Integrated planning for multiple values (& multiple scales) across industrial sectors

DUC BMP workshop
January 21, 2016

ALBERTA PACIFIC FOREST INDUSTRIES INC

fRI Healthy Landscapes

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Alberta-Pacific Forest Industries

outline

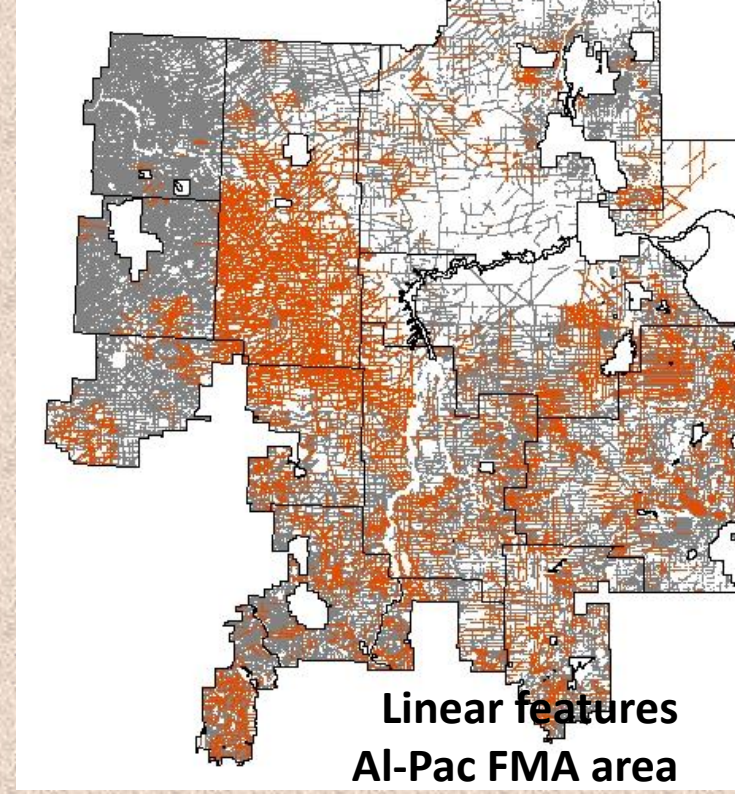
- current landscape & policy context
- ILM framework
- example of ILM at multiple scales
- highlights of recent/on-going collaborations in development & testing of integrated planning approaches
- stand level BMPs

disclaimer

- sorry for the lack of wetland context
- understood that ILM means integration of the landscape – terrestrial, aquatic systems
- presentation about developing ways (BMPs) to integrate planning systems, for social, ecological and economic values across both terrestrial & aquatic ecosystems

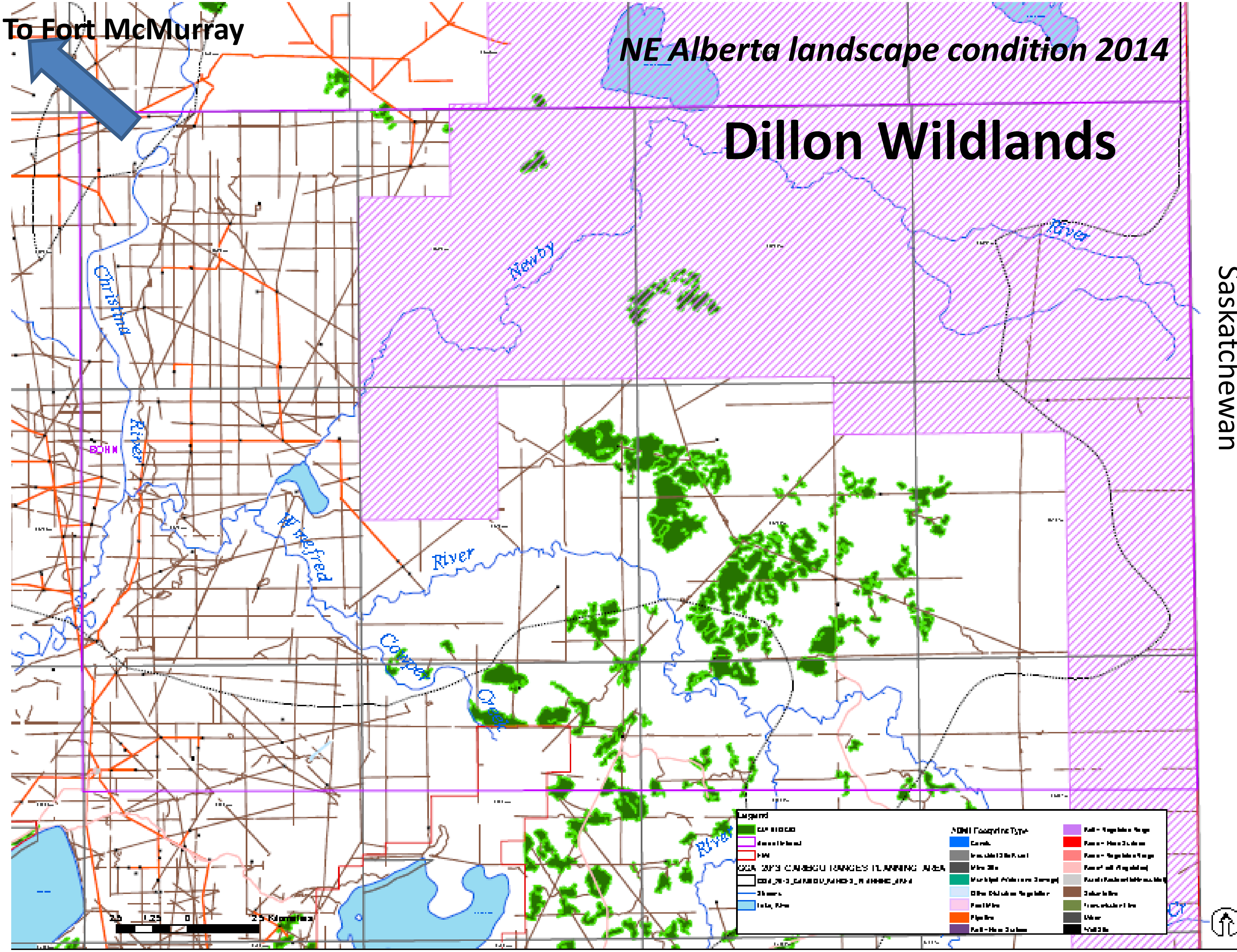
Solution-based outcomes

- initiatives designed to **minimize the industrial footprint** in NE AB
- minimize the **creation** of new footprint and **decrease** the extent and duration of **the legacy footprint.**



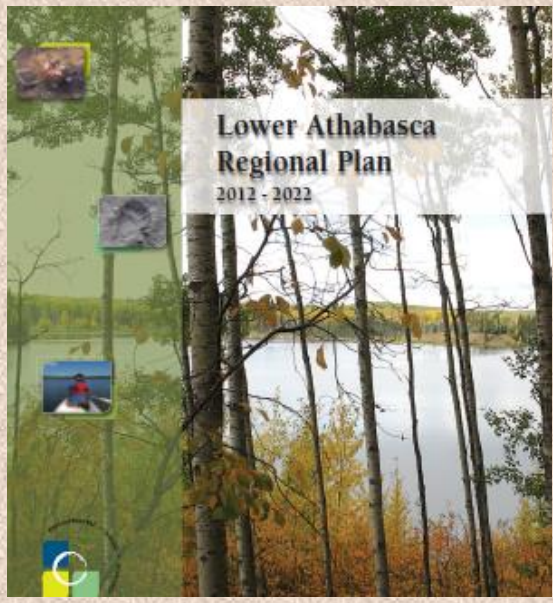
- ecosystem-based approach informed by science & sustainable forest management principles includes terrestrial and wetland ecosystems
- collaborative initiatives developed to achieve a suite of environmental, social and economic goals and mitigate cumulative effects

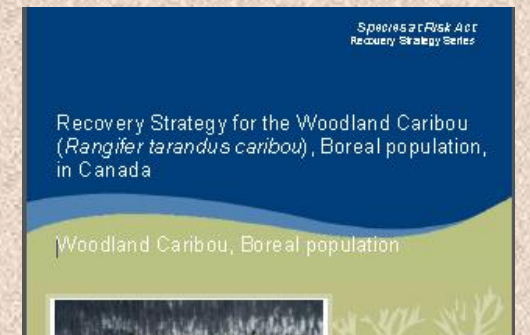
NE Alberta landscape condition 2014



Solution-based outcomes

- implementation of Integrated Land management strategies and impending LUF - LARP directives & other policy; demonstrate leadership
- contribute to stewardship of a responsibly managed forest , validated through third party process - `green' resource development
- alignment with key performance indicators – cost, quality, production, safety, environment & corporate sustainability reporting





Implementing Integrated Land Management

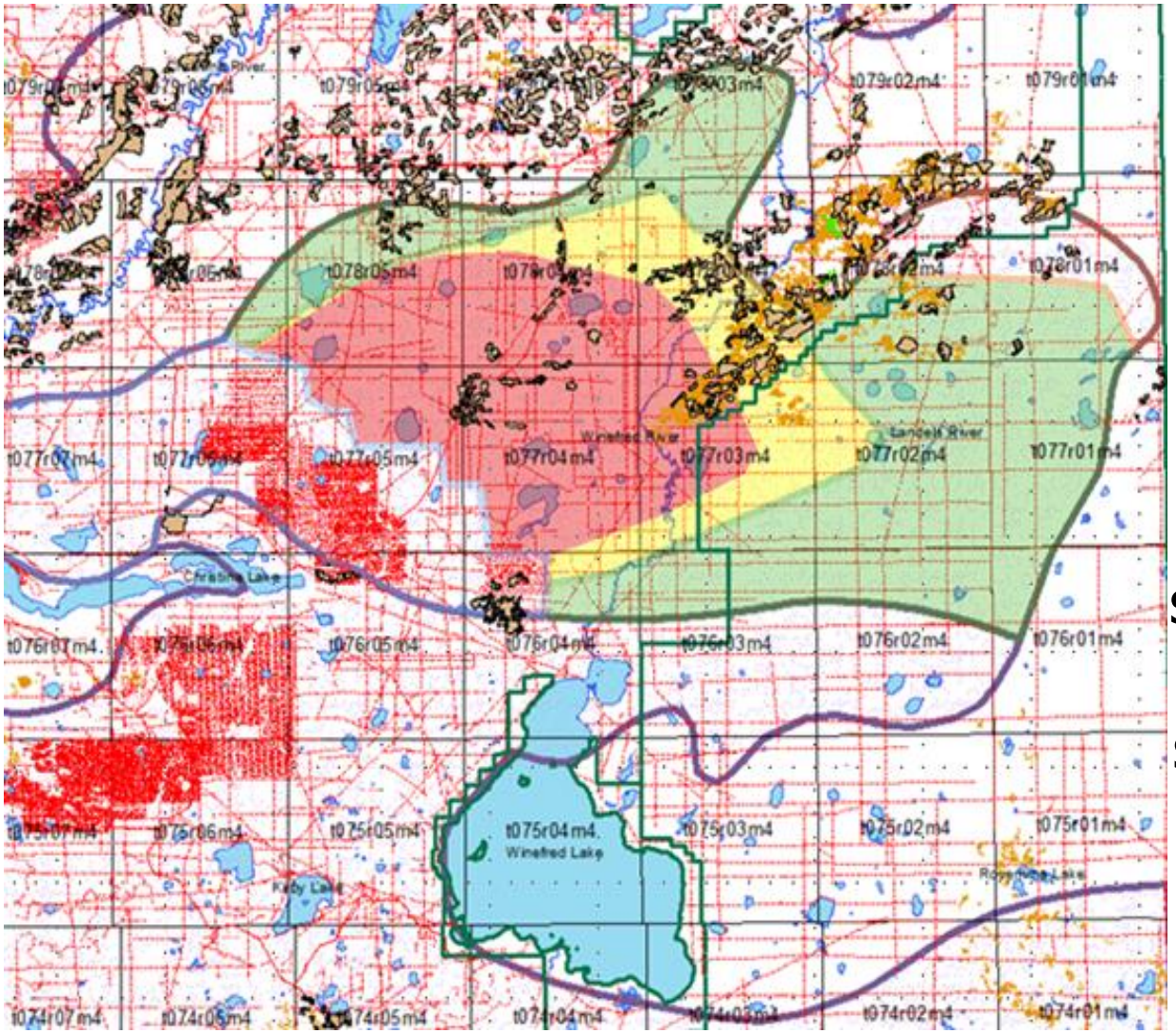
enabling legislation via LARP & Biodiversity management framework
- regional outcomes
-proactive management strategies & offset mechanisms
- caribou action planning & wetland policy implementation

Al-Pac forest management planning process underway – plan due in 2018

COSIA providing leadership & coordination, funding for research & knowledge synthesis/transfer, incentives for innovation

social license & perceptions (local, world markets)
sustainability certification & environmental stewardship

However…..



challenges

disturbance – shape, permanence, intensity

linear features

short planning horizons

small scales (relatively)

capacity issues & expertise

trust

Opportunities

- similar objectives – ecological, social, economic
- similar regulatory frameworks (conceptually) including Species at Risk Act and Caribou Recovery Strategy; Landuse Framework and Lower Athabasca Regional Plan
- corporate cultures – sustainability reports, perception, competing on world markets
- social license and market access concerns – within Canada, beyond
- cultural requirements – Aboriginal engagement and treaty rights

How to create landscapes of opportunity … manage the forest matrix, embrace variability, collaborate and integrate planning…manage cumulative effects

ILM = minimization of industrial footprint (new & existing)

enhanced biodiversity conservation

healthy resilient functioning forest ecosystems

future habitat availability for all species

continuous supply of ecosystem goods & services

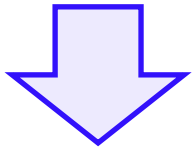
manage risk & reduce uncertainty (ecological, social & economic)

align with LARP & other pending policy

minimize cumulative effects

implement ecosystem based management informed by natural disturbances

habitat variability
connectivity



forest retention patches & leave areas
reduced fragmentation

zonation strategies & beneficial management practices

integrated planning

- site level design
- landscape design

disturbance through industrial development

- forest harvest
- site clearing

reclamation & restoration

- tree planting
- access management

however NE Alberta context different

- multiple overlapping tenures
- cumulative effects of resource development
- social license and world market access

Can the natural pattern approach be applied to current land management challenges in NE Alberta ?

Natural disturbance patterns & forestry

The NDP approach has been widely implemented by Al-Pac and others in forest industry in Alberta

- well received by stakeholders, Aboriginal communities, ENGOs
- economically feasible
- hypothesis generally seems to work

» adapt for complex adaptive systems & multiple outcomes

- applications within forest certification systems – market access, social license, stewardship

integrated planning

- across ecosystems
- at multiple scales
- across sectors
- in space and time
- multiple values
- embrace variability
- consider landscape connectivity & fragmentation effects

Fostering collaborative integrated planning

- address planning horizon disconnects as best we can
- try to pick an area with willing collaborators to work with
- in terms of ILM, look at development needs for infrastructure, and beyond to collaborative landscape design principles and biodiversity conservation strategies
- plan both disturbance and restoration activities in time and space (Where's and WYNs)

Fostering collaborative integrated planning

- integrate consideration of fine filter needs, specifically caribou, through consideration of habitat contribution within conservation areas, and need for no-go areas on working landscape for specified time periods, to build large intact, older habitat patches

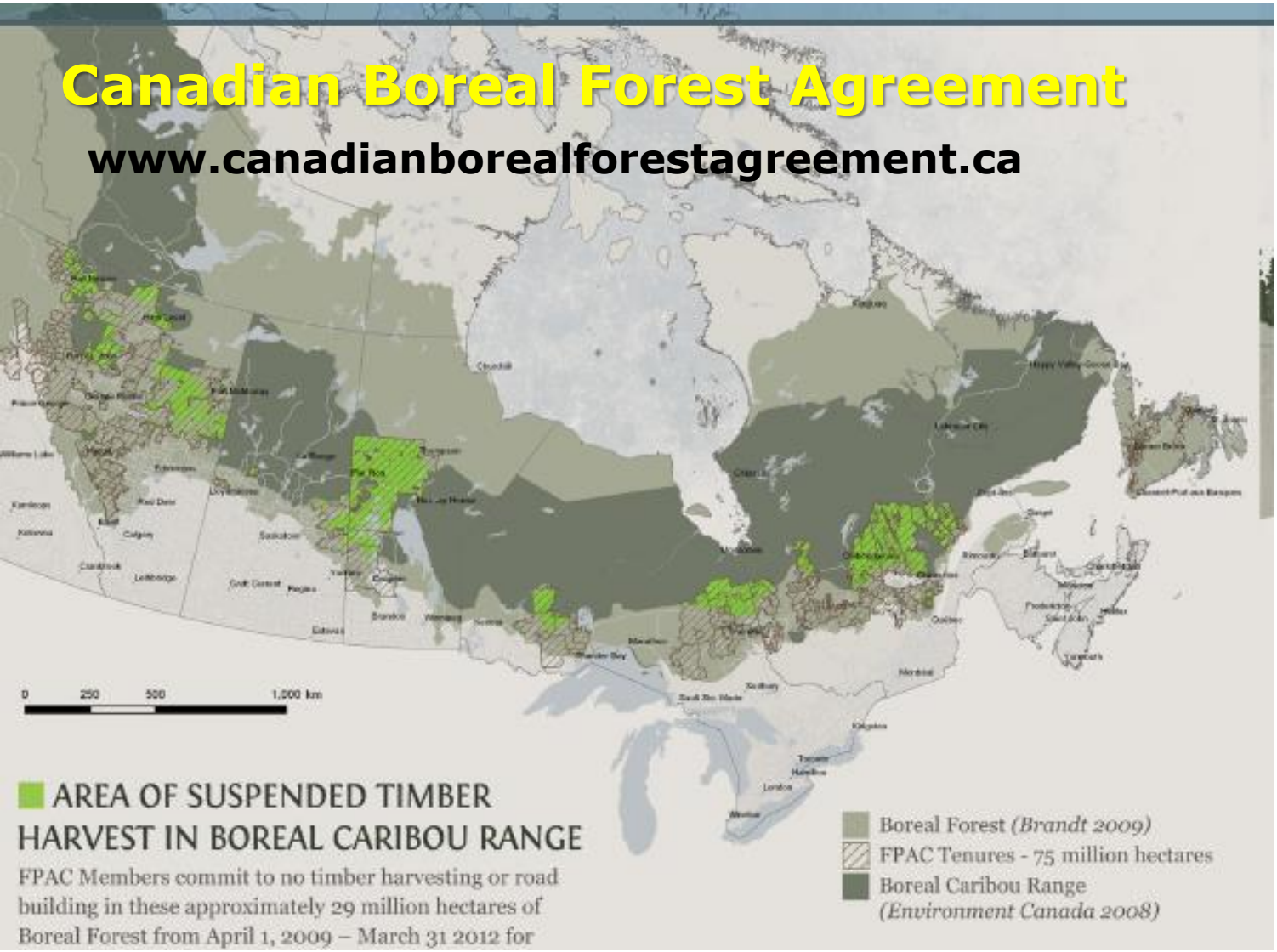
- plan for multiple values using combination of zonation strategies and beneficial management practices

- illustrate with several examples of collaborative undertakings to address ILM


Collaborative
Planning
&
ILM
Examples

Canadian Boreal Forest Agreement

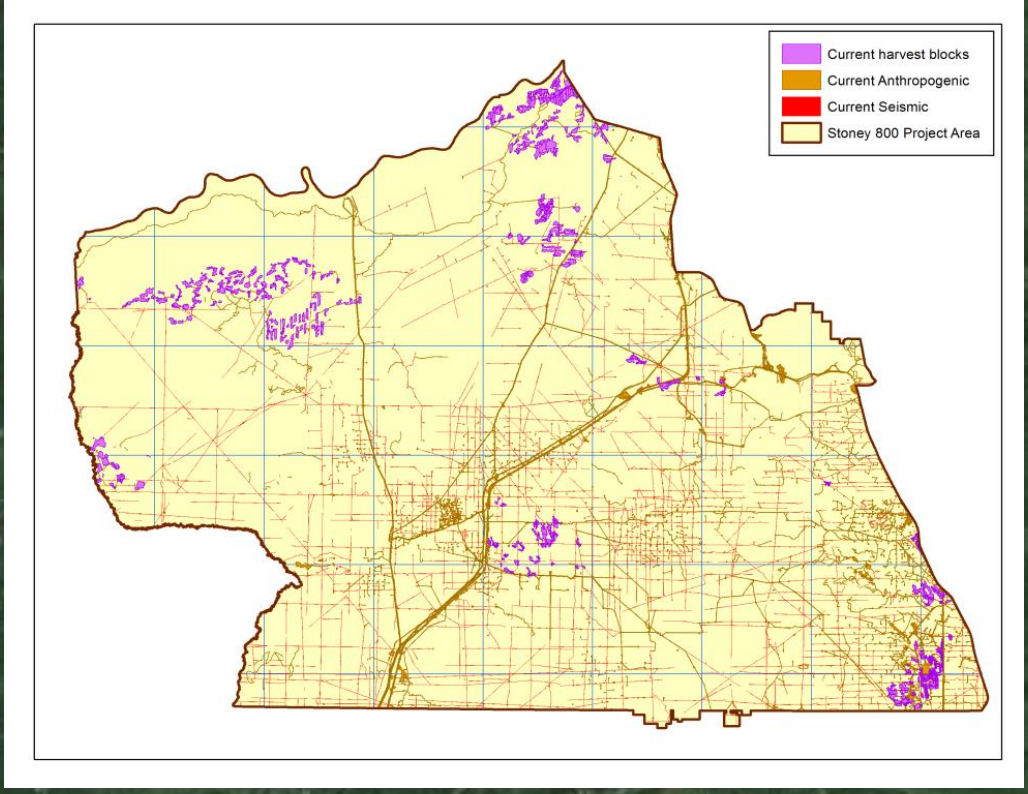
www.canadianborealforestagreement.ca



resolute Forest Products · AV Group · CANFOR · Canfor Pulp LTD · Cariboo · Cascades · CPAWS · CONIFEX · David Suzuki Foundation · DMI · FORESTETHICS · HOWE SOUND PULP & PAPER CORPORATION · IVEY foundation · Kruger · LP BUILDING PRODUCTS · MERCER · The Nature Conservancy · NewPage · PEW · MILLAR WESTERN · tembec · TOLKO · West Fraser · Weyerhaeuser

CEMA Stony 800 Restoration Project

Develop and test a new planning process based on ecosystem-based principles for creating healthier landscapes in areas modified by industrial activities.



Using a Healthy Landscape approach to restore a modified landscape in northeastern Alberta (2015)

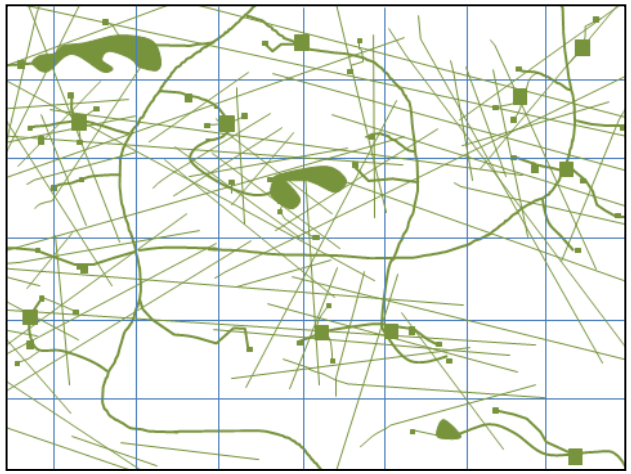
Andison, Gooding, Christian, Vinge, Moore, Donnelly & Rymer

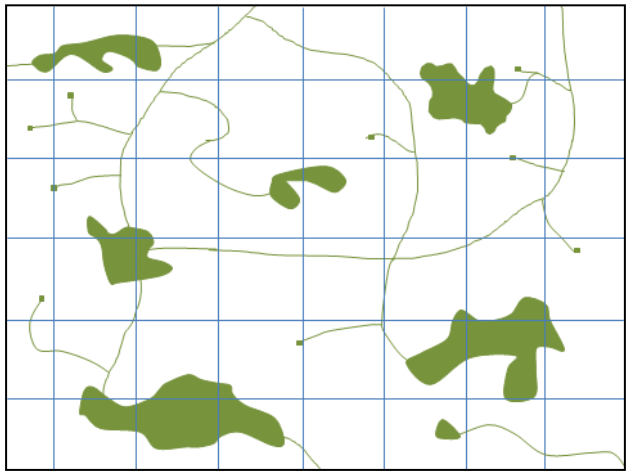
This study was just a quick, simple, proof of concept.

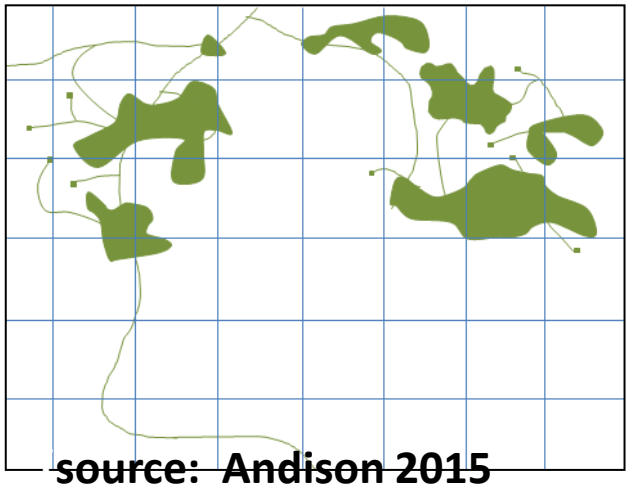
(source: Andison 2015)

This is not about if or how much to disturb,

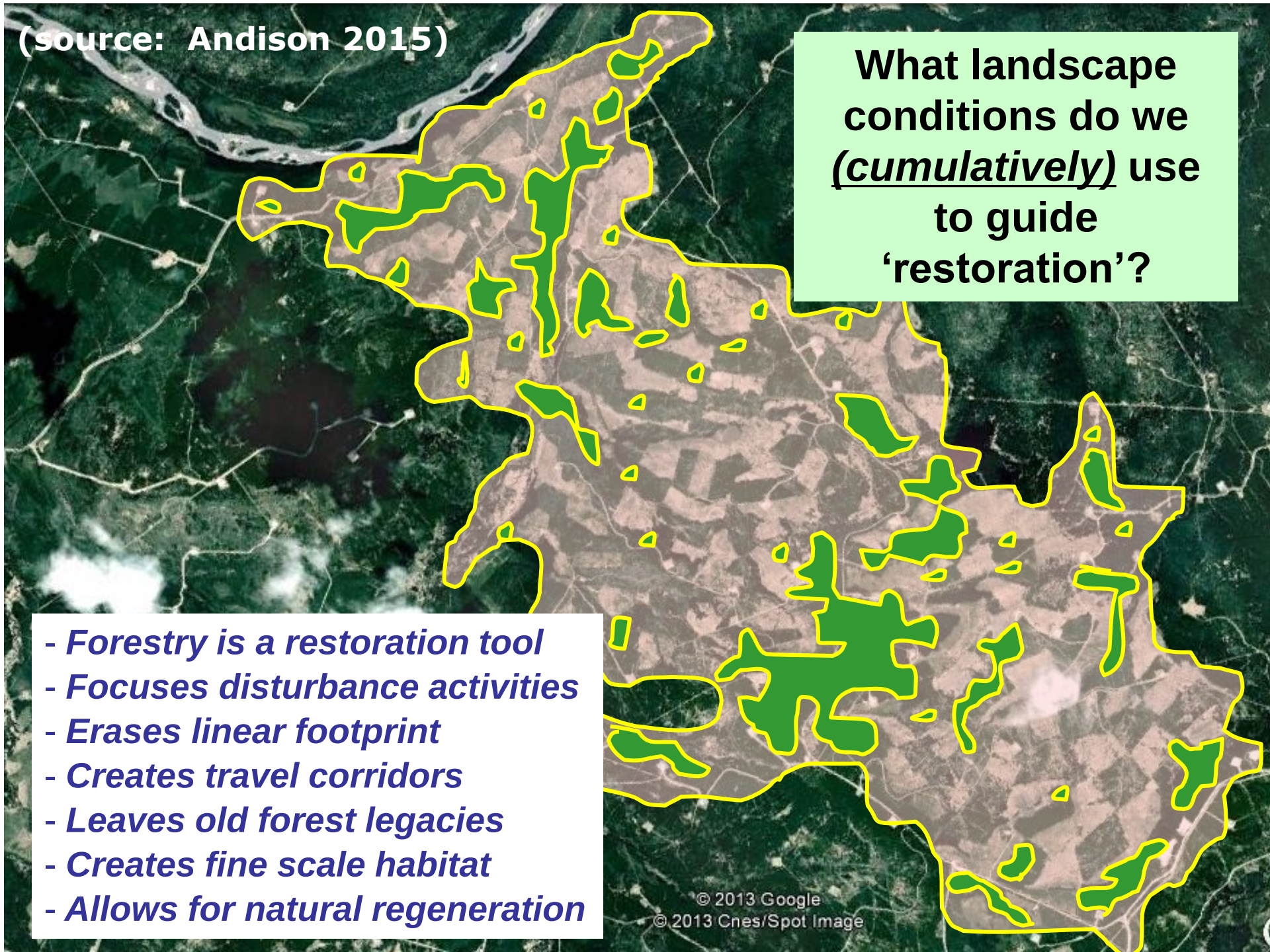
…just where, when, and how.

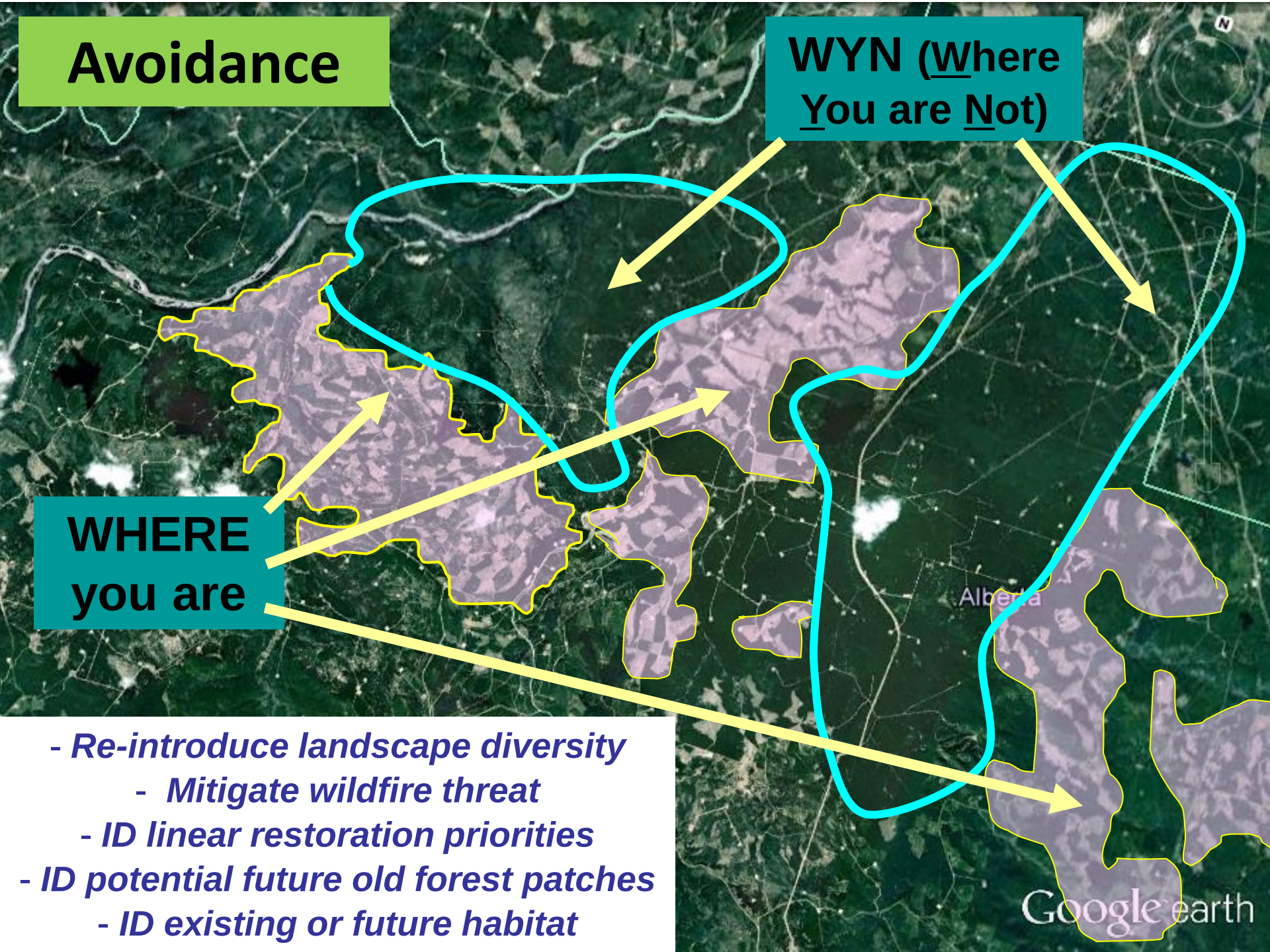






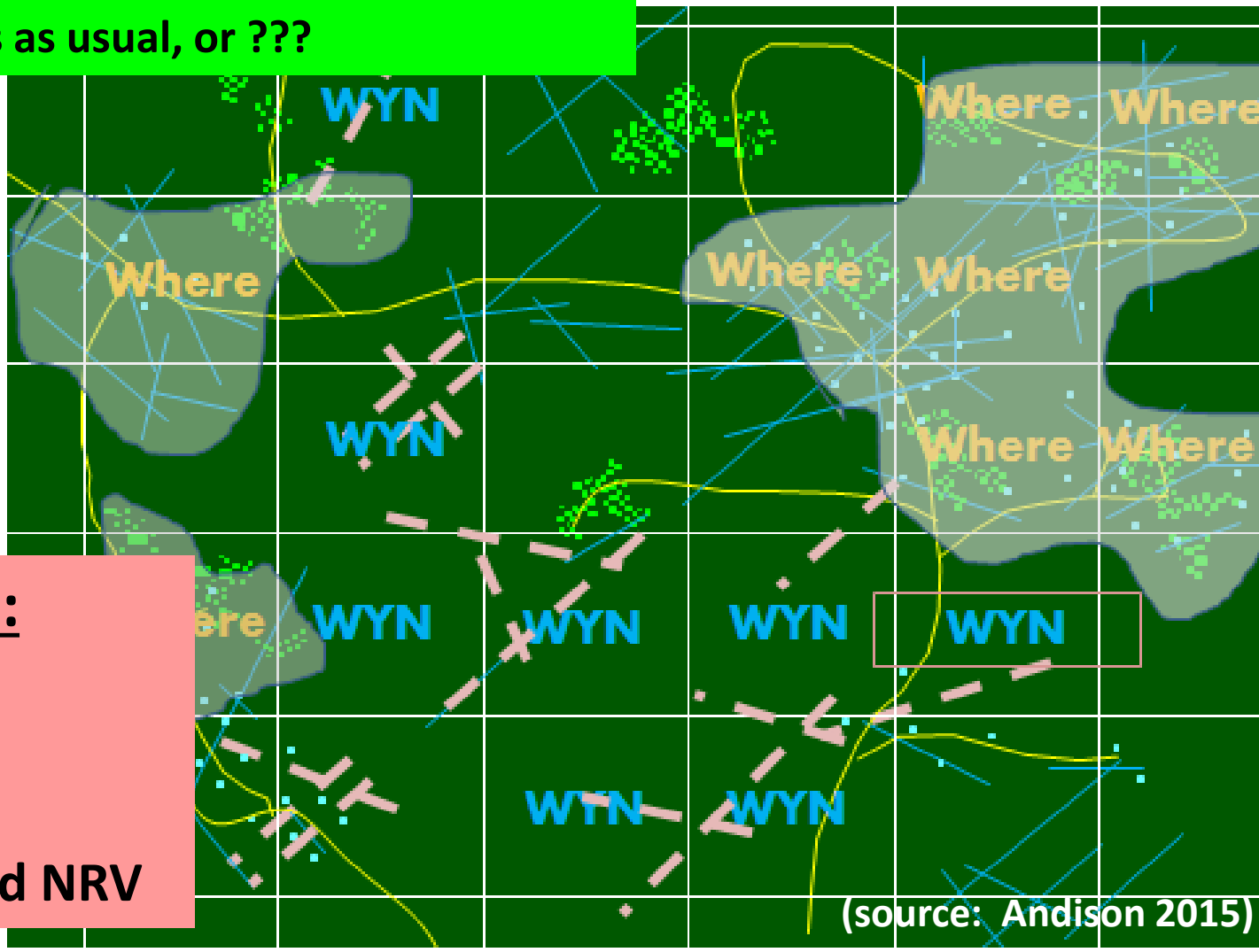
source: Andison 2015


(source: Andison 2015)
What landscape conditions do we (cumulatively) use to guide 'restoration'?
- Forestry is a restoration tool
- Focuses disturbance activities
- Erases linear footprint
- Creates travel corridors
- Leaves old forest legacies
- Creates fine scale habitat
- Allows for natural regeneration
© 2013 Google
© 2013 Cnes/Spot Image


Avoidance
WYN (Where You are Not)
WHERE you are
- Re-introduce landscape diversity
- Mitigate wildfire threat
- ID linear restoration priorities
- ID potential future old forest patches
- ID existing or future habitat
Google earth

The WHERE-WYN Grid

WHERE = concentrated disturbance activities
WYN = no disturbance + restoration
Other = business as usual, or ???

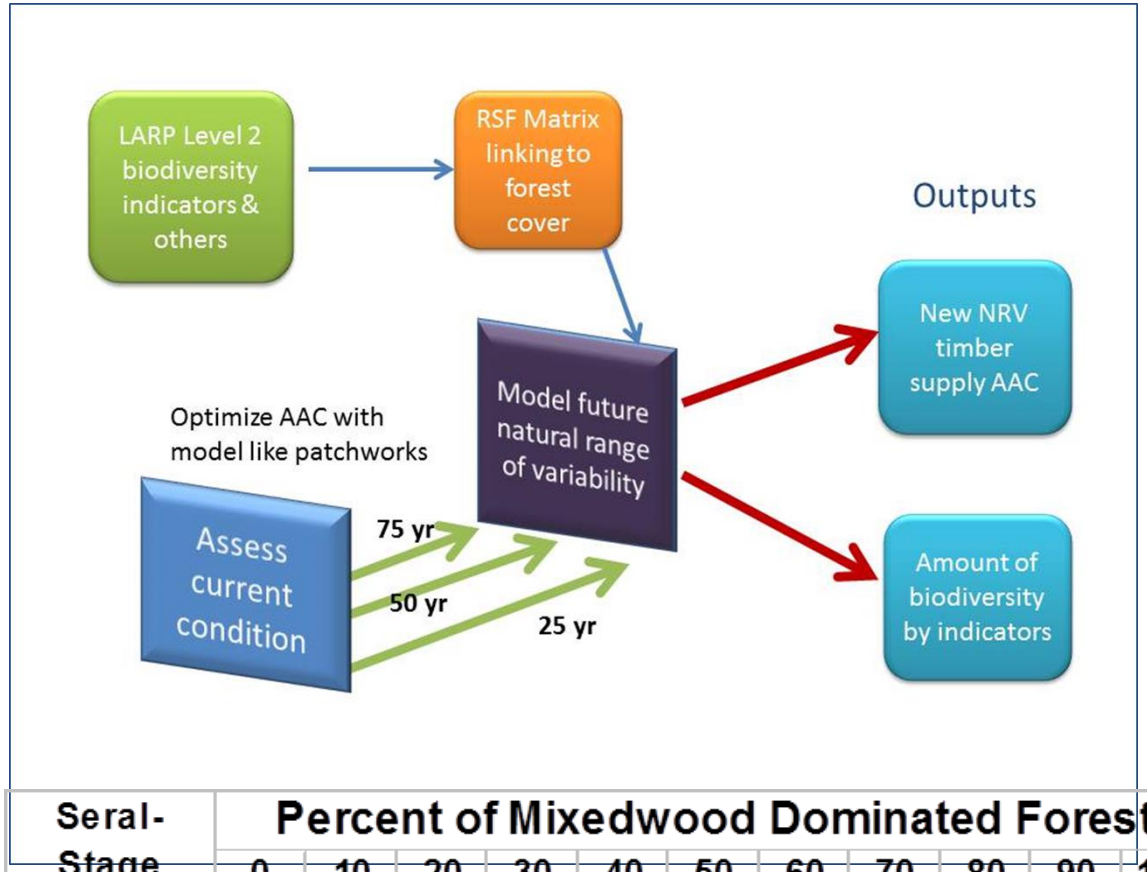


Grids are:

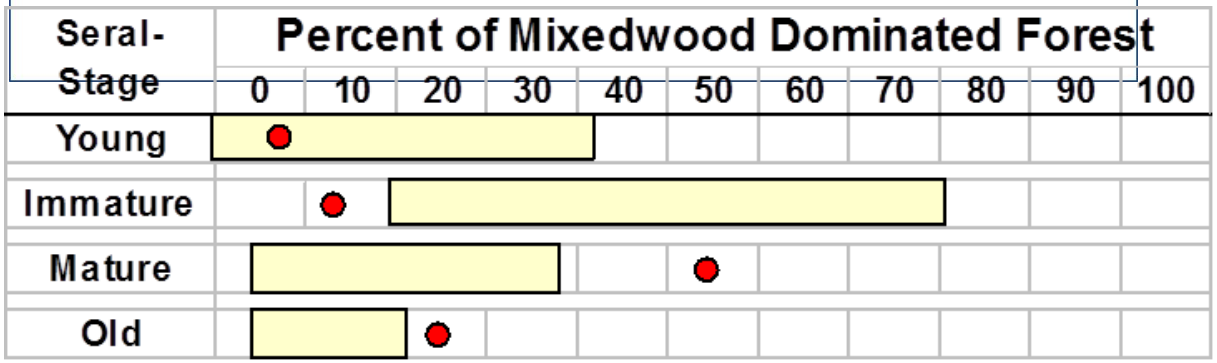
- Easy
- Objective
- Multi-scalar
- Have associated NRV

(source: Andison 2015)

Biodiversity Using Ranges of Natural Disturbance project (BURND)



- testing utility of using NRV to set targets for indicators in LARP Biodiversity Management Framework (BMF)
- integrate RSF modeling for suite of indicators
- look at timber supply & landscape condition through time
- report in development



Collaborators
GoA, LUF
Al-Pac
Forestry Corp


REGIONAL
INDUSTRY
CARIBOU
COLLABORATION
more info available
on COSIA Land EPA
website

REGIONAL INDUSTRY CARIBOU COLLABORATION

Devon Energy
Cenovus Energy
Canadian Natural Resources Limited
BP
MEG Energy
Imperial Oil
Alberta-Pacific Forest Industries
TransCanada Pipelines
Others can join

OTHER COLLABORATORS

Government of Alberta
Government of Saskatchewan
University of Alberta
Alberta Biodiversity Monitoring Institute
Alberta Innovates Technology Futures
Third Party Consultants
Others can join, pending approval from RICC

RICC PROJECTS
- EXAMPLES -

- **Regional footprint inventory (LiDAR)**
- **Footprint characterization**
- **Reclamation and restoration prioritization (on lease, off lease, protected areas = value to caribou)**
- **Linear feature treatments (functional restoration)**
- **Wildlife capture, collaring and monitoring (ecological relationships, effectiveness of treatments, etc.)**

Disturbance & Development

- disturbance harvest (e.g. Stony project)
- BMPs to mitigate/ avoid during development

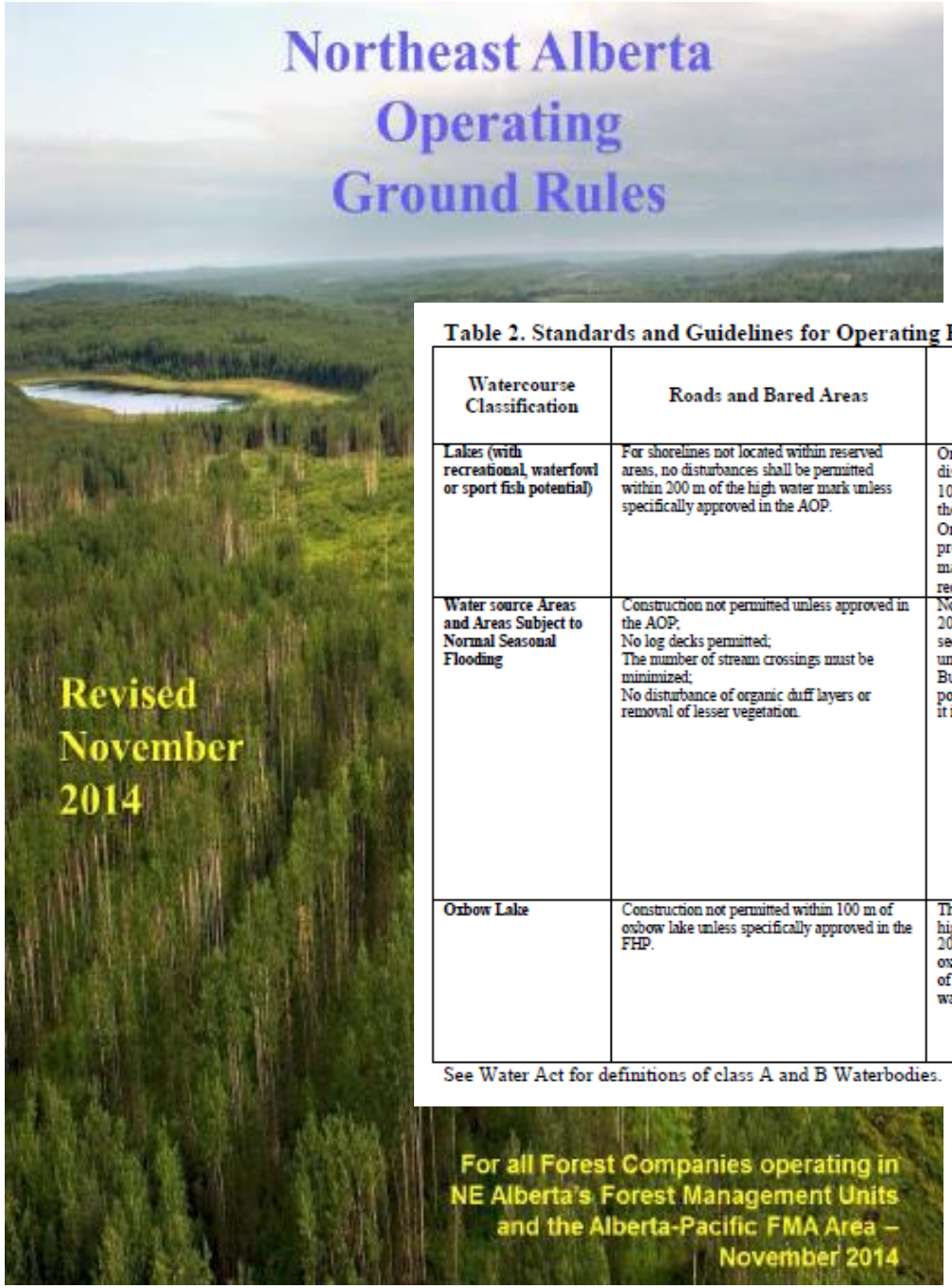


Table 2. Standards and Guidelines for Operating Beside Watercourses/Waterbodies

Watercourse Classification	Roads and Bared Areas	Watercourse Protection Areas	Operating Conditions Within Riparian Areas and Water Source Areas Where Operations are Approved	
			Tree Felling	Equipment Operation
Lakes (with recreational, waterfowl or sport fish potential)	For shorelines not located within reserved areas, no disturbances shall be permitted within 200 m of the high water mark unless specifically approved in the AOP.	On lakes exceeding 4 ha in area, no disturbance or removal of timber within 100 m of the high-water mark. Alberta in the FHP may require additional protection. On lakes less than 4 ha, removal of timber prohibited within 30 m of the high-water mark and any removal within 100 m requires Alberta's approval.	Trees shall be felled so they do not enter the waterbody, unless otherwise approved; Should slash or debris enter the watercourse, immediate removal is required without the machine entering the watercourse.	Consideration must be given to aesthetics when harvesting adjacent to lakes with recreational potential.
Water source Areas and Areas Subject to Normal Seasonal Flooding	Construction not permitted unless approved in the AOP; No log decks permitted; The number of stream crossings must be minimized; No disturbance of organic duff layers or removal of lesser vegetation.	No disturbance or removal of timber within 20 m on all water source areas where sedimentation is a concern, unless specifically approved in the AOP; Buffer width may be altered according to its potential to produce surface water, provided it is approved in the AOP.	Heavy machinery not permitted with in water source areas during unfrozen soil conditions; Minimal disturbance or removal of duff or lesser vegetation; Timber may be harvested if stream sedimentation is the only resource concern, provided there is no disturbance of the organic soils and lesser vegetation when harvesting the trees; On unstable areas subject to blowdown, merchantable trees shall be carefully harvested from water source areas to minimize root disturbances of duff layers and watercourse damming.	Road construction, timber harvest, reforestation and reclamation shall be done with equipment capable of operating without causing excessive disturbance to the soil layers; Heavy equipment is not permitted during moist or wet soil conditions, but may be operated during frozen periods; No soil caps or depositing of soil permitted on roads in water source areas unless a separation layer is incorporated or the road is designed to provide adequate surface and sub-surface drainage away from the road bed; Where a separation layer is used, the soil cap shall be removed as operations are completed.
Oxbow Lake	Construction not permitted within 100 m of oxbow lake unless specifically approved in the FHP.	The buffer shall encompass the area from the high water mark of the main watercourse to 20 m beyond the high water mark of the oxbow lake. Oxbow lakes outside the buffer of the main watercourse shall be treated as watersource areas.	Heavy equipment not permitted around oxbow lakes during unfrozen conditions. Trees shall be felled so they do not enter the waterbody, unless otherwise approved; Should slash or debris enter the watercourse, immediate removal is required without the machine entering the watercourse.	Approved activities shall be done with equipment capable of operating without causing excessive disturbance.

See Water Act for definitions of class A and B Waterbodies.

For all Forest Companies operating in NE Alberta's Forest Management Units and the Alberta-Pacific FMA Area – November 2014

Minimize new footprint created through modified operational practices

How to Achieve Low Disturbance?

- Ice-in the pad
- Use woody debris and snow to fill in hollows
- Artificial snow making
- Self-leveling rigs
- application of DU enhanced wetland classification risk classes to BMPs for road freeze-down

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Reclamation and restoration

E sector Reclaim Program 2004 to 2015

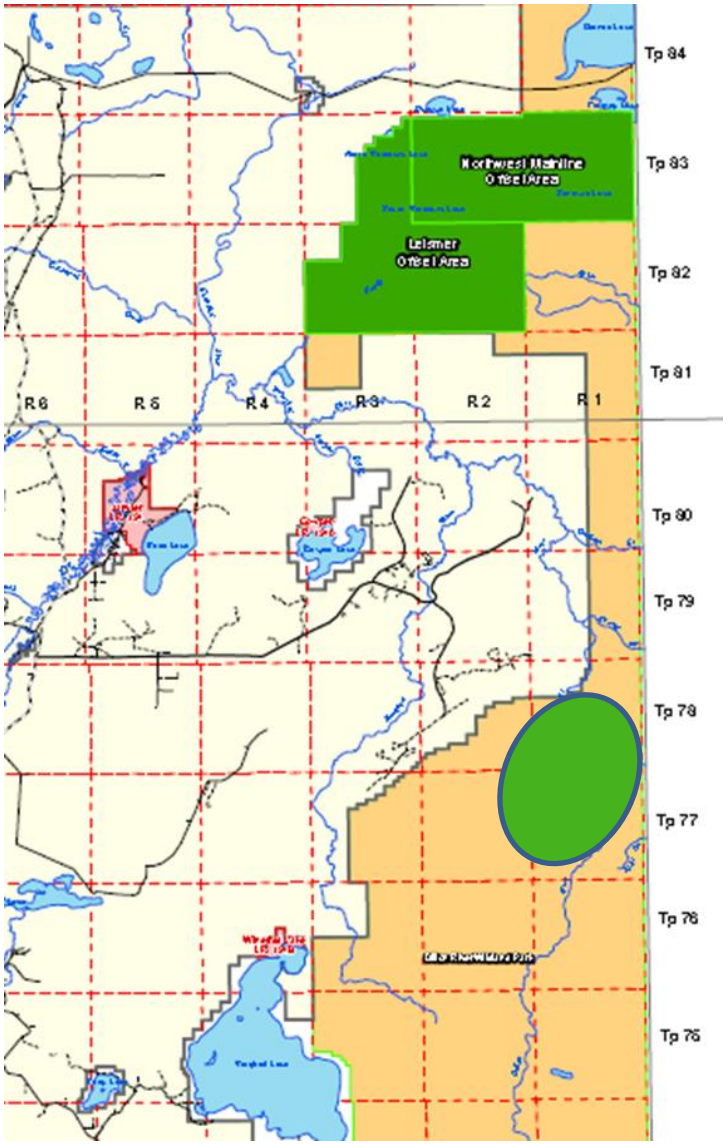
3,500,000+ trees planted on energy sector footprint

Reforestation Program : 1994-2012

39 + million seedlings
30,680 hectares

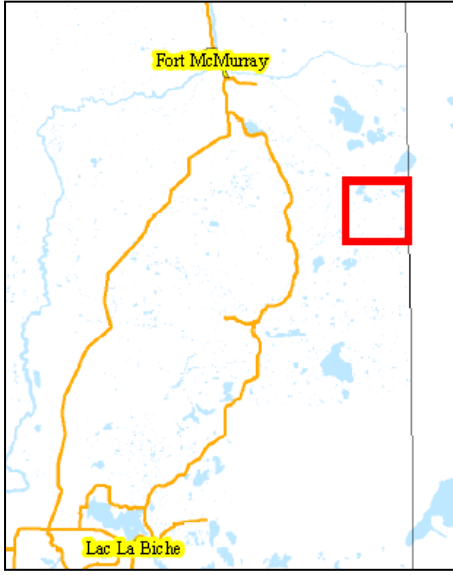
roving rather than increasing footprint

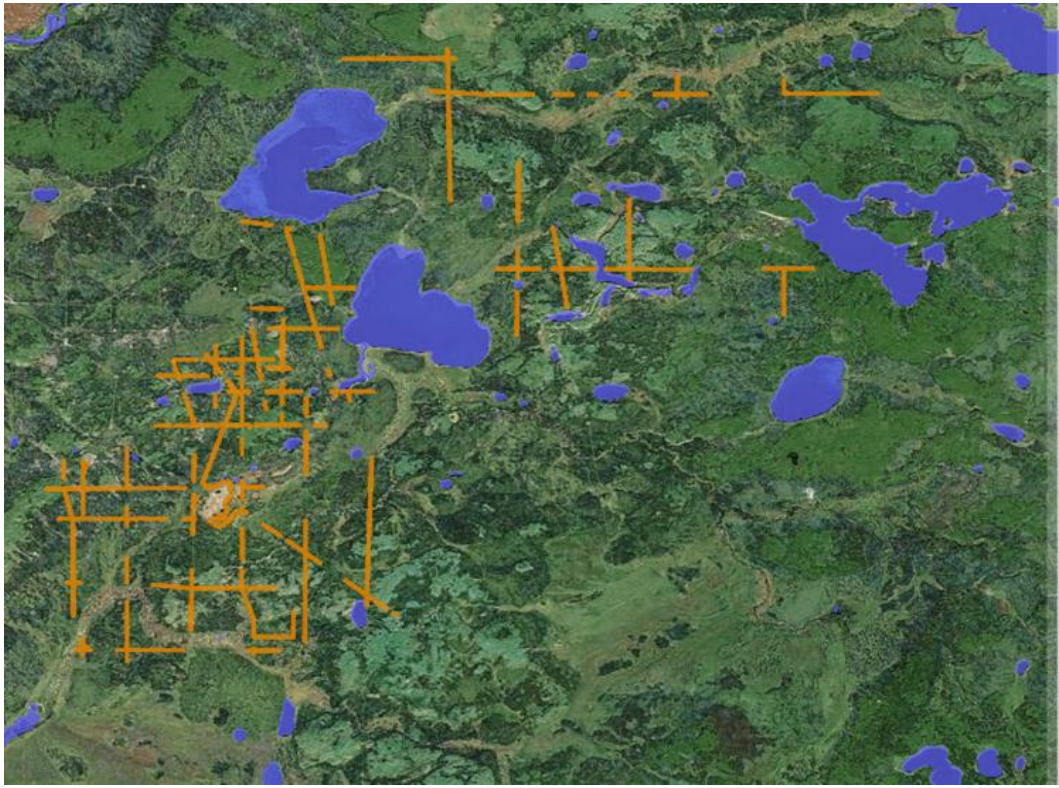
Dillon River Wildlands (2014-15)



Treatment area includes:
Twp 81-83 ; Rg 2, 3, 4

Approx. 200 km of linear features restored

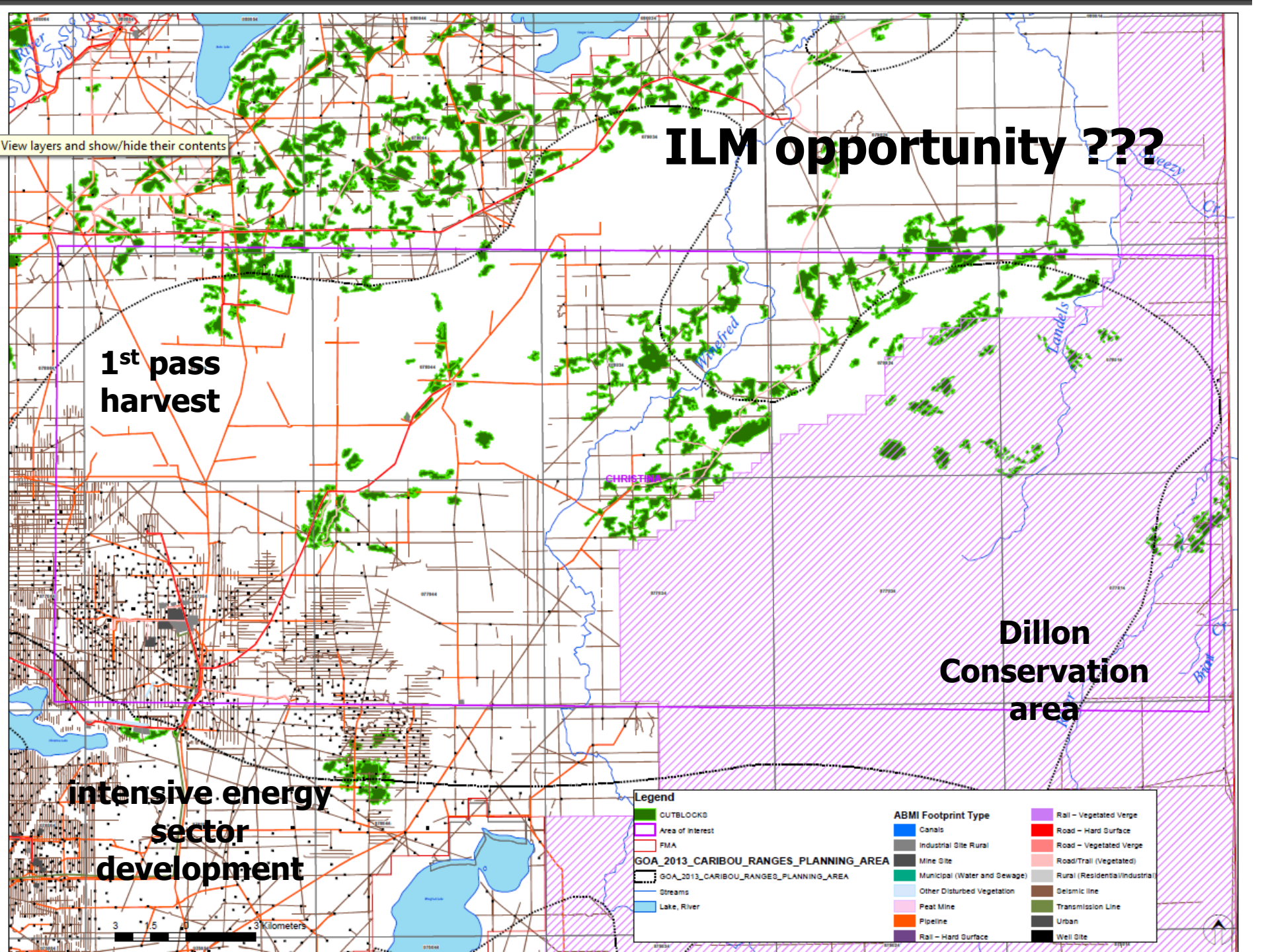




Example:

Dillon Wildlands Caribou Habitat Restoration project 2014-2015

CWD challenging depending on adjacent stand types


View layers and show/hide their contents
ILM opportunity ???
1st pass harvest
Dillon Conservation area
intensive energy sector development
CHRISTINA
Legend
CUTBLOCKS
Area of Interest
FMA
GOA_2013_CARIBOU_RANGES_PLANNING_AREA
GOA_2013_CARIBOU_RANGES_PLANNING_AREA
Streams
Lake, River
ABMI Footprint Type
Canals
Industrial Site Rural
Mine Site
Municipal (Water and Sewage)
Other Disturbed Vegetation
Peat Mine
Pipeline
Rail – Hard Surface
Rail – Vegetated Verge
Road – Hard Surface
Road – Vegetated Verge
Road/Trail (Vegetated)
Rural (Residential/Industrial)
Seismic line
Transmission Line
Urban
Well Site
3 1.5 0 3 Kilometers

Acknowledgements

Dr. David Andison
Bandaloop Landscape-Ecosystem Services

Regional Industry Caribou Collabortion, COSIA

CEMA, Stony Mountain 800 project

Government of Alberta, Land Use Framework

Transcanada Pipelines Ltd, Alberta Envrionment and Parks, Alberta Agriculture & Forestry

The Forestry Corp
Spatial Planning Systems


Questions?