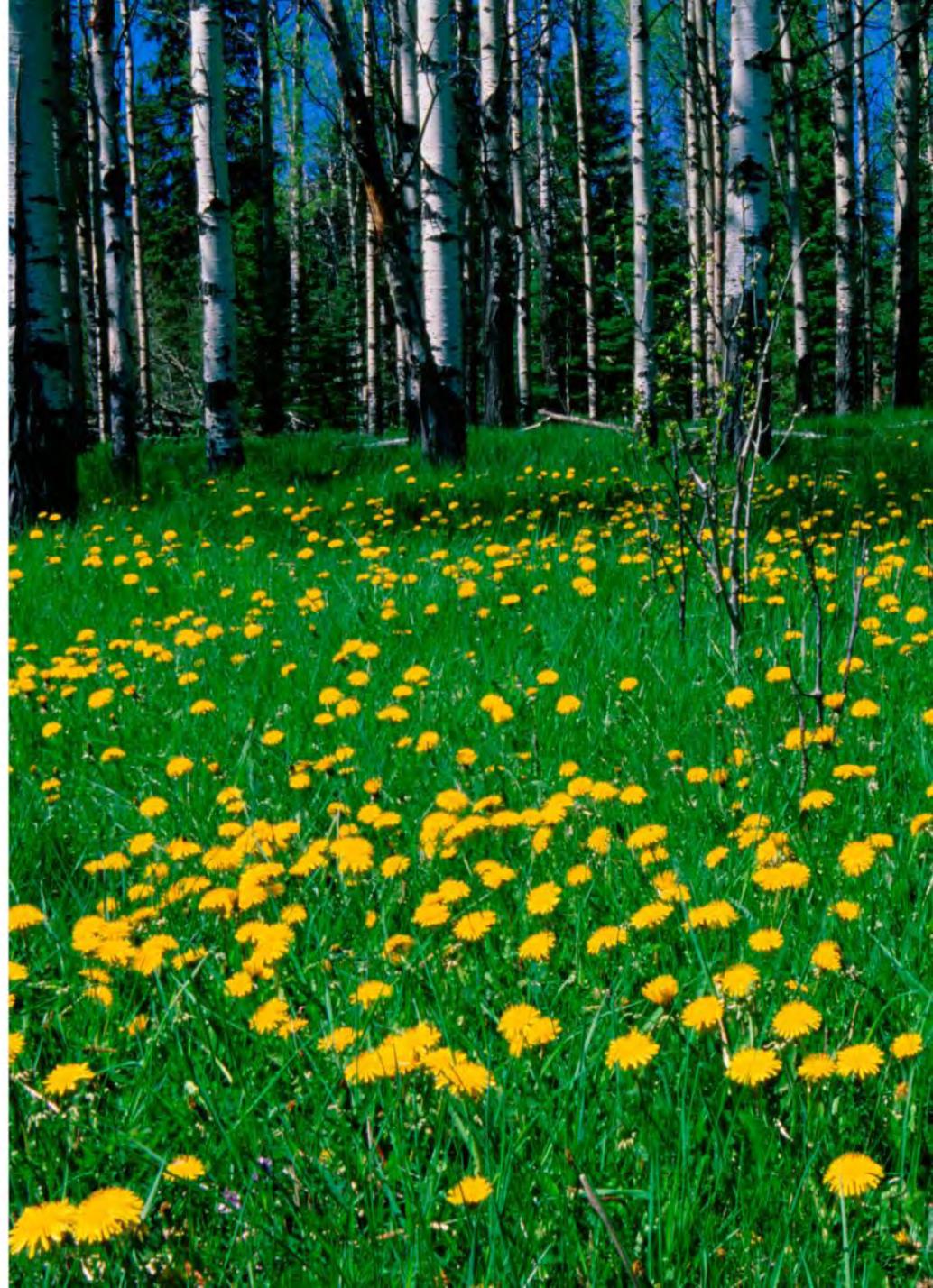
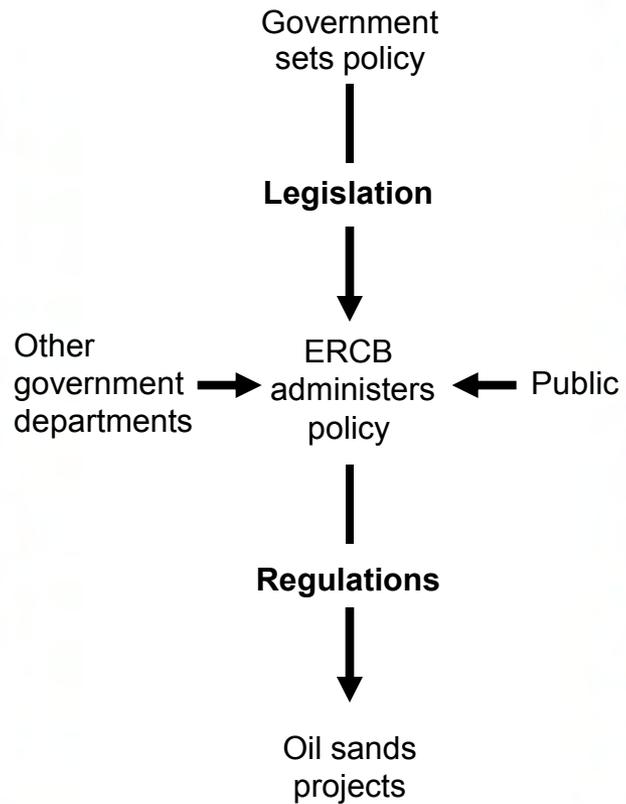
Oil sands regulation is governed by legislation that captures the following values

The public interest balancing

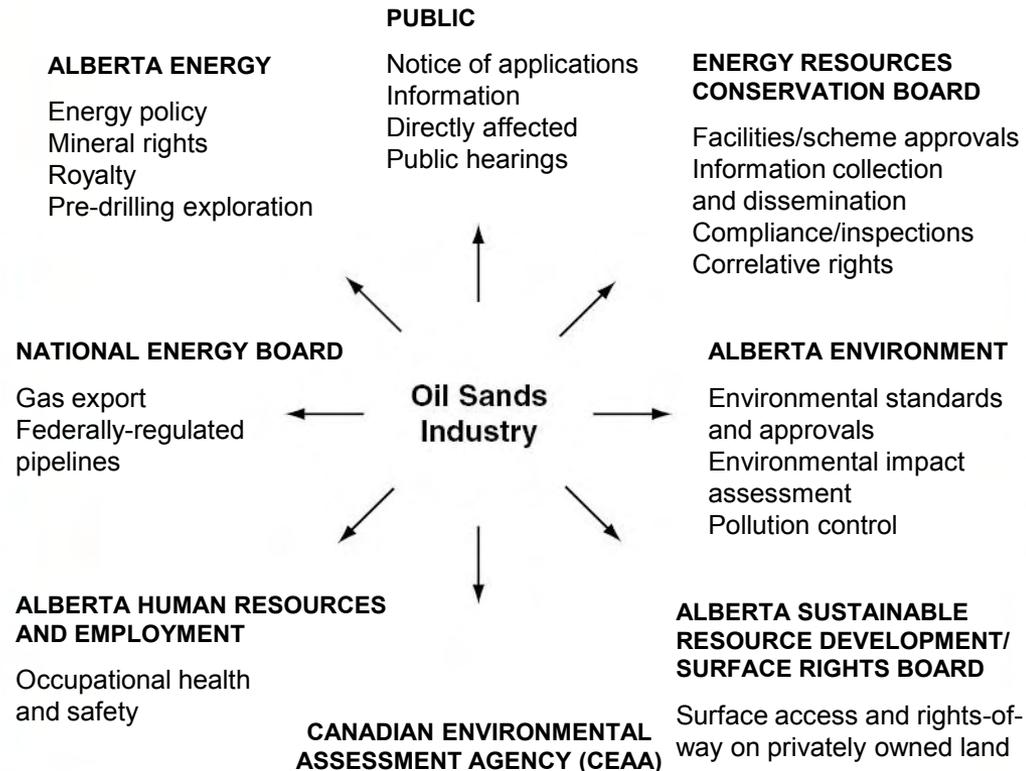
- Environmental, including cumulative impacts
- Social
- Economic



Alberta Regulation Framework



Primary Regulatory Interfaces



The ERCB

The ERCB's mission is to ensure development is safe, fair, responsible and in the public interest

- 70+ years of regulatory heritage
- Independent decision maker
- Technical experts
- 9 Board Members and 900+ staff (about 100 focused on oil sands development)



Energy Regulated Facilities

Producing Oil & Gas Wells	176 166*
ERCB Regulated Pipelines	394 000 km
Gas Processing Plants	955 (633 sweet gas, 292 sour gas)
Oil Sands	61 in situ**, 8 surface mines 154 primary recovery projects 20 experimental projects
Upgraders	5 facilities (240 360 m ³ per day capacity)
Coal Mines	12 plants (Annual production: 32.2 Mt)

* Producing wells: 9709 bitumen, 35 484 conventional oil, 116 603 gas, 14 120 CBM and 250 shale.

** As of January 2011







Photo credit: Cenovus Energy Inc.

Rigorous and Transparent Regulation: Application Process

No oil sands project may proceed without

- Meaningful consultation
- A project application, including an EIA and assessment of cumulative effects
- A complete review by expert ERCB staff
- On complex or contentious projects, a formal hearing
- A formal approval document

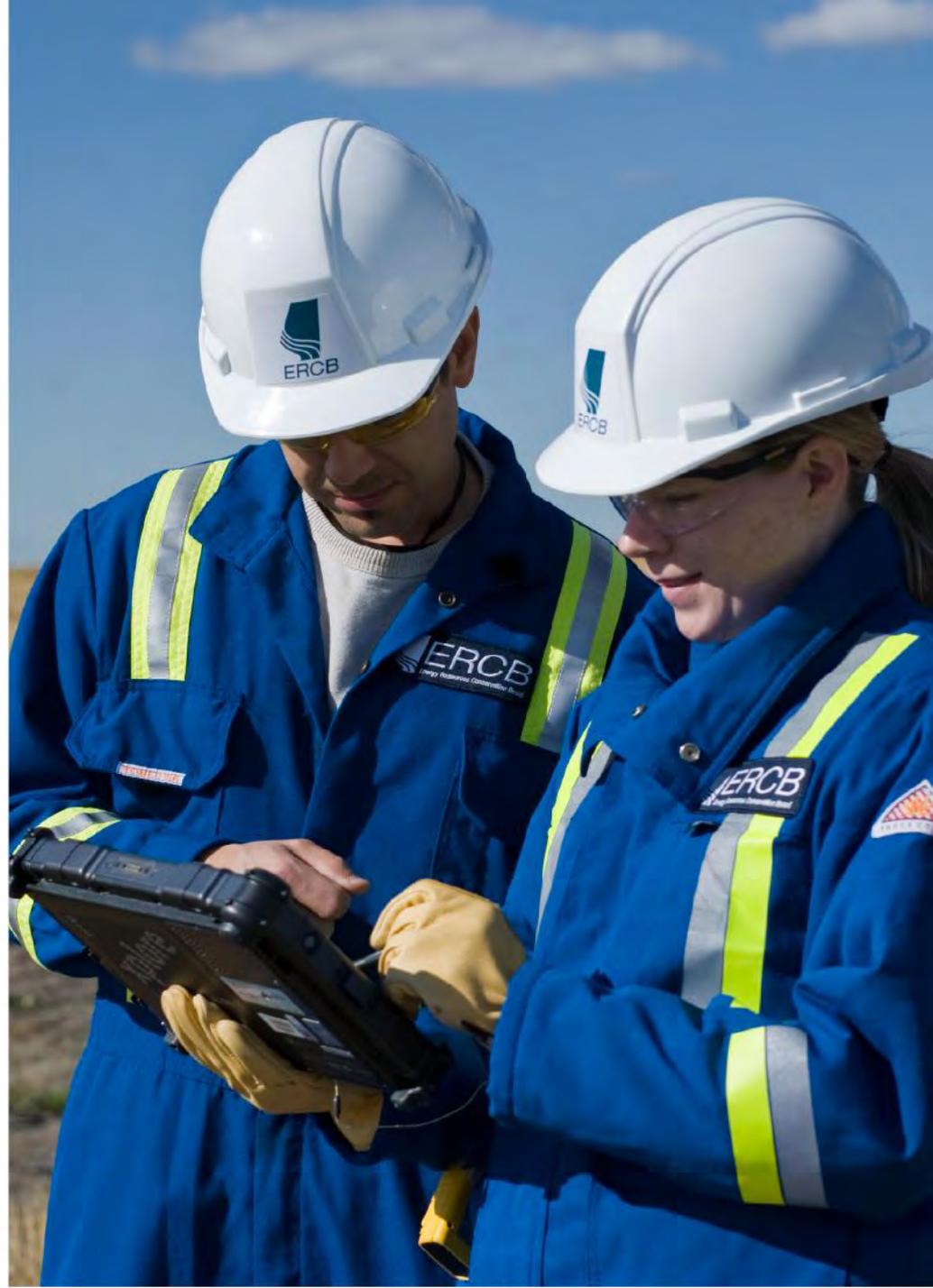


Rigorous and Transparent Regulation: Ongoing Surveillance

Ensure compliance with regulations

- Teams of inspectors, including professional engineering and environmental staff
- About 120 inspections of oil sands mines in 2010, typically lasting several days
- Conducted more than 10 000 inspections of in situ facilities since 2007

Take action when noncompliance found



Compliance Across Alberta

**Compliance with major ERCB
regulations was 98.6% in 2009**

**Full disclosure: monthly
public compliance summary**

Action against noncompliance

- Shut down 177 facilities in 2009: financial penalty plus immediately mitigates impact
 - Operator must show that it won't happen again: compliance plans are audited
 - Global refer status
 - Coordinate with other government departments
-

Government Action

- Prosecutions, fines, creative sentences

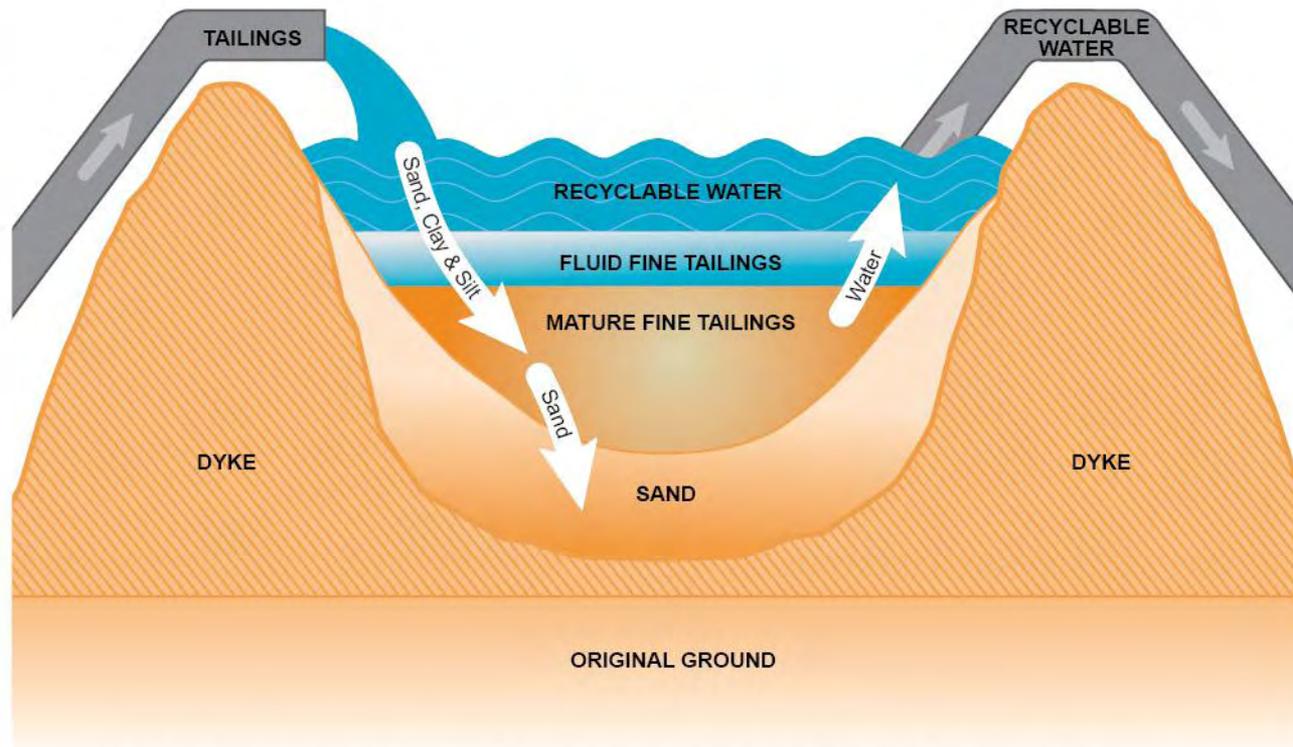




Mitigating Impacts of Industrial Activity

What regulation is about

Management of Tailings Ponds



Ponds have extensive groundwater monitoring and seepage capture systems

Directive 074: Tailings Performance Criteria and Requirements

**Convert fluid fine tailings to
reclaimable landscapes**

**Reduces amount of
fluid tailings**

Minimize the size of ponds

**Progressive reclamation
with timelines**



Results

Performance-based solutions

**Fostered investment in
new technology**

**Sharing of intellectual
property among operators**

**Operator plans cancelled to
create new tailings ponds**



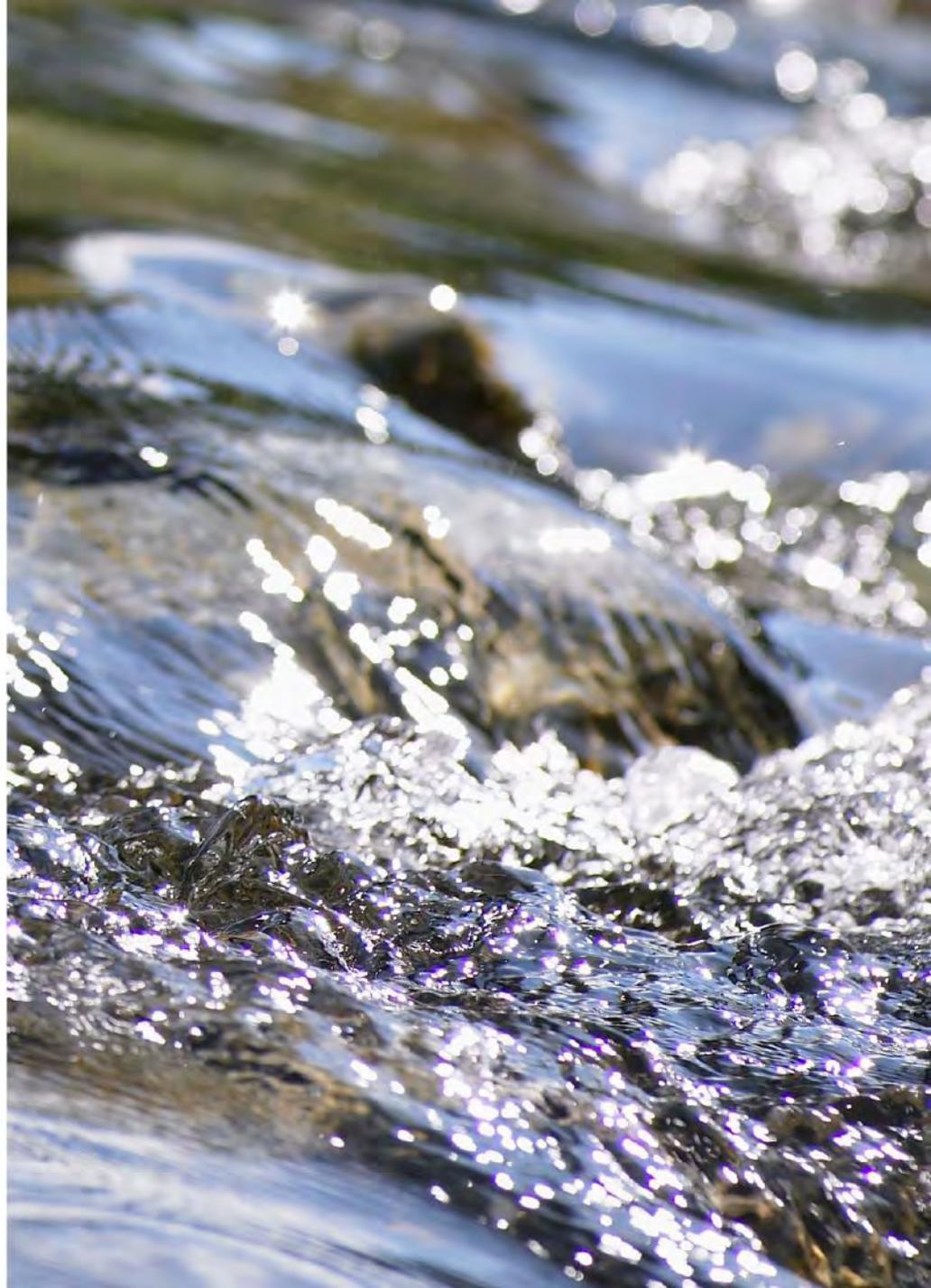
Water Quantity

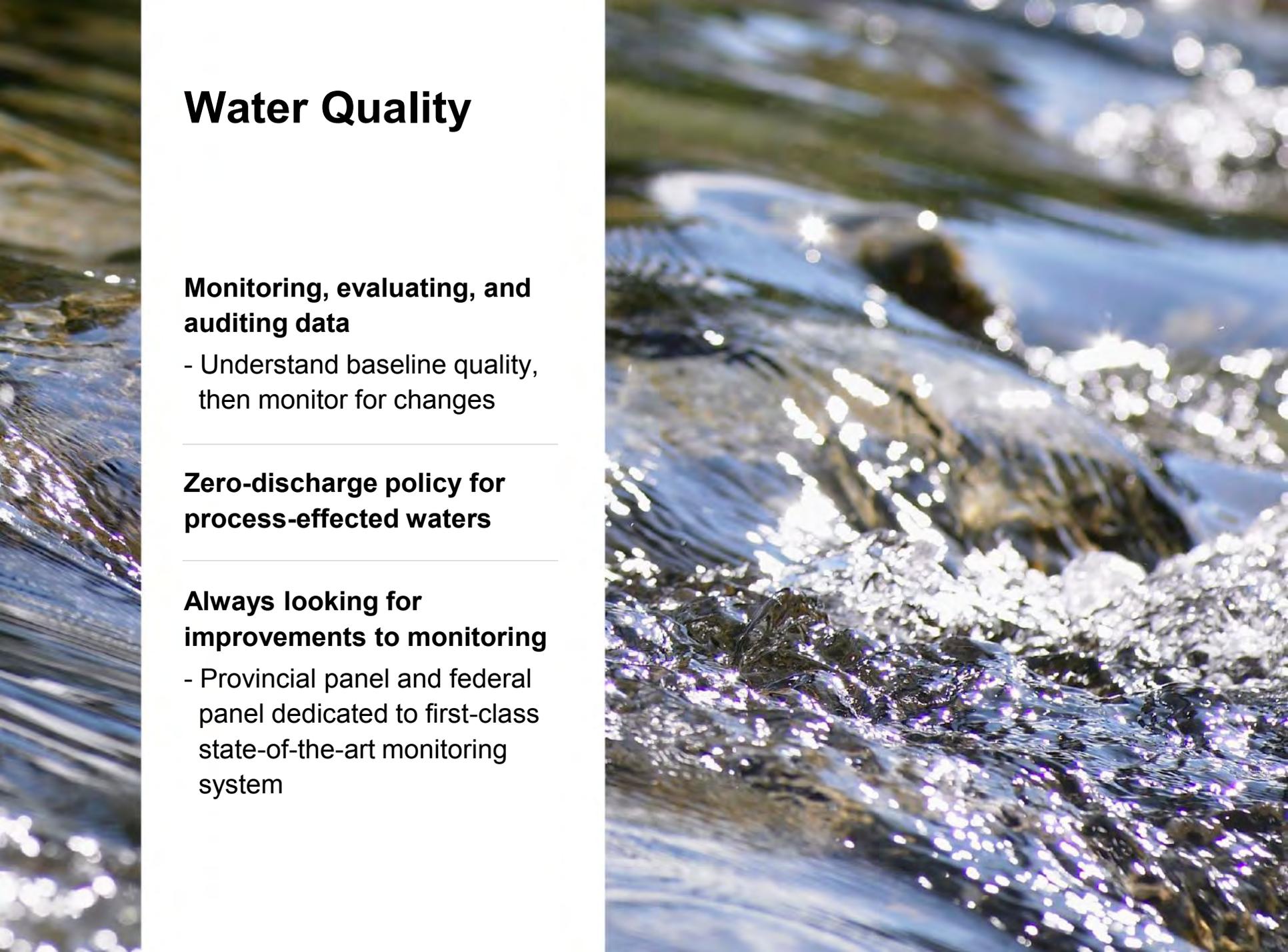
Water Management Framework sets strict limits

- 3% of the Athabasca River's annual flow is allocated for use: less than 1% is used

Mining projects use up to 85% recycled water

In situ projects average 75% recycled produced water and 10% brackish (total up to 100% on some projects)





Water Quality

Monitoring, evaluating, and auditing data

- Understand baseline quality, then monitor for changes
-

Zero-discharge policy for process-effected waters

Always looking for improvements to monitoring

- Provincial panel and federal panel dedicated to first-class state-of-the-art monitoring system



Groundwater

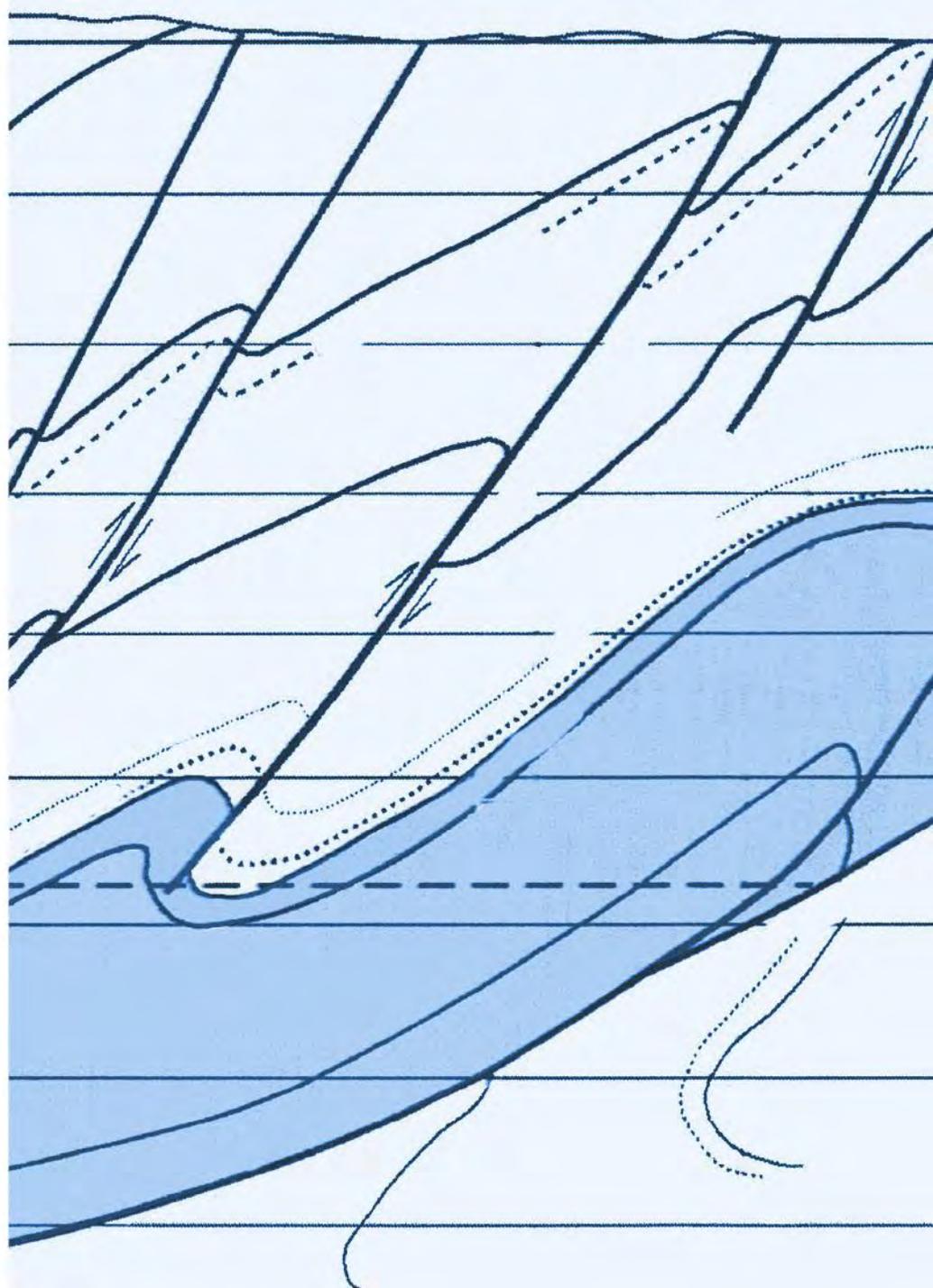
Groundwater mapping

Regulations that safeguard groundwater

Understand the specific project

- How will it be operated
 - Ensure understanding of geology
 - Place constraints if necessary
-

Monitoring



Air

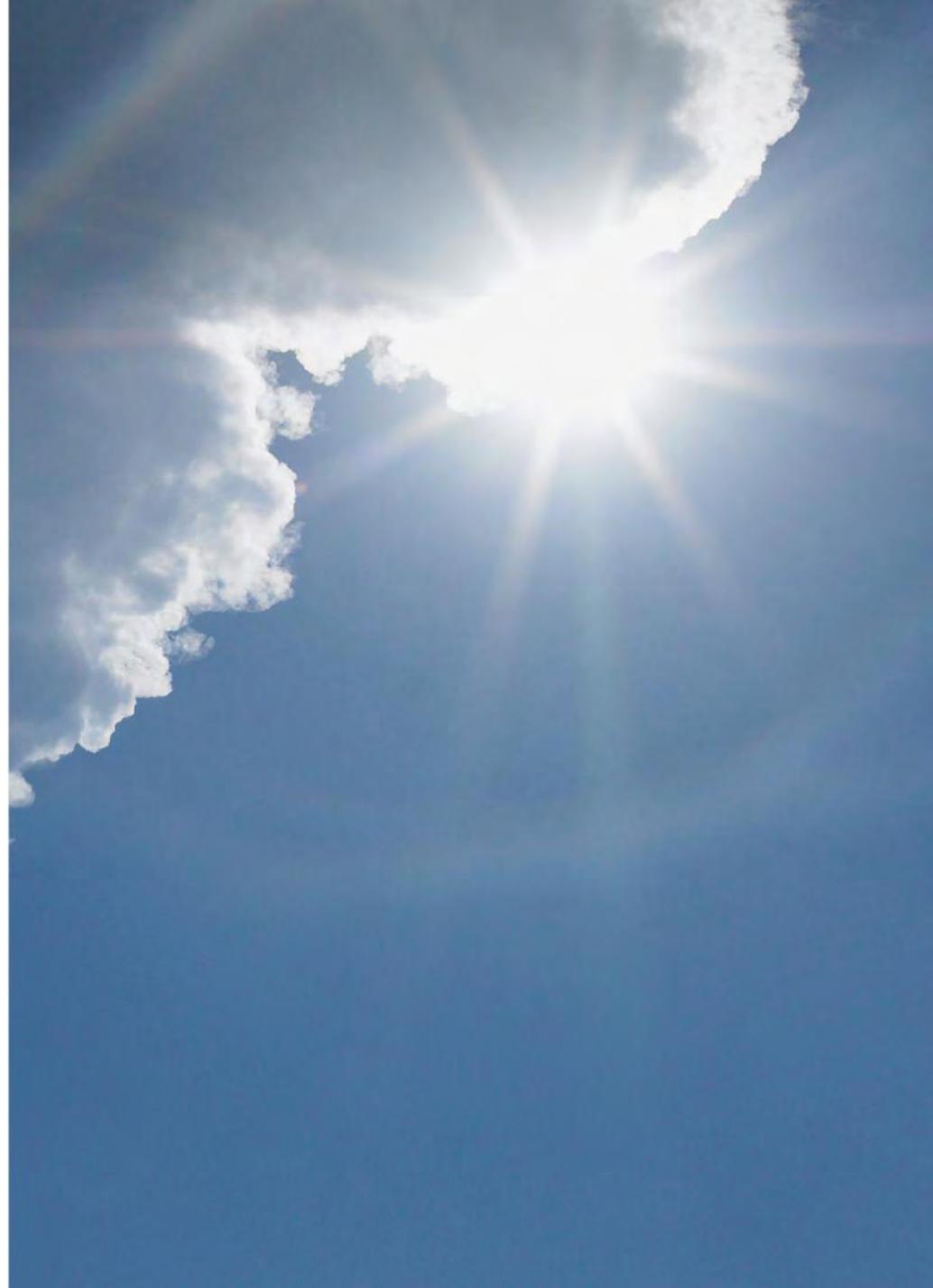
**Alberta is protecting clean air,
not reversing contamination**

**Environmental Protection and
Enhancement Act specifies
ambient air quality guidelines**

**Most heavily monitored air
shed in the world**

- Network of continuous monitoring stations operated 24/7
 - Collaboration of communities, ENGOs, industry, government and Aboriginal stakeholders
 - Fully accessible and real time
-

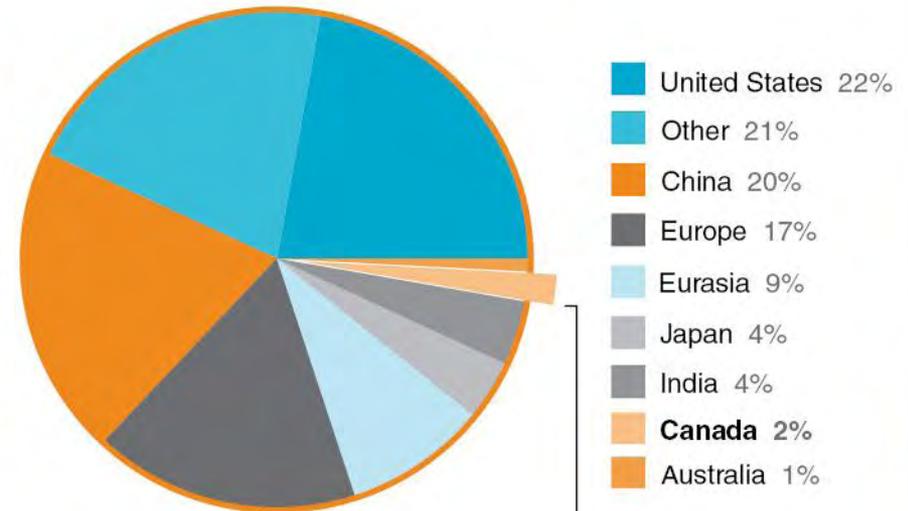
**Air quality rated good (highest
rating) 98% of the time**



Greenhouse Gas Context

Canada is responsible for 2% of the world's GHG emissions

- Oil sands is responsible for 0.1% of global emissions



Alberta's oil sands account for less than 1/10 of 1% of GHG emissions





Action on Greenhouse Gases

**Alberta is first jurisdiction in
North America to regulate
large industrial GHG
emissions**

**Legislative framework for
Carbon Capture and Storage**

**\$2 billion in public funds for
large-scale CCS projects**

**Canada's Federal Government
working on solutions**

Progressive Reclamation

Alberta is looking at all aspects of reclamation

- Required by law in Alberta
 - Financial security program
-

Life expectancy of a mine can be 40+ years

- Must have progressive reclamation
-

Reclamation certification requires that the land be deemed as productive as before mined.

- Liability transfers back to the province





Photo credit: Suncor Energy Inc.



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Reclamation

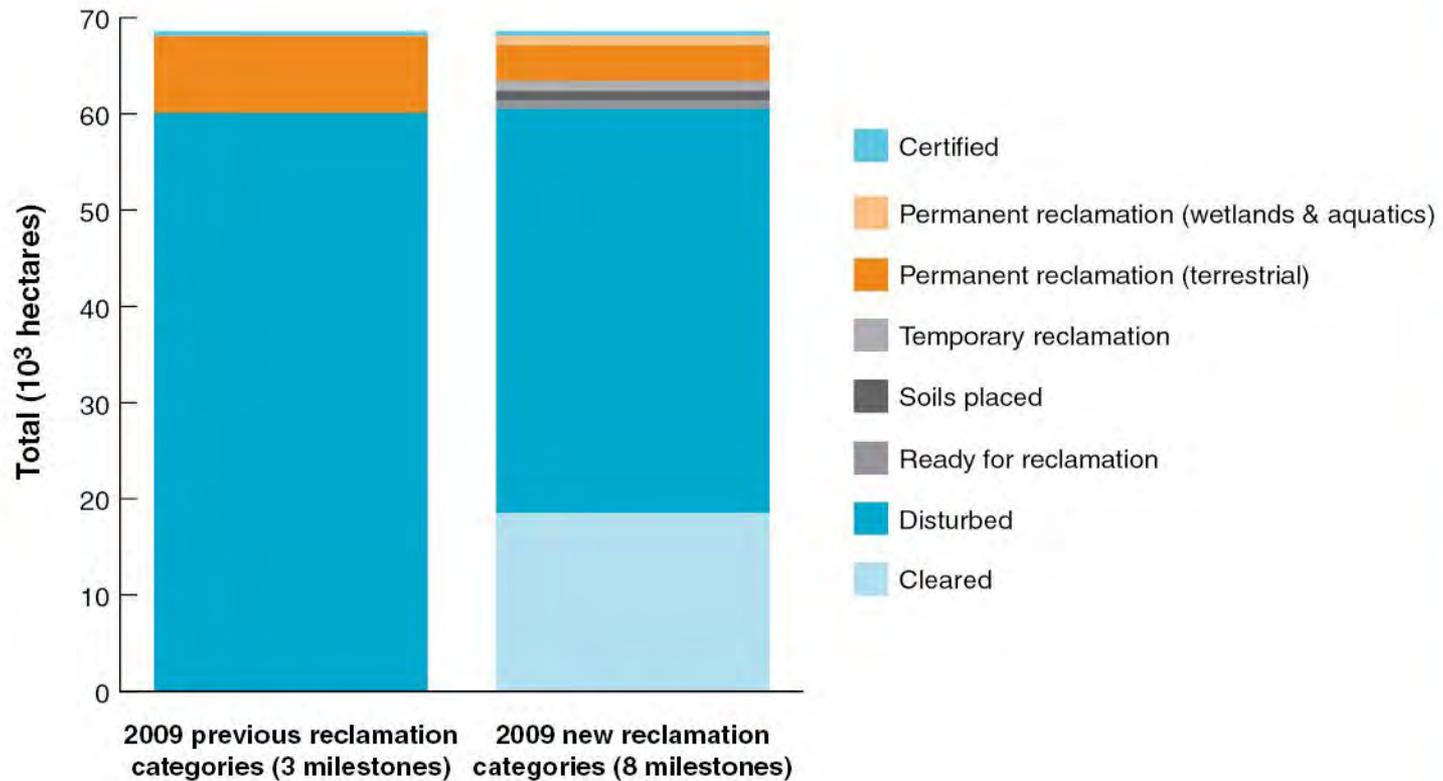
About 26 square miles of disturbed land is reclaimed or under active reclamation

More than 7.5 million tree seedlings planted in reclamation efforts

Almost half of Alberta's coal mines have been reclaimed – the remainder are active



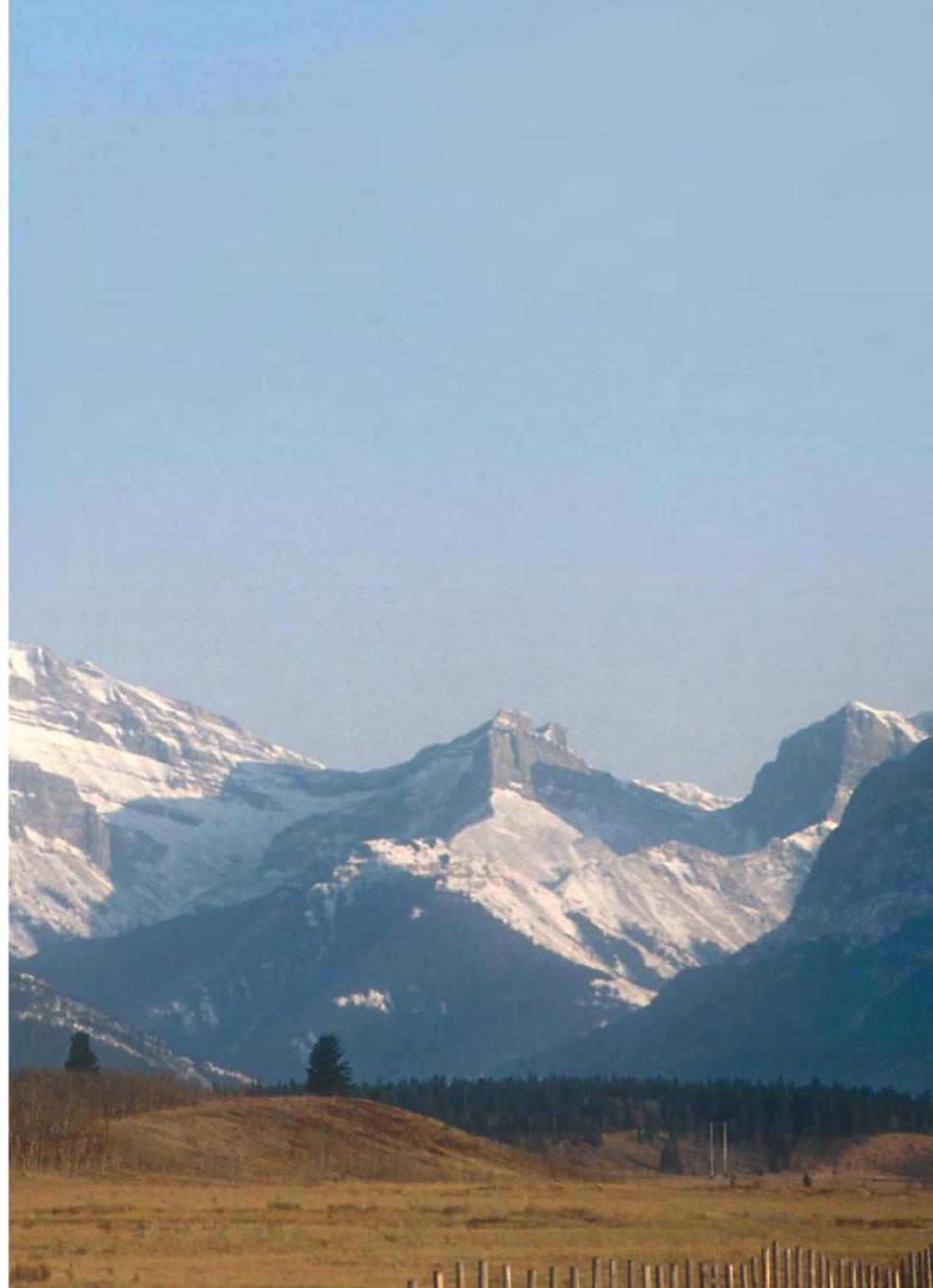
Status of All Disturbed Land in Oil Sands Mining

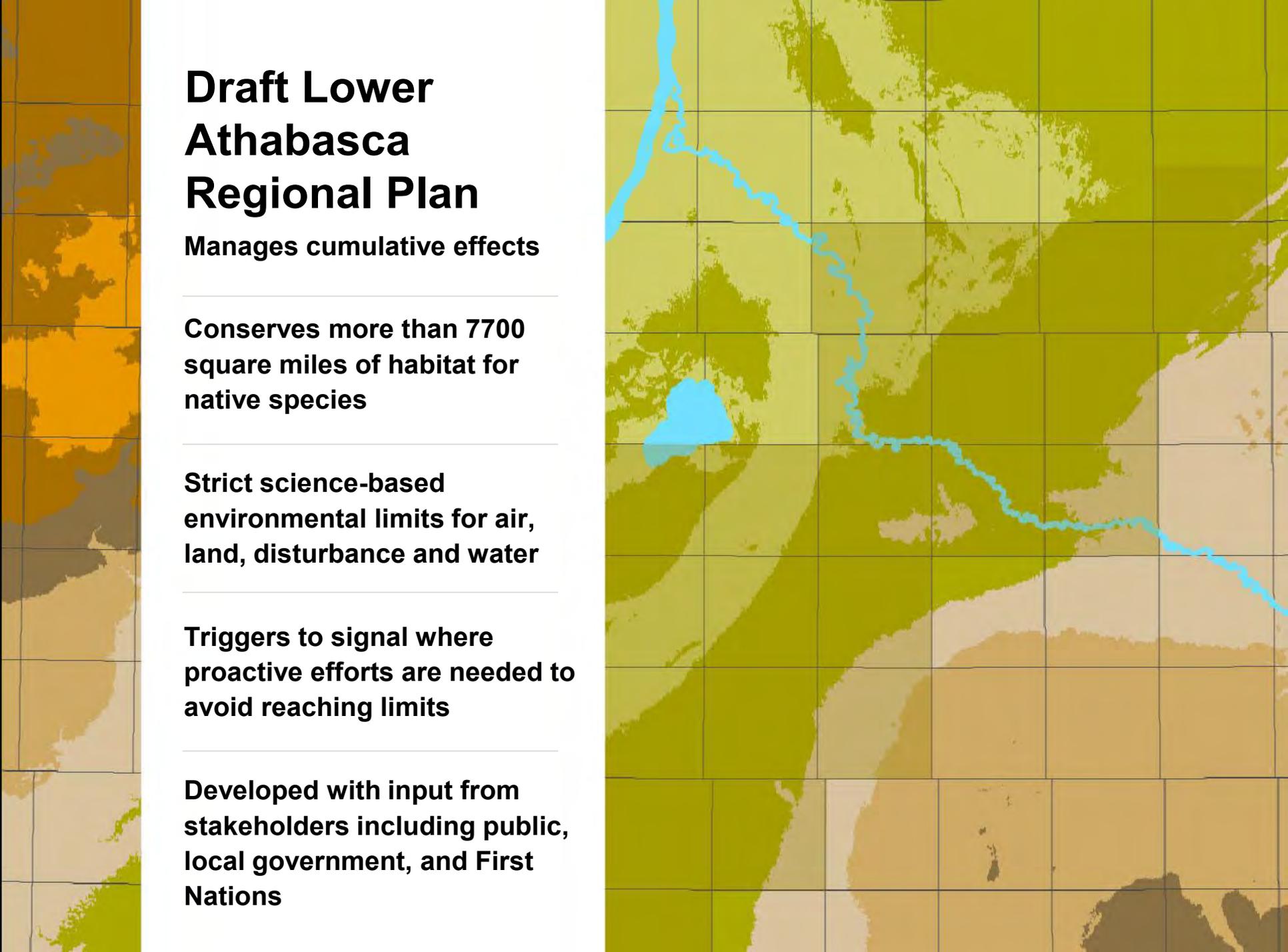


Cumulative Impacts

Science-based decisions

- Predict impacts and cumulative effects of a proposed activity
- Follow-up monitoring to validate predictions
- Actions could include:
 - Apply conditions to project approval
 - Create new ecological areas to compensate
 - Mandate additional technology during project operation





Draft Lower Athabasca Regional Plan

Manages cumulative effects

**Conserves more than 7700
square miles of habitat for
native species**

**Strict science-based
environmental limits for air,
land, disturbance and water**

**Triggers to signal where
proactive efforts are needed to
avoid reaching limits**

**Developed with input from
stakeholders including public,
local government, and First
Nations**

Regulatory Strength

Alberta's regulatory regime is integrated and comprehensive

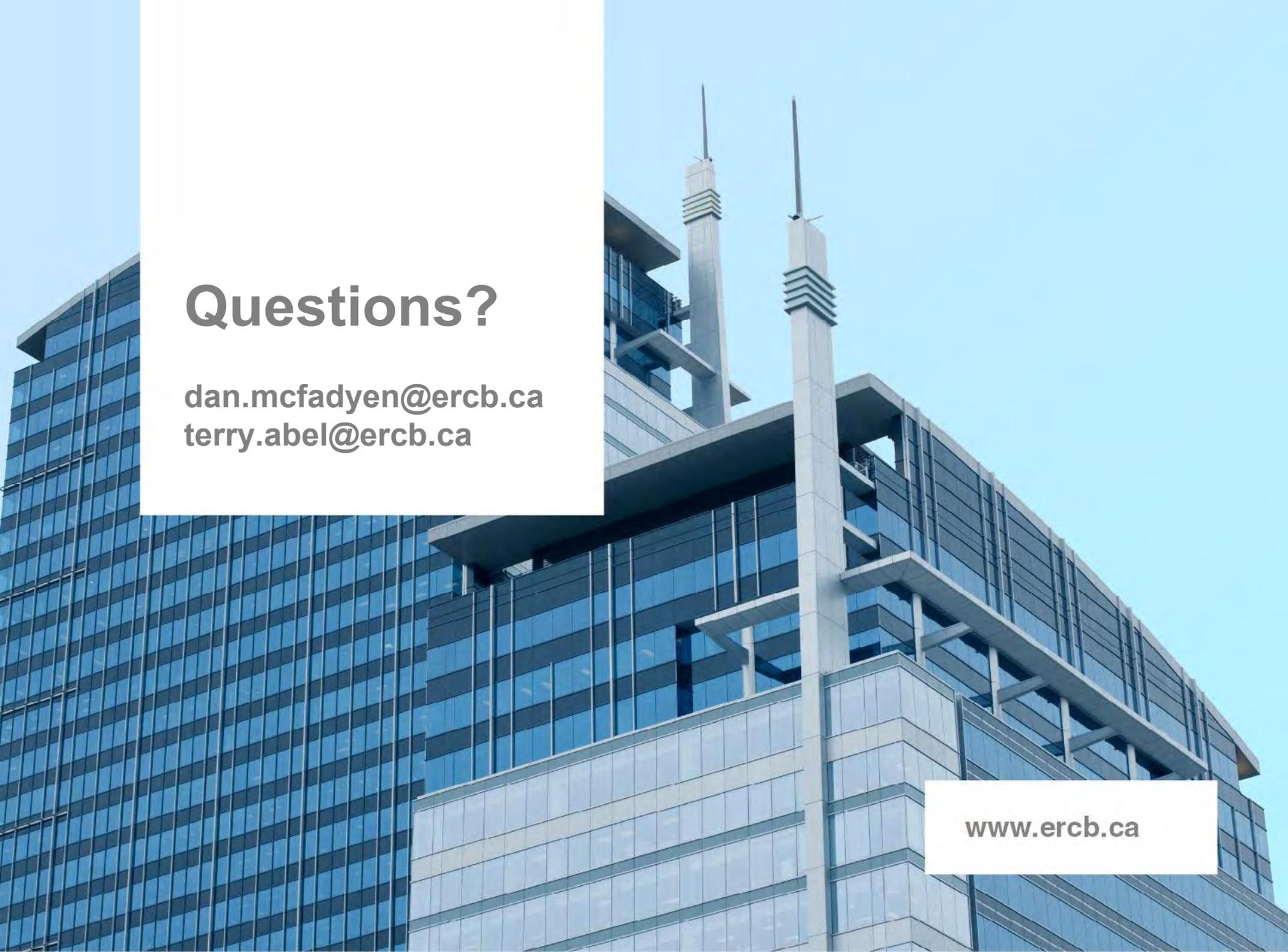
The framework is flexible, responsive and tackles issues

Strong results based on expert application of science

Commitment to improvement

Albertans care about the legacy for future generations





Questions?

dan.mcfadyen@ercb.ca
terry.abel@ercb.ca

www.ercb.ca