



Environmental HCVF Assessment and deferral area selection in the AI-Pac FMA area

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June 21, 2005



Acknowledgements

Kevin Timoney, Treeline Ecological Research

Tony Iacobelli, WWF Canada

Angele Blasutti, WWF Canada

Rick Schneider, CPAWS

Helene Walsh, CPAWS

Sara Geirholm, PAC Team

AI-Pac Forest Management Task Force



Alberta-Pacific Forest Industries

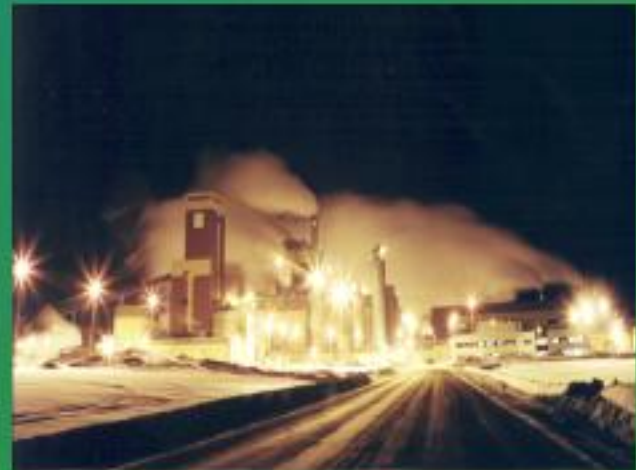
- North America's largest single line kraft pulp mill
- Budgeted to produce 610,000 air dried metric tonnes of pulp per year
- Member of the Forest Stewardship Council (Economic Chamber)
- FSC Assessment in November 2004





Alberta-Pacific Forest Industries

- Employs 445 full time, plus 650 contractors from local communities
- 16% aboriginal employment
- 60% of employees are from local communities
- Contributes approximately \$190 million/year to local economy (salaries, benefits, purchasing, etc.)



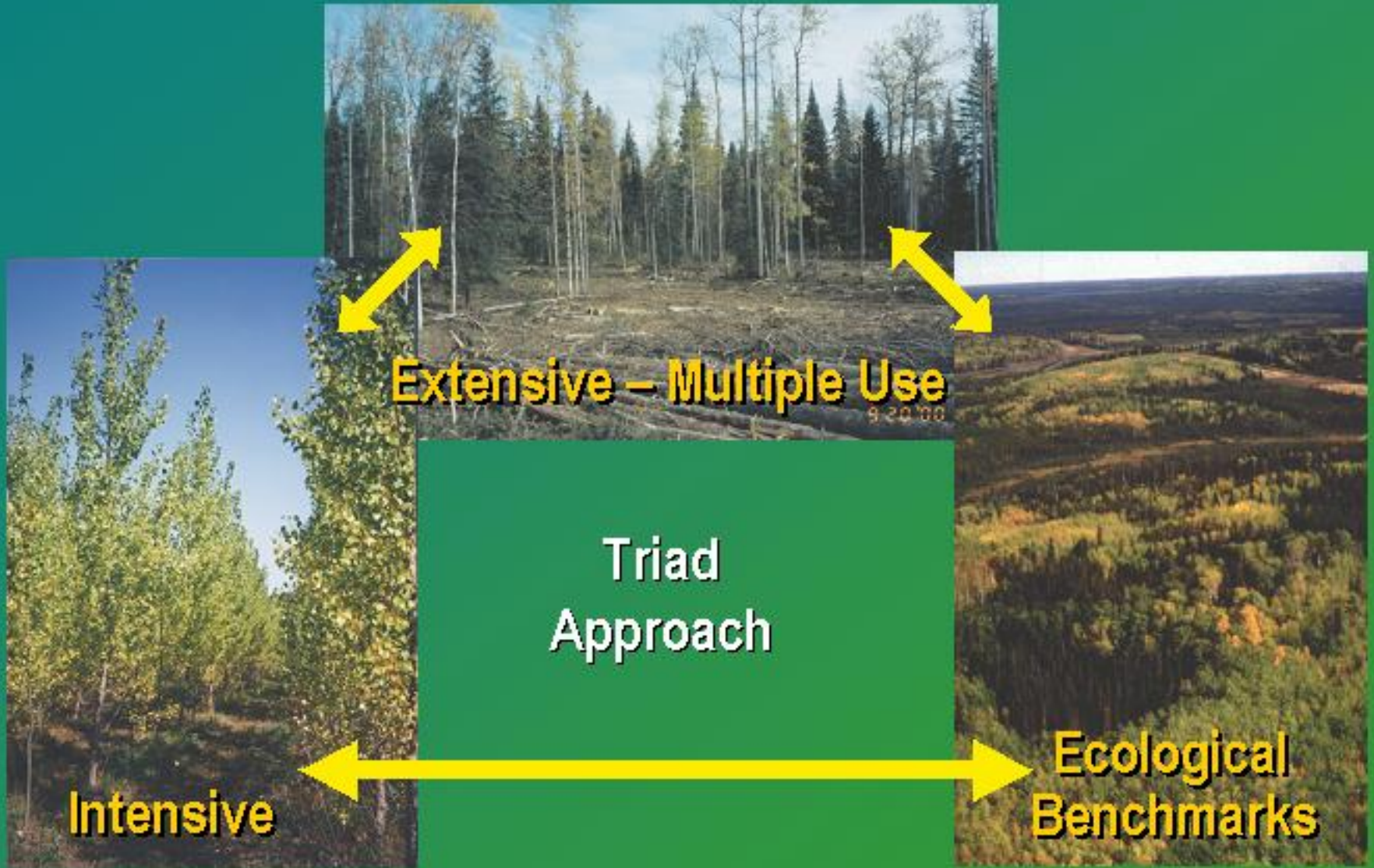


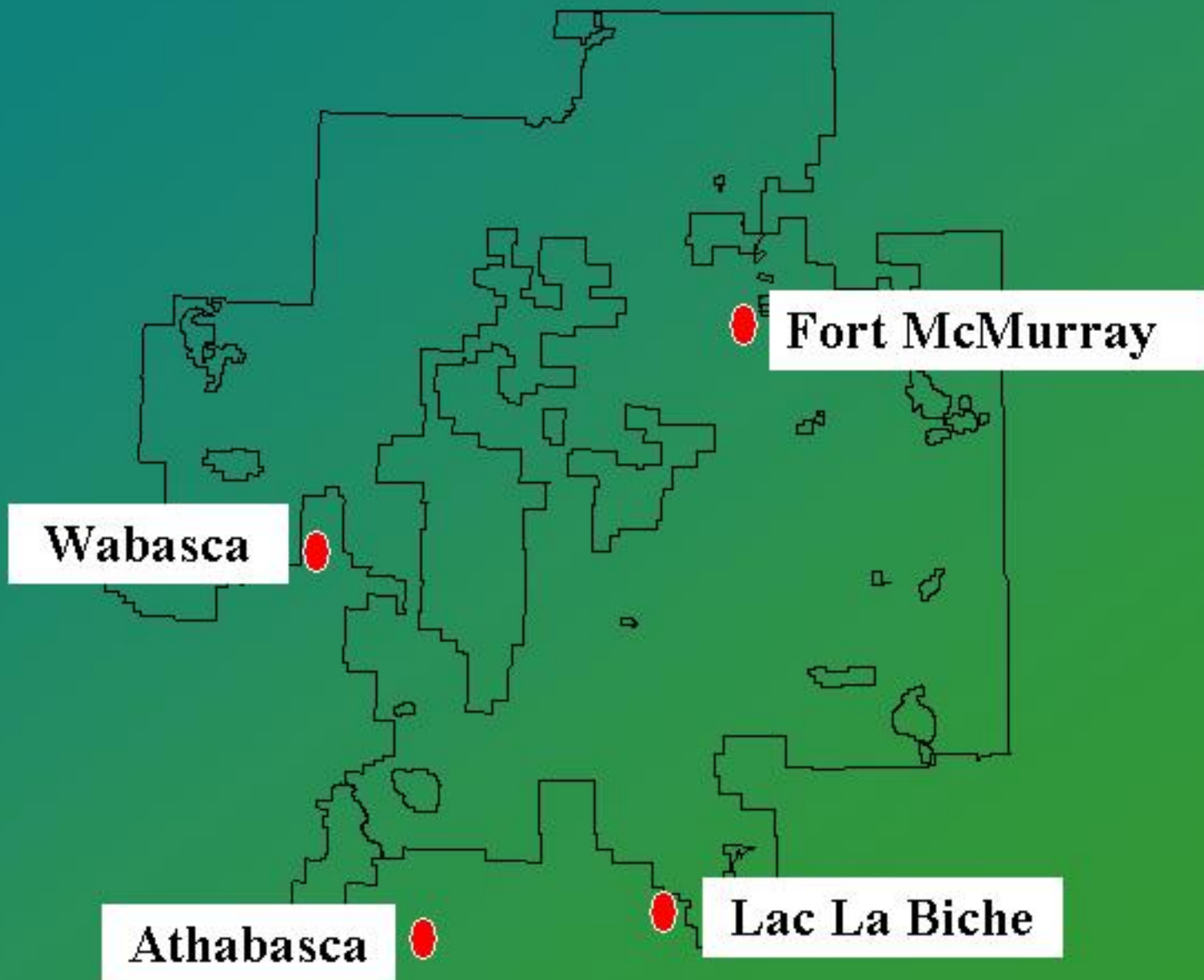
Alberta-Pacific

- FMA area of 58,000 km²
- 10% of Alberta landbase
- 22 communities
- 40,000 Aboriginal people in and adjacent to FMA
- 2.2 million m³ deciduous
- 370,000 m³ coniferous



Forest Ecosystem Management



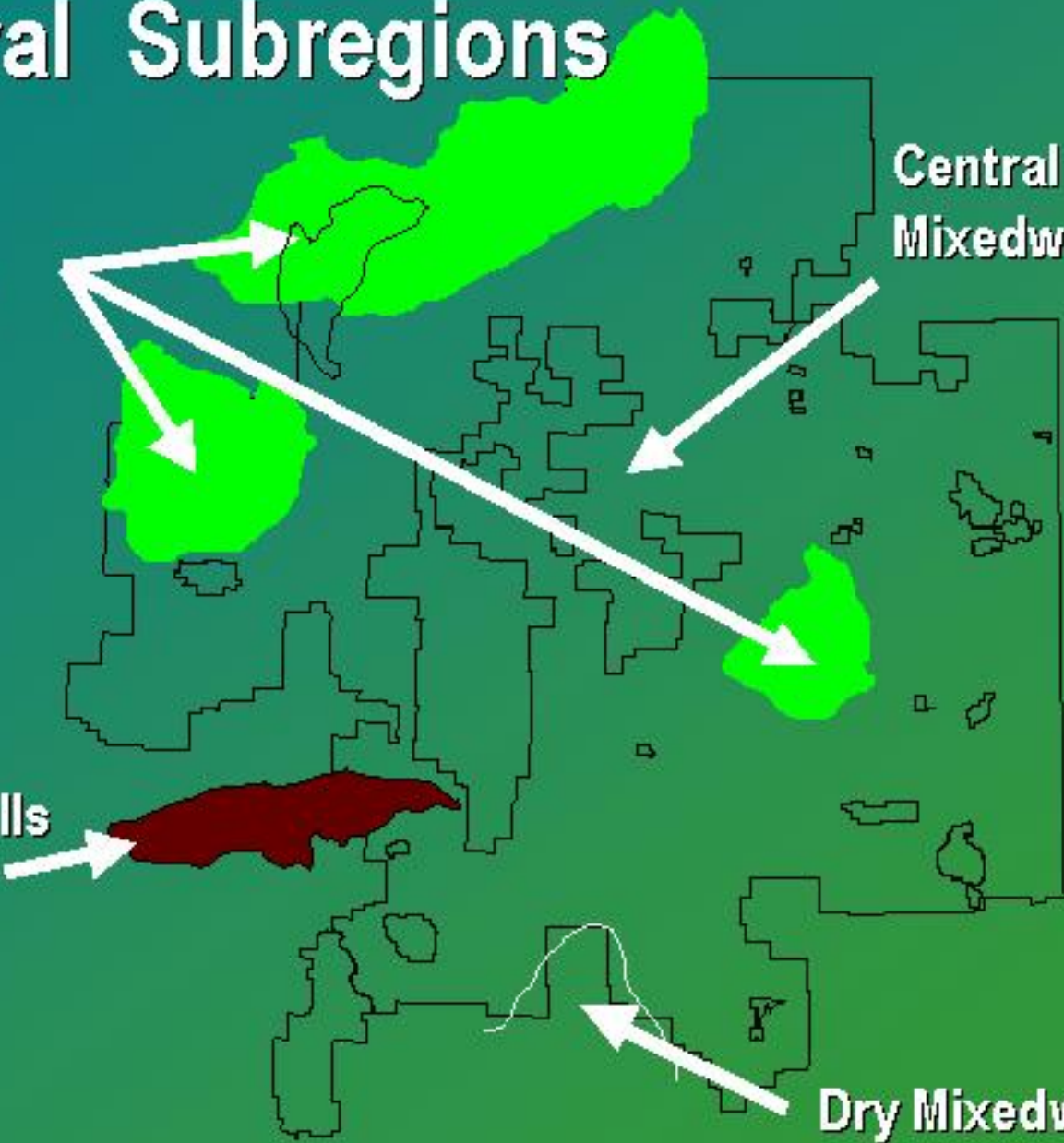




Natural Subregions

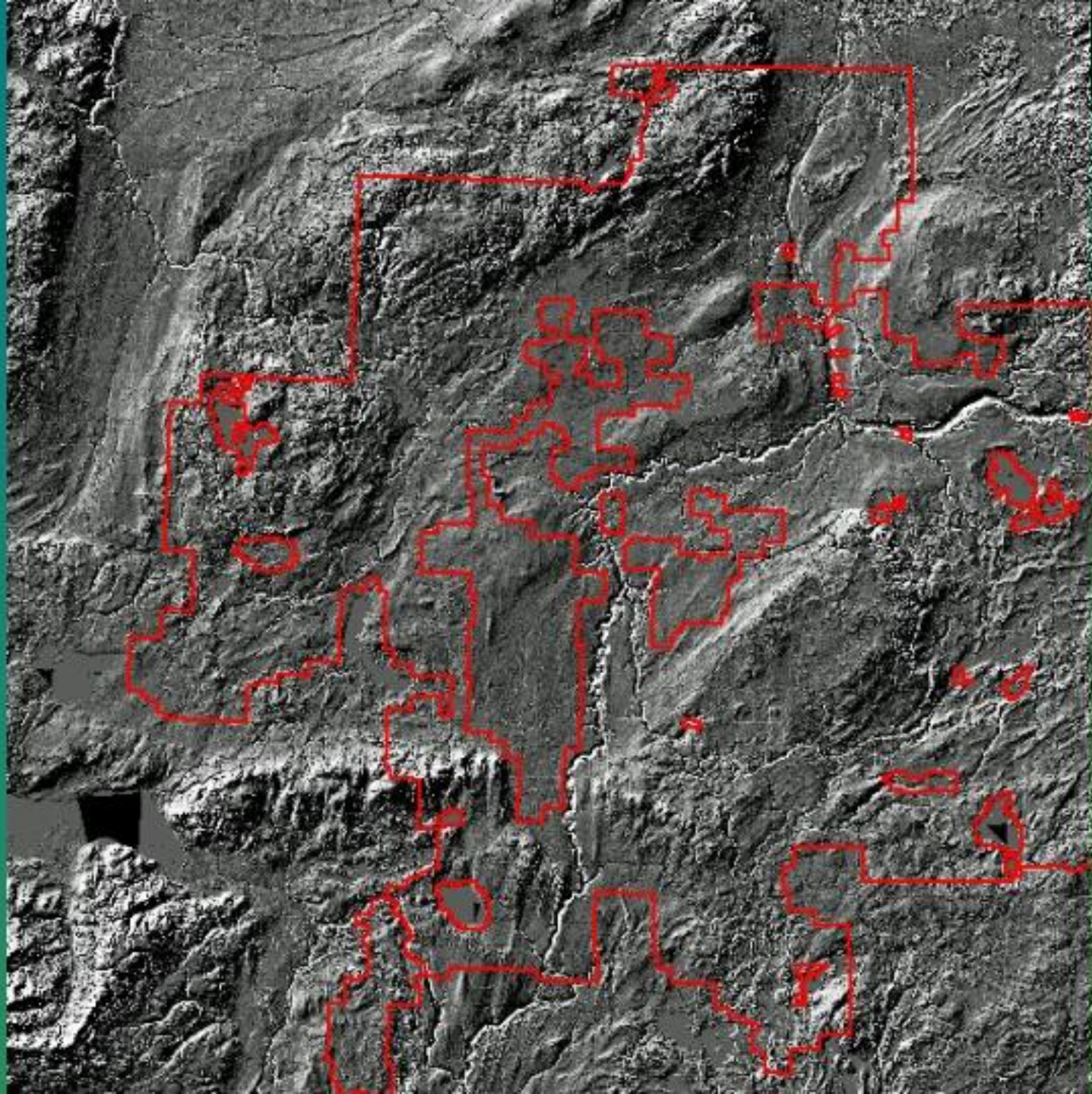
Boreal Highlands 15%

Central Mixedwood 83%



Lower Foothills 1%

Dry Mixedwood 1%

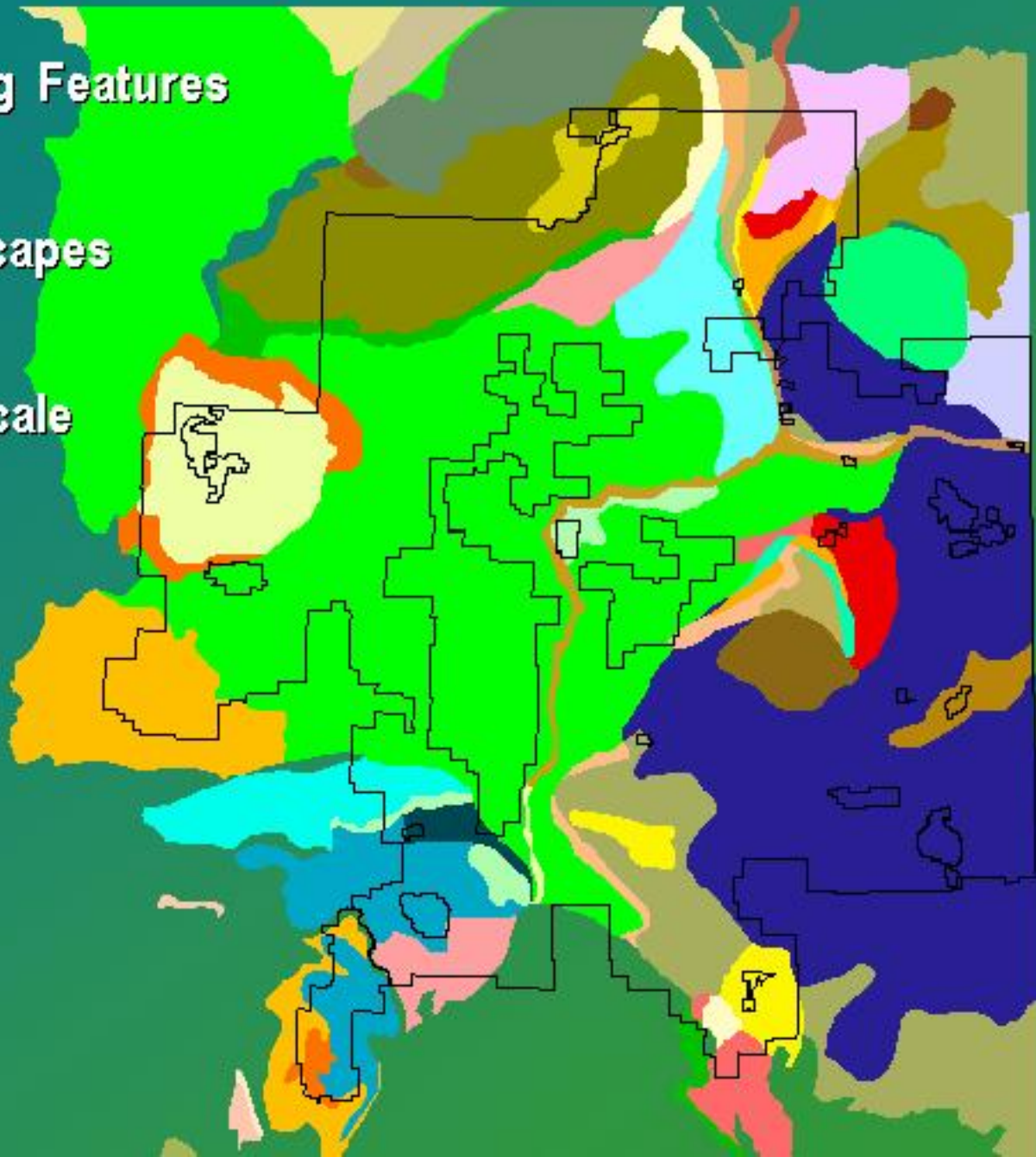




Enduring Features

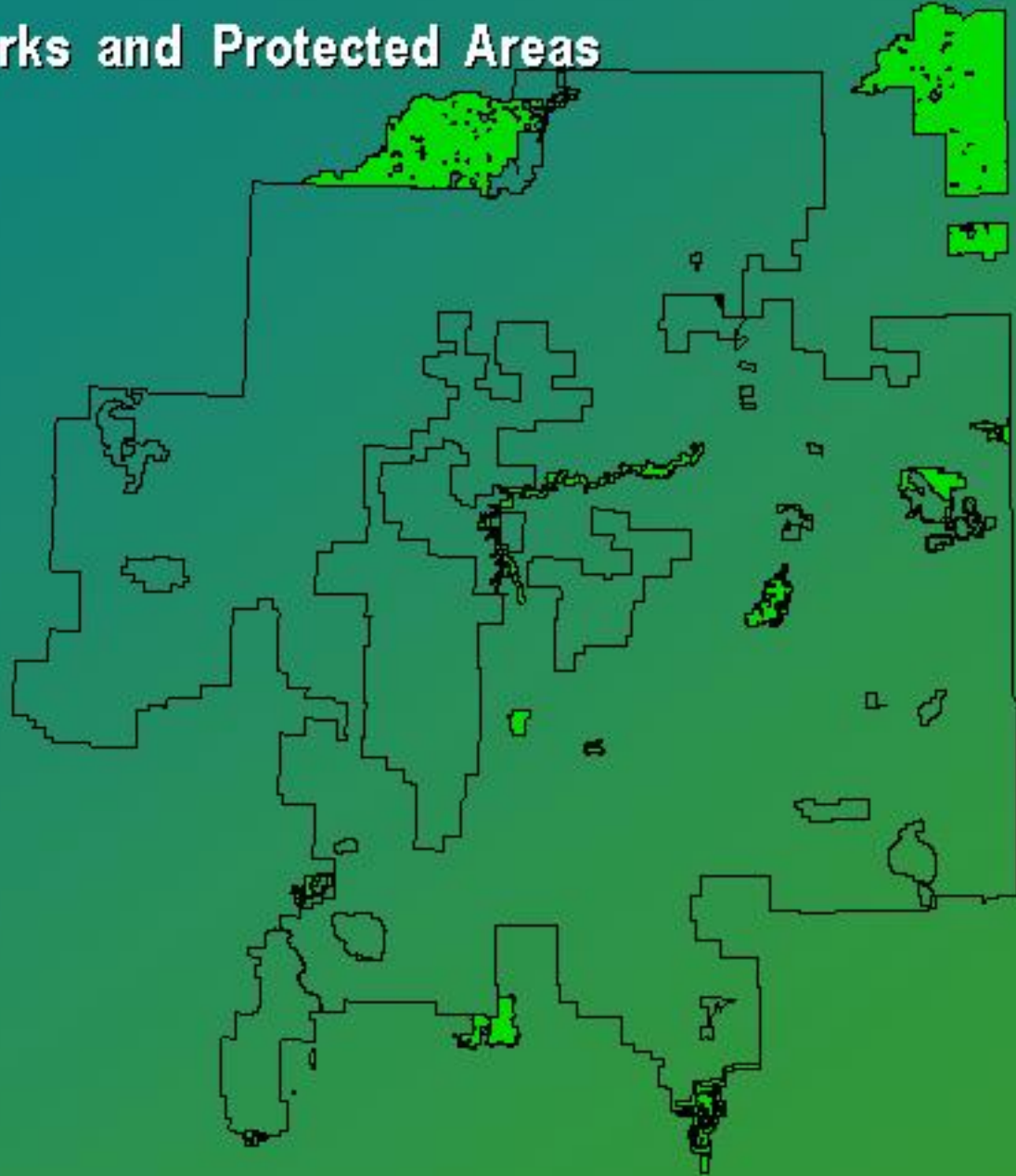
Soil Landscapes of Canada

1:100,000 scale



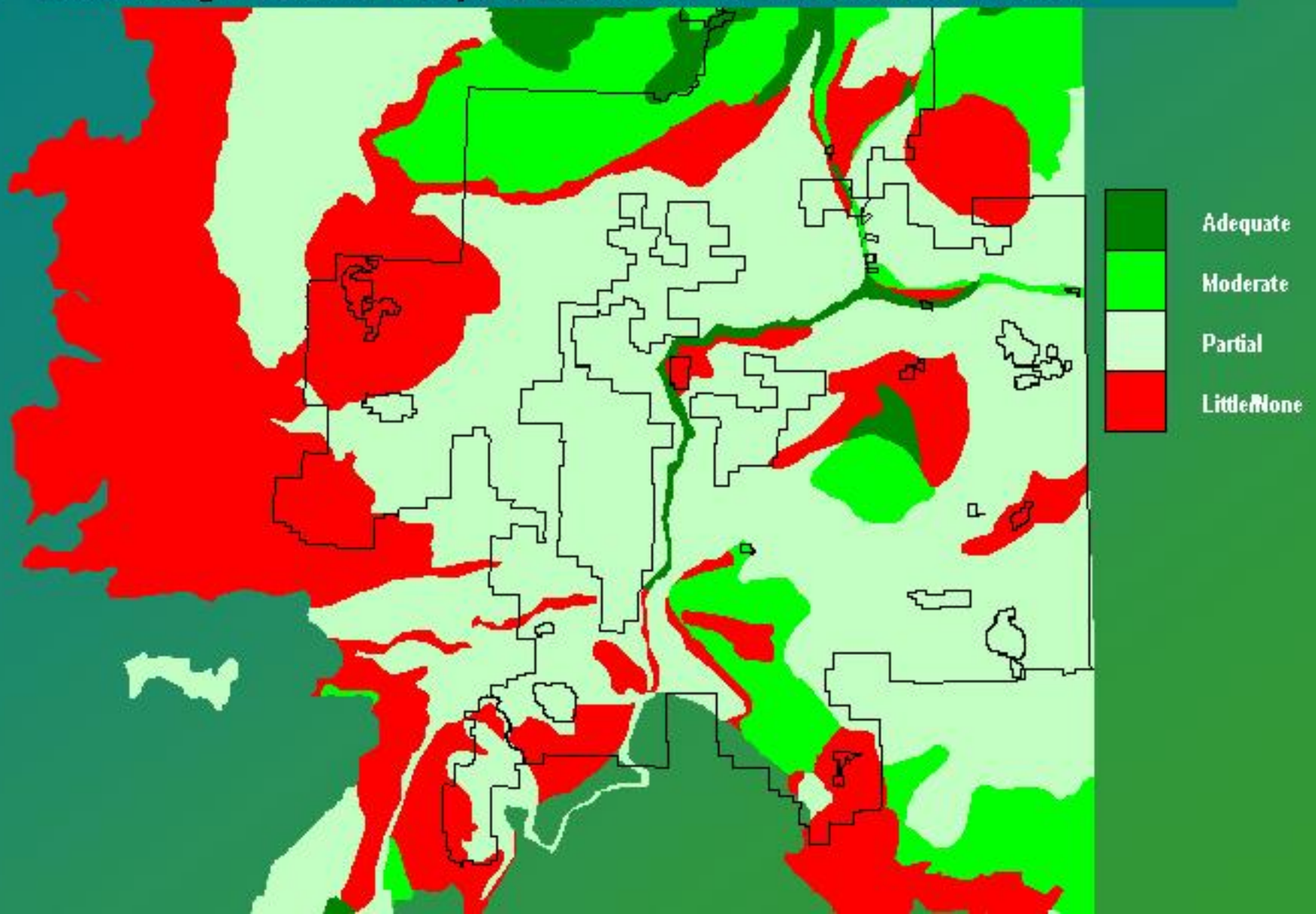


Existing Parks and Protected Areas





Enduring Feature Representation in Protected Areas



HCVF Assessment so far:

Still work to be done on HCV 5 and 6 and development of specific management strategies

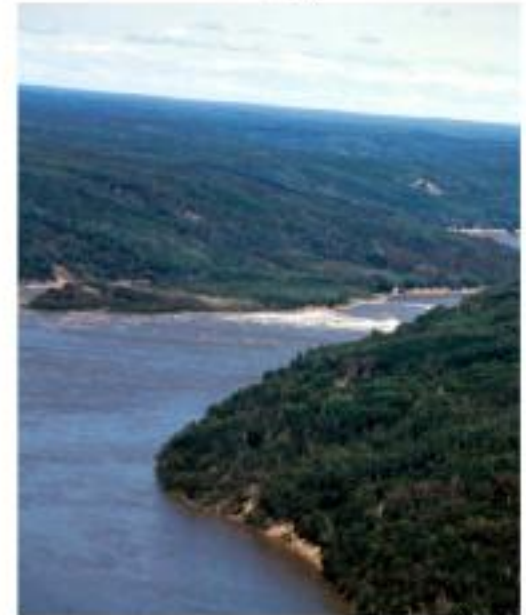


Significant Forest Values For Local Aboriginal People:

A Preliminary Investigation into High Conservation Values Five & Six of the Alberta-Pacific Forest Management Agreement Area

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September 16, 2004

High Conservation Value Forests (HCVF) within the Alberta-Pacific Forest Management Agreement Area: A Summary Report





1. Does the forest contain species at risk or potential habitat of species at risk as listed by international, national or provincial authorities?

Timoney identified 16 priority focal species, including:

Woodland Caribou, Northern Long-eared bat, Grizzly Bear, Wolverine, Short-eared Owl, Loggerhead Shrike, Sprague's Pipit, Northern Leopard Frog, Western Toad, Short-eared Cisco, Pygmy Whitefish, Black-backed Woodpecker



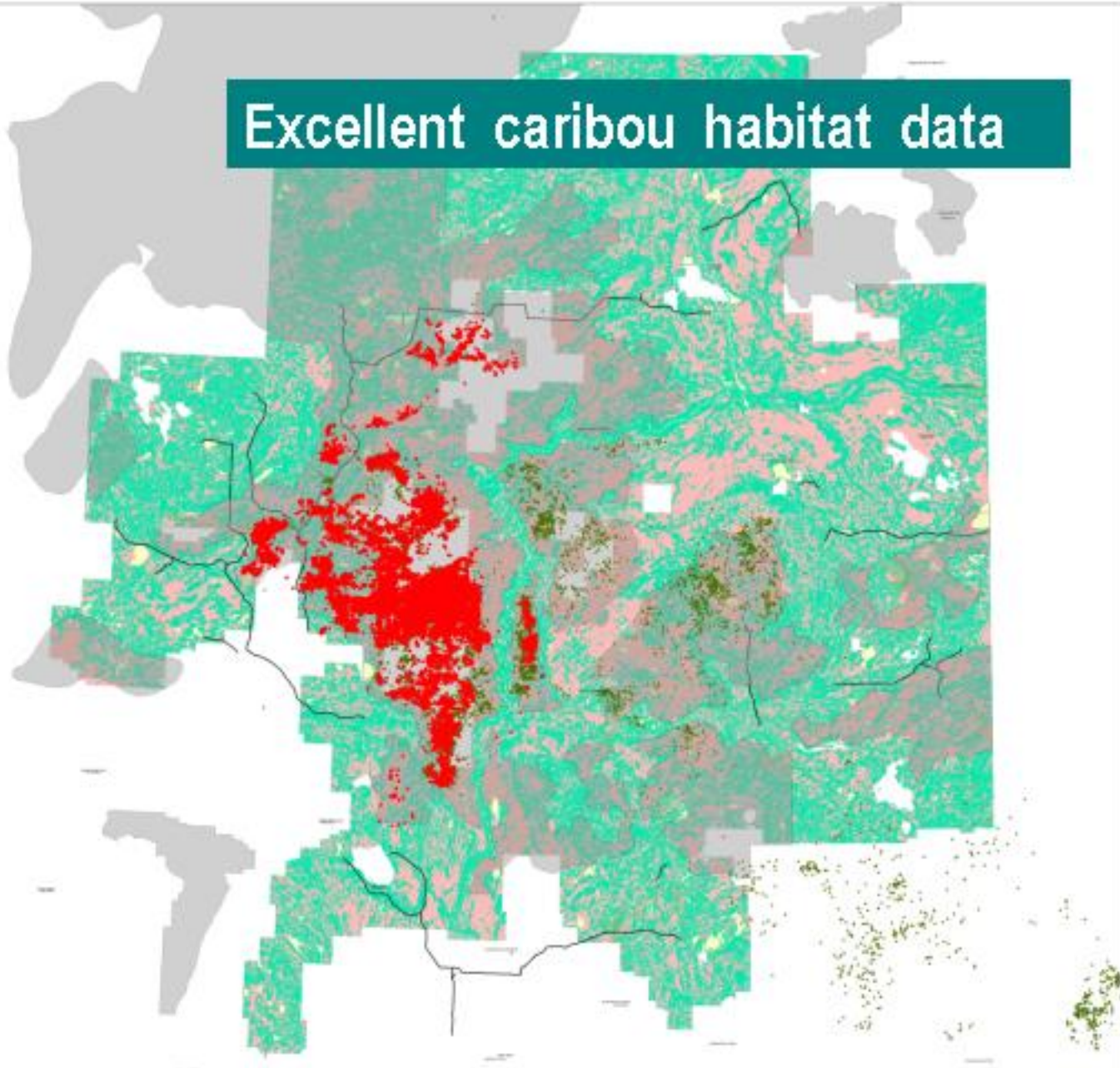


Excellent review of species presence in the Ecoregion

- Some not present in the FMA area
- Presence of a species at risk does not necessarily denote HCVF
- Many species are listed as 'sensitive' not designated as at risk
- Grassland species, few nest locations
- Low densities or transient

- AI-Pac identified Woodland Caribou as HCVF

Excellent caribou habitat data



Timber Ecological Research



Matthew Smith
Environmental and Cultural U.S. Consulting

**Woodland Caribou Telemetry
Locations and Caribou
Management Zones in Relation
to Soil Moisture Class and Water
Bodies**

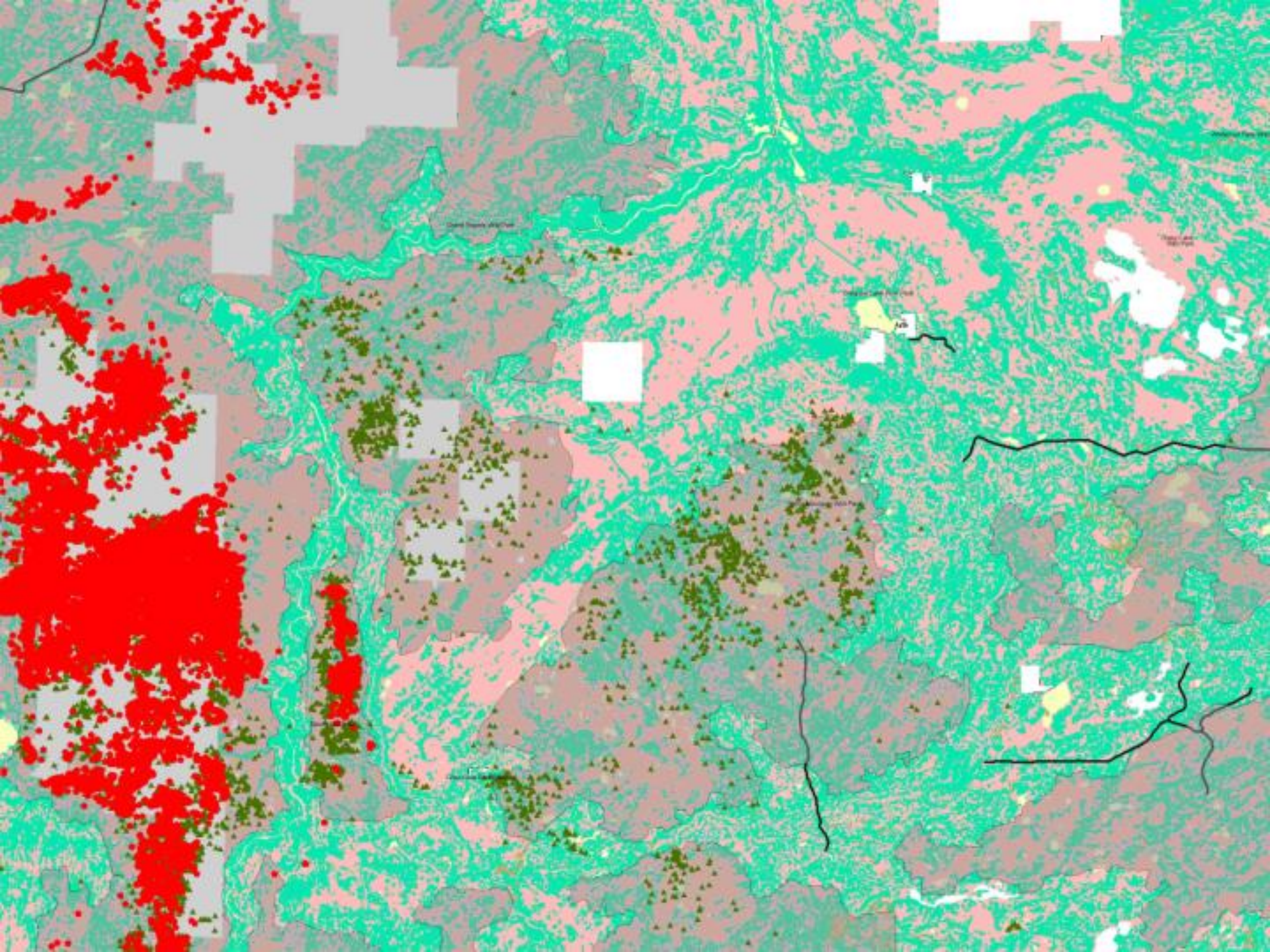
(Map 7)

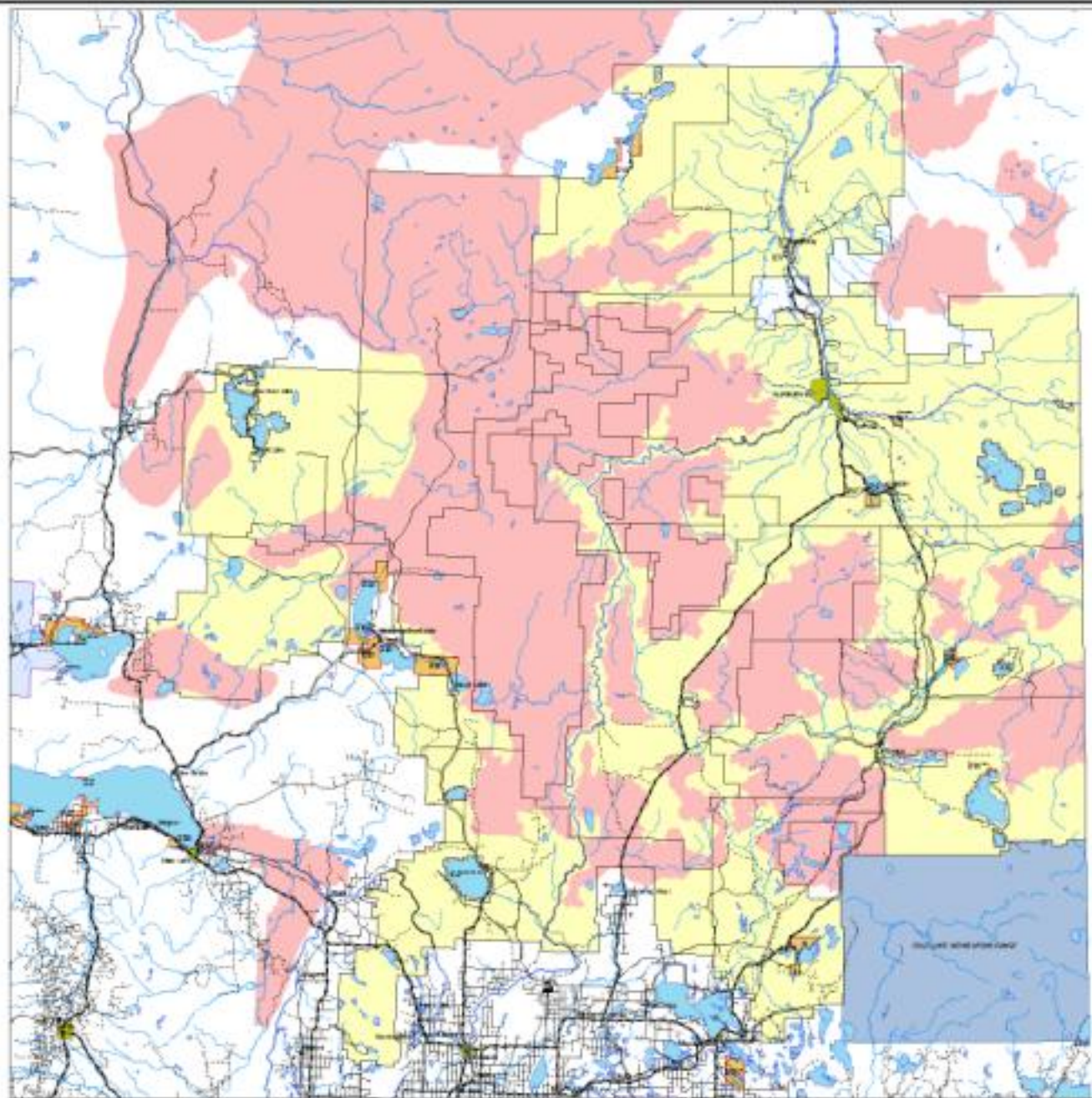
Legend

- Caribou VHF Locations
- Caribou GPS Locations
- Caribou Zones
- Moisture Class**
 - Dry
 - Moist
 - Wet
- Parks (CNR)
- Protected Areas
- Military Reserves
- Metis Settlements
- Indian Reserve
- Village/Hamlet
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Railway
- Alberta-Pacific Forest Management Units
- Alberta-Pacific Mill Site



1:50,000 Base Map Purchased from
Spatial Data Warehouse Ltd.
1:1,000,000 Base Map, Government of Canada
Natural Resources Canada 10 1997





Alberta-Pacific
Forest Management and Conservation U.S. Consulting

Woodland Caribou Management Zones

(Map 1)

Legend

- Caribou Management Zones
- Wetland Reserves
- Indian Reserve
- Military Reserves
- Village/hamlet
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Railway
- Alberta-Pacific Forest Management Units
- Alberta-Pacific Mill Site



1:50,000 Scale Map. The content from
Spatial Data Hub and U.S.C.
1:50,000 Scale Map, Government of Canada
Information Canada Centre 1999



2. Does the forest contain a globally, nationally or regionally significant concentrations of endemic species?

Timoney Ecoregion - 3 species of endemic plants from the Athabasca Dunes, Whooping Cranes



AI-Pac FMA - no (stopover sites for Whooping Crane)

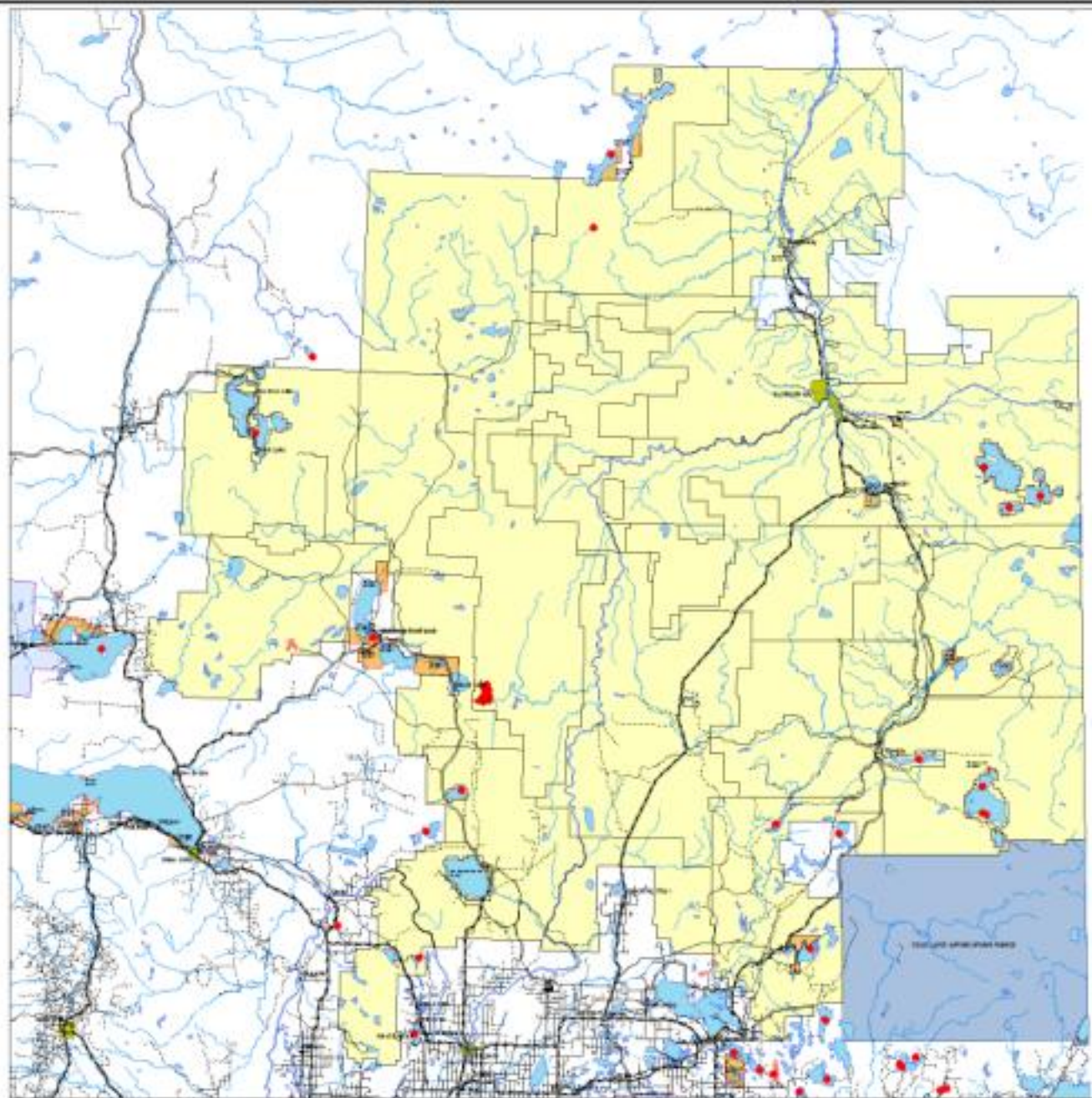


3. Does the forest include critical habitat containing globally, nationally or regionally significant seasonal concentrations of species (one or several species e.g. concentrations of wildlife in breeding sites, wintering sites, migrations sites, migrational routes or corridors)?

Timoney – Peace-Athabasca Delta, Whooping Crane nesting area, Utikuma Lake, Trumpeter Swan Lakes, Northeastern Alberta migratory flyway, major river valleys

AI-Pac HCVEs –

Trumpeter Swan Lakes, Bird Colonies, Pelican Lake Important Bird Area. Bird Staging Areas identified in Question 11



Alberta-Pacific
Environmental and Cultural LCC Consulting

Species Concentration Sites

(Map 2)

Legend

- Wet Complex
- Peckham Lake IBR
- Troncyer Bean Lands
- M&B (S&B) Lands
- Indian Reserve
- Military Reserves
- Village Hamlet
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Railway
- Alberta-Pacific Forest Management Units
- Alberta-Pacific Wet Site



1:50,000 Scale Map Produced from
Spatial Data Model File
1:100,000 Scale Map, Government of Canada
Bathymetric and Contour Data



4. Does the forest contain critical habitat for regionally significant species (e.g. species representative of habitat types naturally occurring in the management unit, focal species, species declining regionally)?

Cougar, American Bittern, Black Tern, Short-eared Owl, Sprague's Pipit, Northern Leopard Frog, Canadian Toad and Western Toad identified as declining by Timoney

Are these representative of habitat types in the management unit or declining due to forestry activities?

Woodland Caribou are declining in Alberta, and there is significant evidence to suggest that industrial activities within caribou ranges are partially responsible for these declines



5. Does the forest support concentrations of species at the edge of their natural ranges or outlier populations

Timoney identified 18 focal species and community types that could be considered vulnerable due to range edge considerations i.e Sprague's Pipit, Loggerhead Shrike, Pygmy Whitefish

AI-Pac did not identify any of these as HCVF



- 6. Does the forest lie within, adjacent to, or contain a conservation area:**
- a) designated by an international authority**
 - b) legally designated or proposed for protection by relevant federal/provincial body**
 - c) identified in regional land use plans or conservation plans**

Timoney identified Wood Buffalo National Park, International Biological Program Sites and “Special Places 2000” candidates

AI-Pac identified existing protected areas within the FMA area and the Clearwater Heritage River. Currently no government proposals for protection in the AI-Pac FMA area



7. Does the forest constitute or form part of a globally, nationally or regionally significant forest landscape that includes populations of most native species and sufficient habitat such that there is a high likelihood of long-term species persistence?

Intactness –

Timoney:

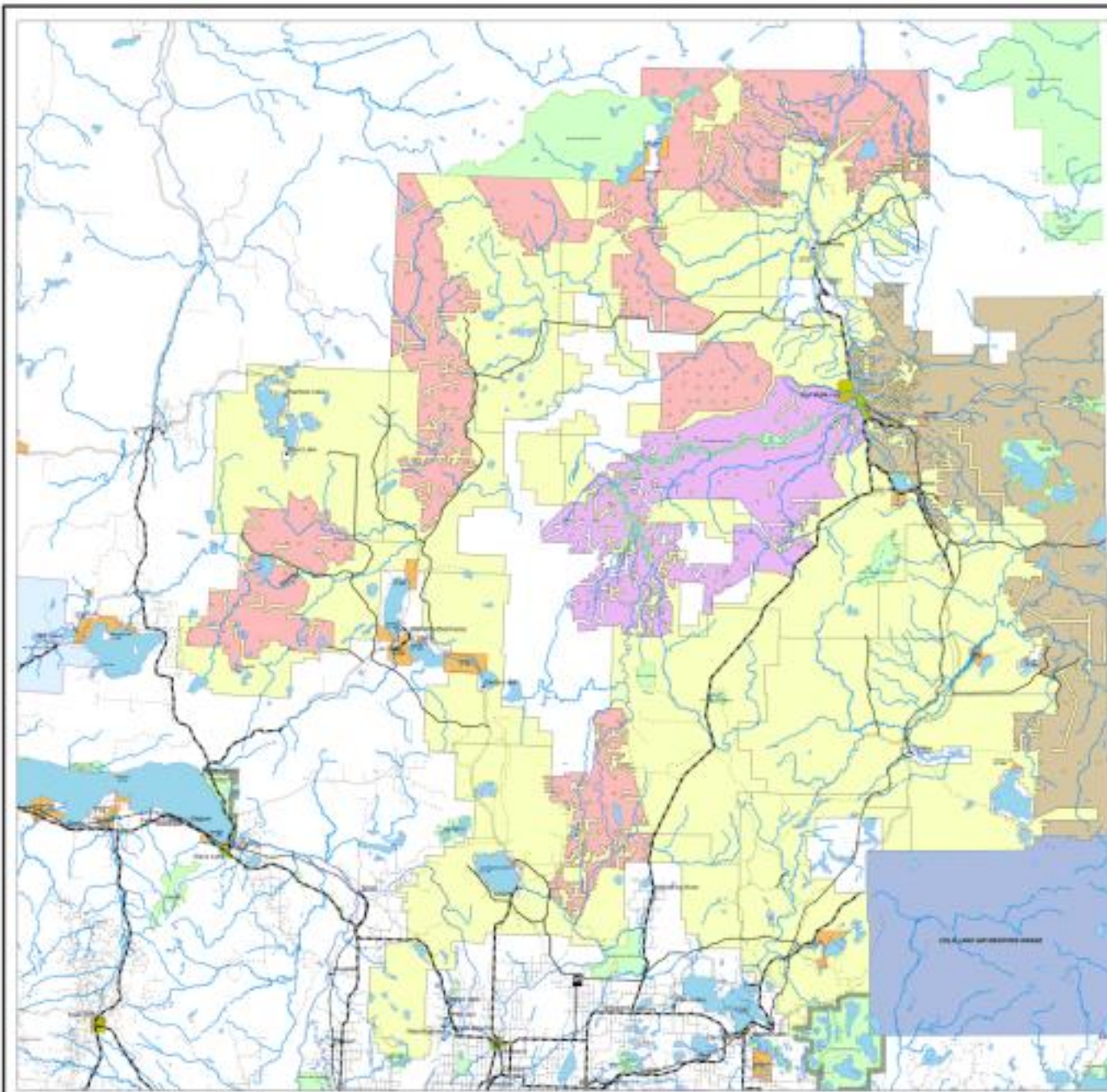
> 50,000 ha, with no roads

AI-Pac:

Global Forest Watch Intact Forest (no infrastructure) and

> 50,000 ha, with no roads and seismic densities less than 2 km/km²

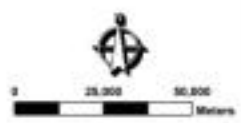




**Intact Forest Blocks without
Licensed roads**

(Map 5)

- Legend**
- Forest Blocks - 50,000 ha
 - Forest Blocks - 200,000 ha
 - Forest Blocks - 500,000 ha
 - Parks (CMT)
 - Protected Areas
 - Military Reserves
 - Métis Settlements
 - Indian Reserves
 - Village/hamlet
 - Cities, Towns and Urban Service Areas
 - Forest Road
 - Gravel Road
 - Improved Road
 - Unimproved Road
 - Railway
 - Alberta-Pacific Forest Management Units
 - Alberta-Pacific Mill Site



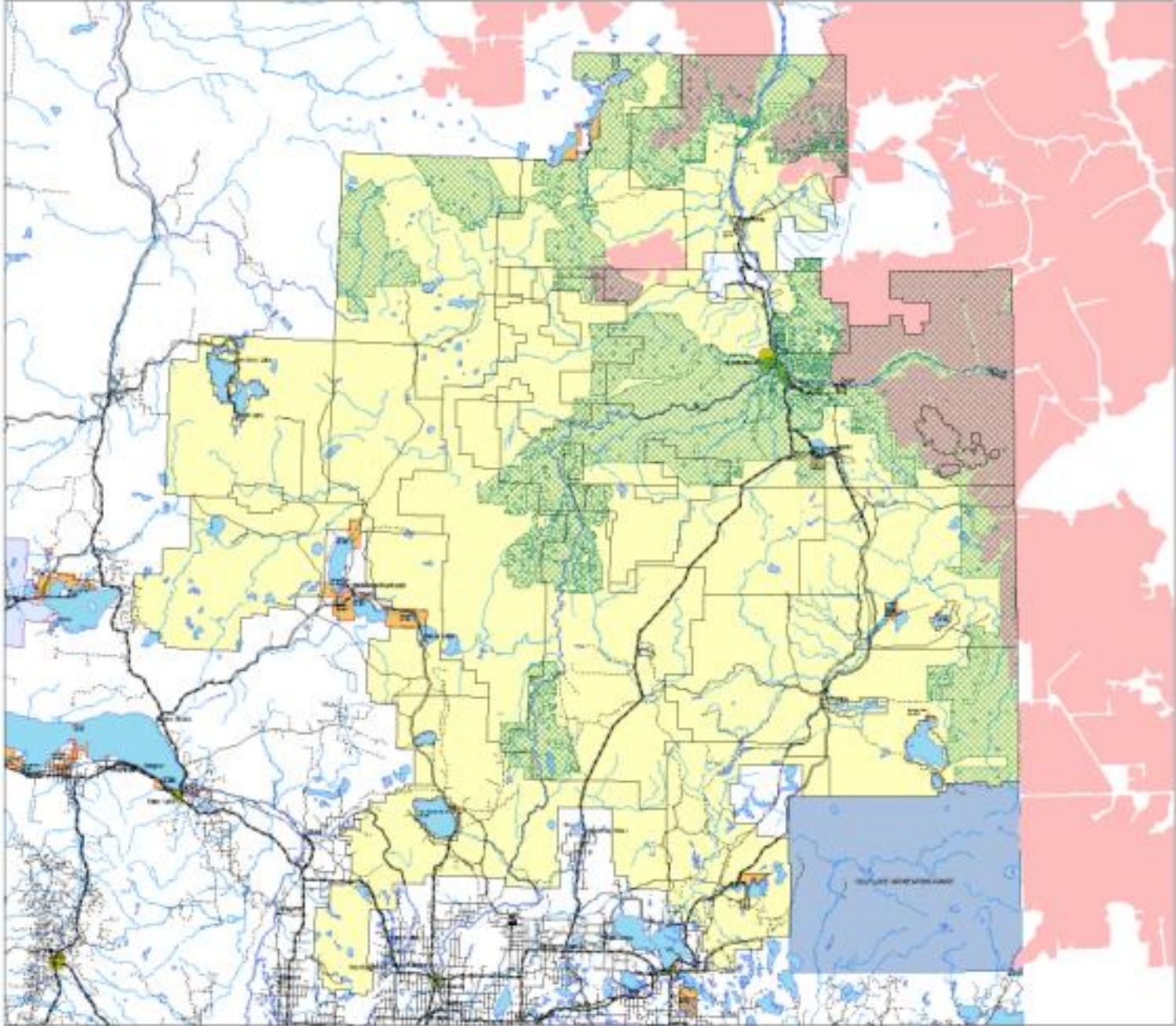
**Global Forest Watch Intact
Forests and Timoney (2003)
Intact Forests with Seismic
Densities less than
2 km/km²
(Map 4)**

Legend

- Timoney (2003) Large Landscape Level Forests
- Global Forest Watch Intact Forests
- Milk's Settlements
- Indian Reserves
- Military Reserves
- Village/Ventid
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Railway
- Alberta-Pacific Forest Management Units
- Alberta-Pacific M8 S60



1:500,000 Scale Map Prepared from
Global Forest Watch Data
1:500,000 Scale Map, Government of Canada
Heritage and Culture Canada 1998





8. Does the forest contain naturally rare ecosystem types?

2 Interior patterned saline marshes

22 Rare community types (location data limited)

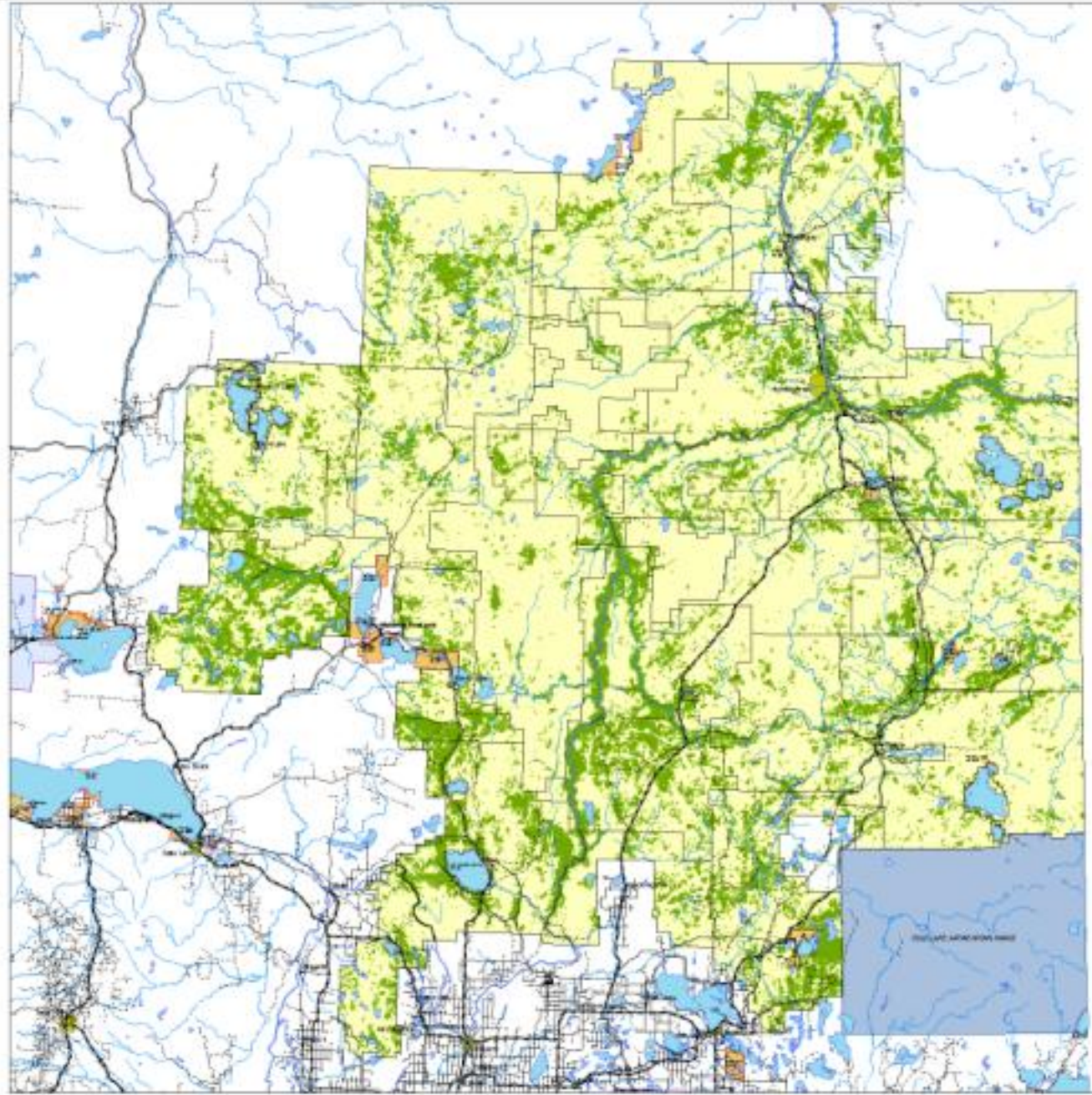
AI-Pac identify patterned saline marshes, La Saline Natural Area. Other rare ecosystem types identified in Question 11.



9. Are there ecosystem types within the forest or ecoregion that have significantly declined?

Old forest is at risk, most threatened is riparian old growth white spruce and mixedwood types (Timoney 2003)

All merchantable forest stands (> 100/120 years) except black spruce identified as HCVF



Alberta-Pacific
Environmental and Cultural LULU Consulting

**Old merchantable forests
excluding Black Spruce
(Map 5)**

Legend

- Old Merchantable Forests Excluding Black Spruce
- Indian Settlements
- Indian Reserve
- Military Reserve
- Village/hamlet
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Gateway
- Alberta-Pacific Forest Management Units
- Alberta-Pacific Mill Site

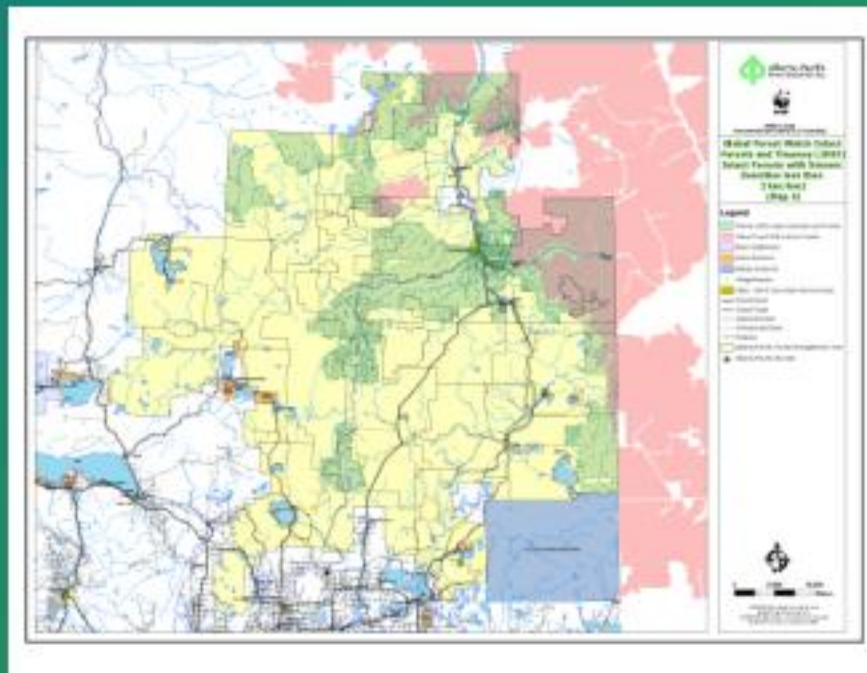


1:600,000 Scale Map Projection from
Spatial Data Warehouse
1:600,000 Scale Map, Government of Canada
Information Canada Catalogue 1996



10. Are large landscape-level forests (i.e large unfragmented forests) rare or absent in the ecoregion?

Large landscape-level forests are present in the ecoregion and the AI-Pac FMA area





11. Are there nationally/regionally significant diverse or unique forest ecosystems?

Interior patterned salt marsh (Q8)

Salt springs (Q8)

Peace – Athabasca Delta

Whooping Crane nesting area

Athabasca Dunes

Riparian Old Growth (Q9, Q11)

Salt meadows

Aspen/ostrich fern forest

Northern quillwort

Littoral submergent marsh

Dry Grasslands

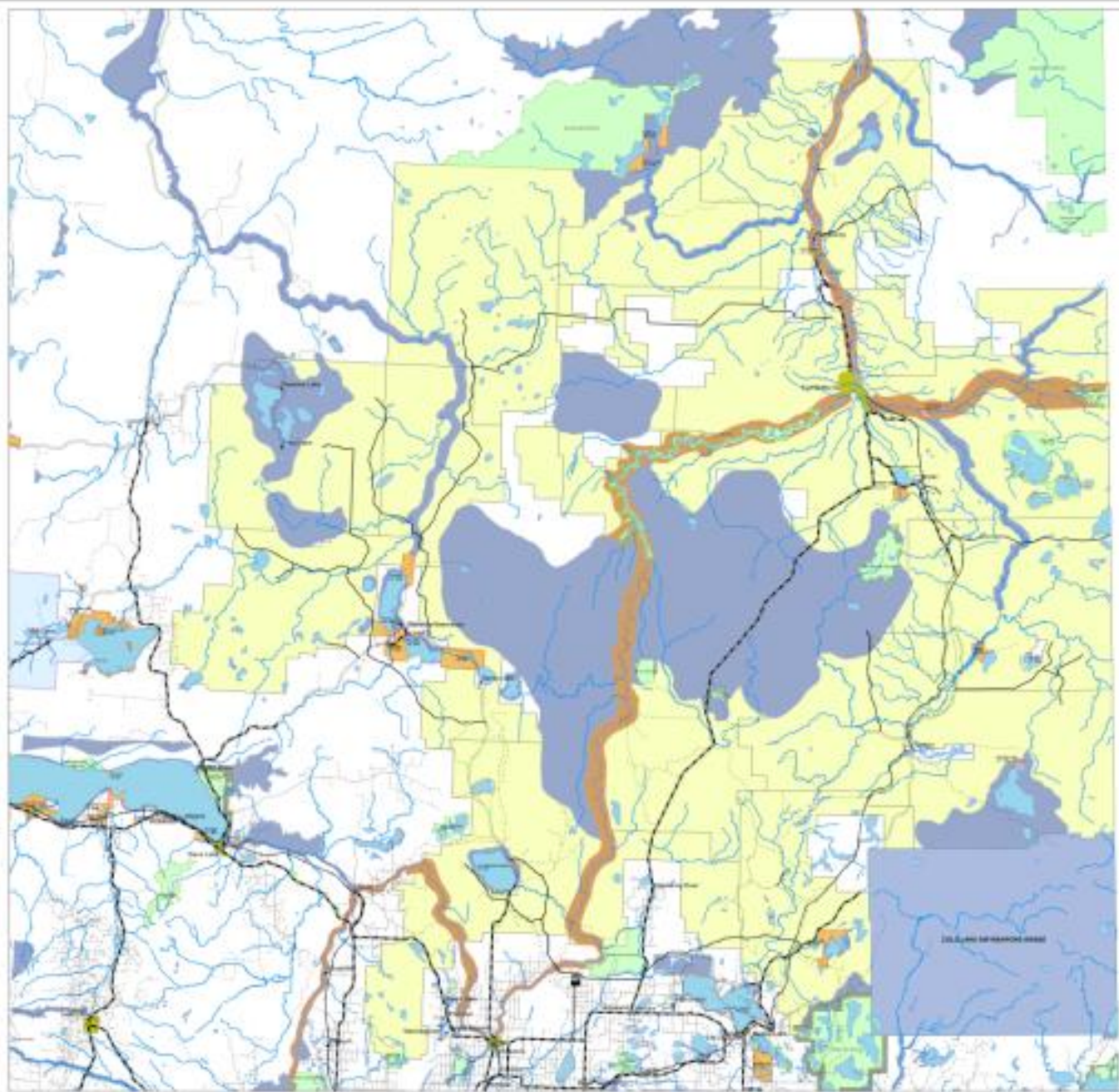




11. Are there nationally/regionally significant diverse or unique forest ecosystems?

Use Environmentally Significant Areas (ESA) analysis:

- Performs a vital environmental, ecological or hydrological function
- Contains rare or unique geological or physiographic features
- Contains significant, rare or endangered plant or animal species
- Are unique habitats with limited representation in the region, such as old growth forests or are a small remnant of once large habitats that have virtually disappeared
- Contains an unusual diversity of plant and/or animal communities due to a variety of geomorphological features and microclimatic effects
- Contains large and relatively undisturbed habitats and provide sheltered habitats for species which are intolerant of human disturbance
- Provides an important linking function and permit the movement of wildlife over considerable distances, including migration corridors and migratory stopover points
- Contain plants, animals or landforms which are unusual or are of regional, provincial, national or international significance



Trethor Ecological Research



Matthew Smith
Environmental and Cultural S.L.C. Consulting

Environmentally Significant Areas in Boreal Northeastern Alberta

(Map 2)

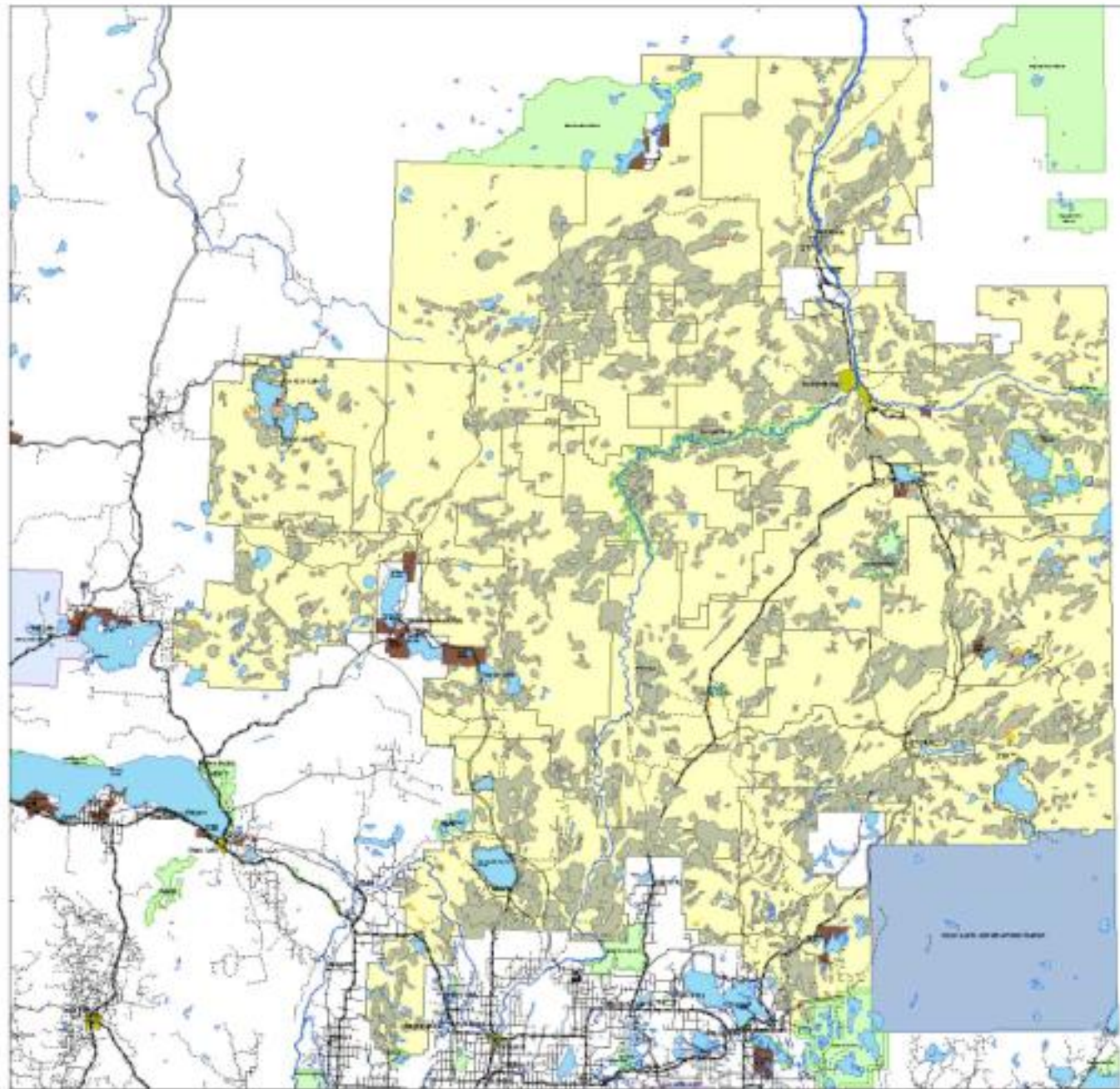
Legend

Environmentally Significant Areas

- Internationally Significant
- Nationally Significant
- Provincially Significant
- Parks (C/N/T)
- Protected Areas
- Military Reserves
- Métis Settlements
- Indian Reserve
- Village/hamlet
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Railway
- Alberta-Pacific Forest Management Units
- Alberta-Pacific Mill Site



1:250,000 Scale Map Purchased from
Natural Data Newfoundland Ltd.
1:2,500,000 Scale Map, Government of Canada
(Natural Resources Canada, 1998)



Surface Water Extent and Distribution as Indicated by Non-Bog Wetlands, Mapped Lakes, and Major Rivers
(Map 8)

- Legend**
- Non-Bog Surface Waters**
-  Fen
 -  Marsh
 -  Swamp
 -  Water Bodies
 -  Major Rivers
-  Protected Areas
 -  Military Reserves
 -  Métis Settlements
 -  Indian Reserves
 -  Village/hamlet
 -  Cities, Towns and Urban Service Areas
 -  Paved Road
 -  Gravel Road
 -  Improved Road
 -  Unimproved Road
 -  Railway
 -  Alberta-Pacific MFTU
 -  Alberta-Pacific Forest Management Units

Note:
 Non-Bog Wetlands Derived from the
 Peatland Inventory of Alberta Digital
 Data



Timoney report identified:

HCVs including:

Ecosystems and Landscapes: Peace-Athabasca Delta, Athabasca Dunes, Utikuma Lake, Athabasca and Clearwater Rivers, large intact landscapes

Communities and Habitats: old-growth forests, saline wetlands, large wetland complexes, rare forest types, dry grasslands, woodland caribou habitat

Rare species: Peregrine falcon, Whooping Crane, Sprague's Pipit, Loggerhead Shrike, Woodland caribou, Grizzly Bear, Cougar, Wolverine, and sand dune endemic plants

HCVF layers in Timoney (2003)

- Dry mixedwood buffered by 50 km
- Caribou Zones
- National-level Environmentally Significant Areas
- Intact landscapes
- Old growth forests (excluding black spruce)
- Non-bog surface water
- Rare elements (ANHIC data)
- Protected Areas



Environmental HCVF for the Al-Pac FMA (HCVF Summary – presented to Smartwood in November 2004)

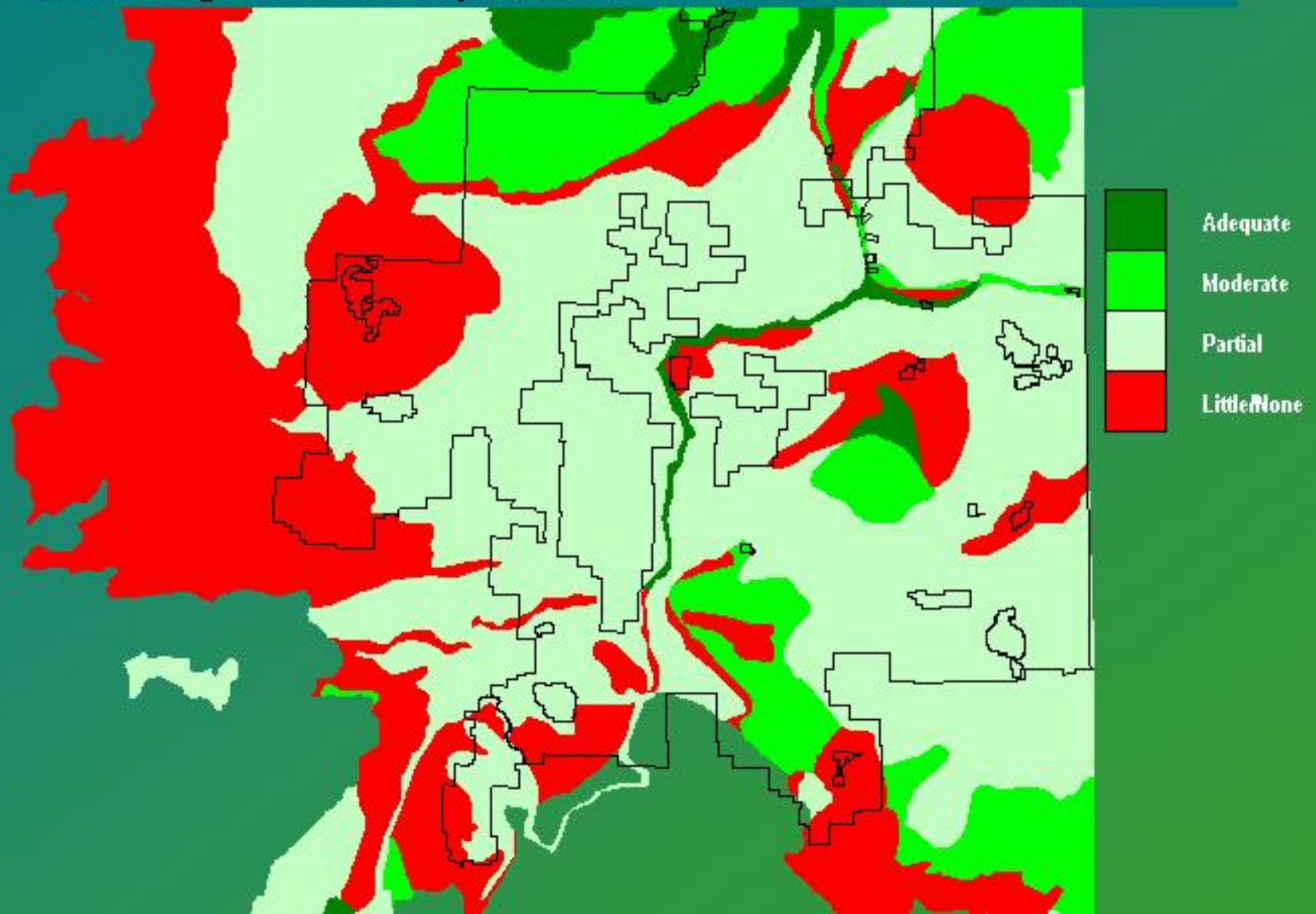
- Woodland Caribou Habitat
- Large-Landscape Level Forests
- Old Merchantable Forests
- Environmentally Significant Areas
- Existing Protected Areas (and deferral sites)
- Bird Colonies, Trumpeter Swan Lakes, IBA

Part 2

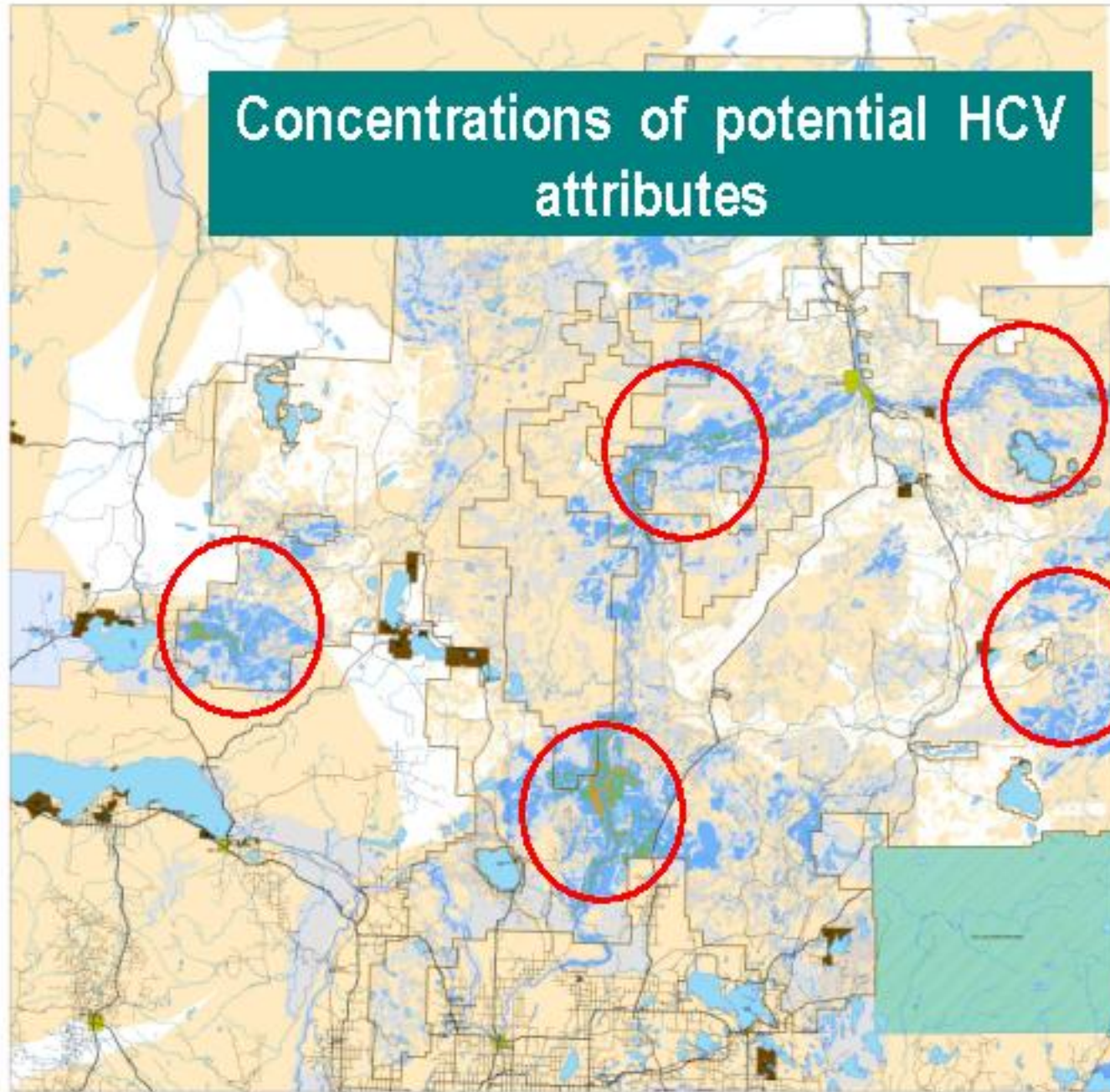
Using Analysis of Representation
Results and HCVF information to
identify deferral areas



Enduring Feature Representation in Protected Areas



Concentrations of potential HCV attributes



Conservation Rank
Based on Overlap of Eight High Conservation Value Attributes
 (Map 10)

Legend

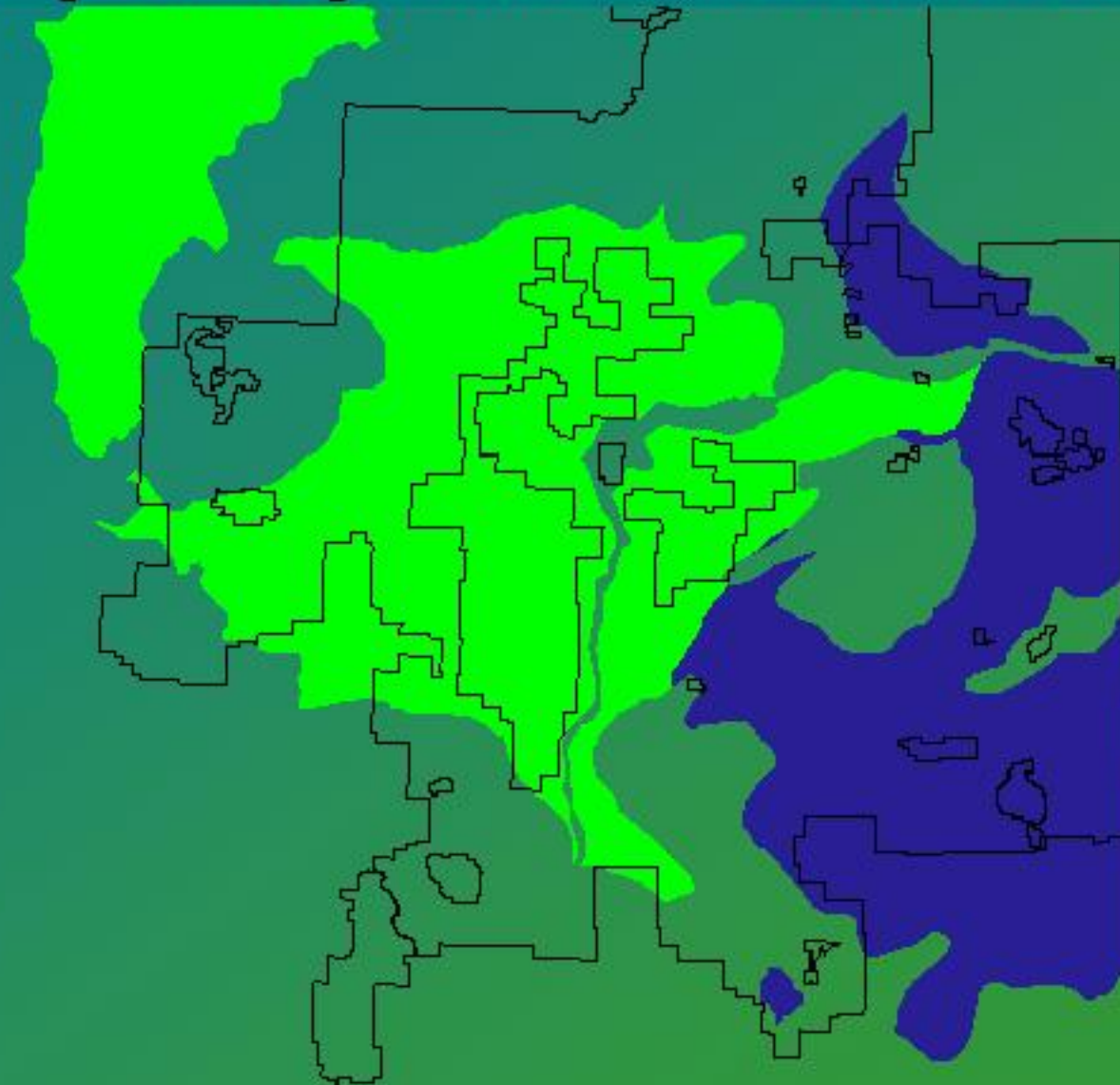
Degree of Overlap of High Conservation Values

- 0 HCV Attributes
- 1 HCV Attributes
- 2 HCV Attributes
- 3 HCV Attributes
- 4 HCV Attributes
- 5 HCV Attributes
- 6 HCV Attributes
- Military Reserves
- Waste Settlements
- Indian Reserve
- Village/hamlet
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Railway
- Alberta-Pacific Mill Site
- Alberta-Pacific Forest Management Area

Note:
 Some of the data used for overlap of High Conservation Values are only available for within the Apatc FMA. Interpretation outside the FMA is limited.

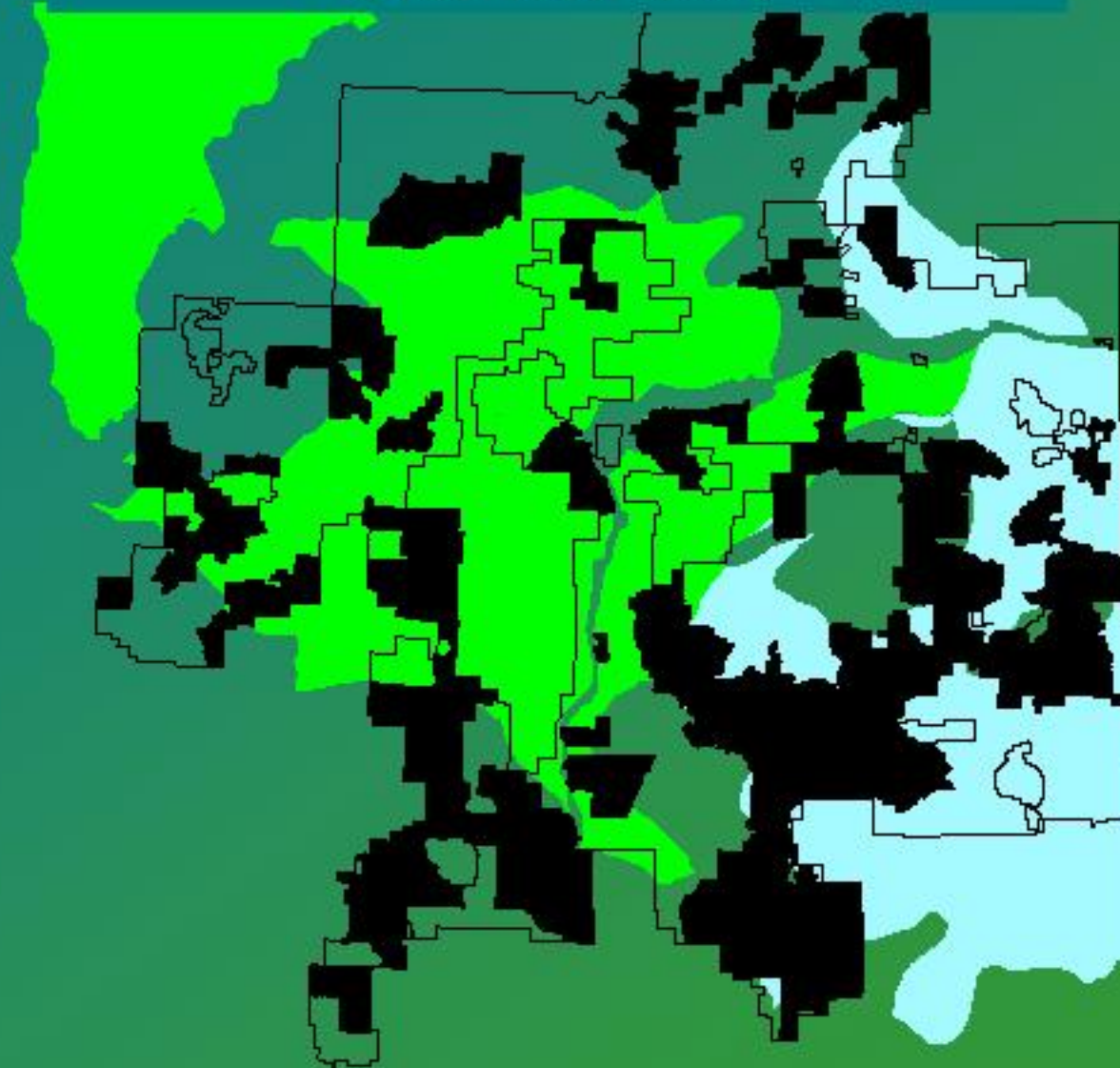


Two large enduring features dominate the FMA area

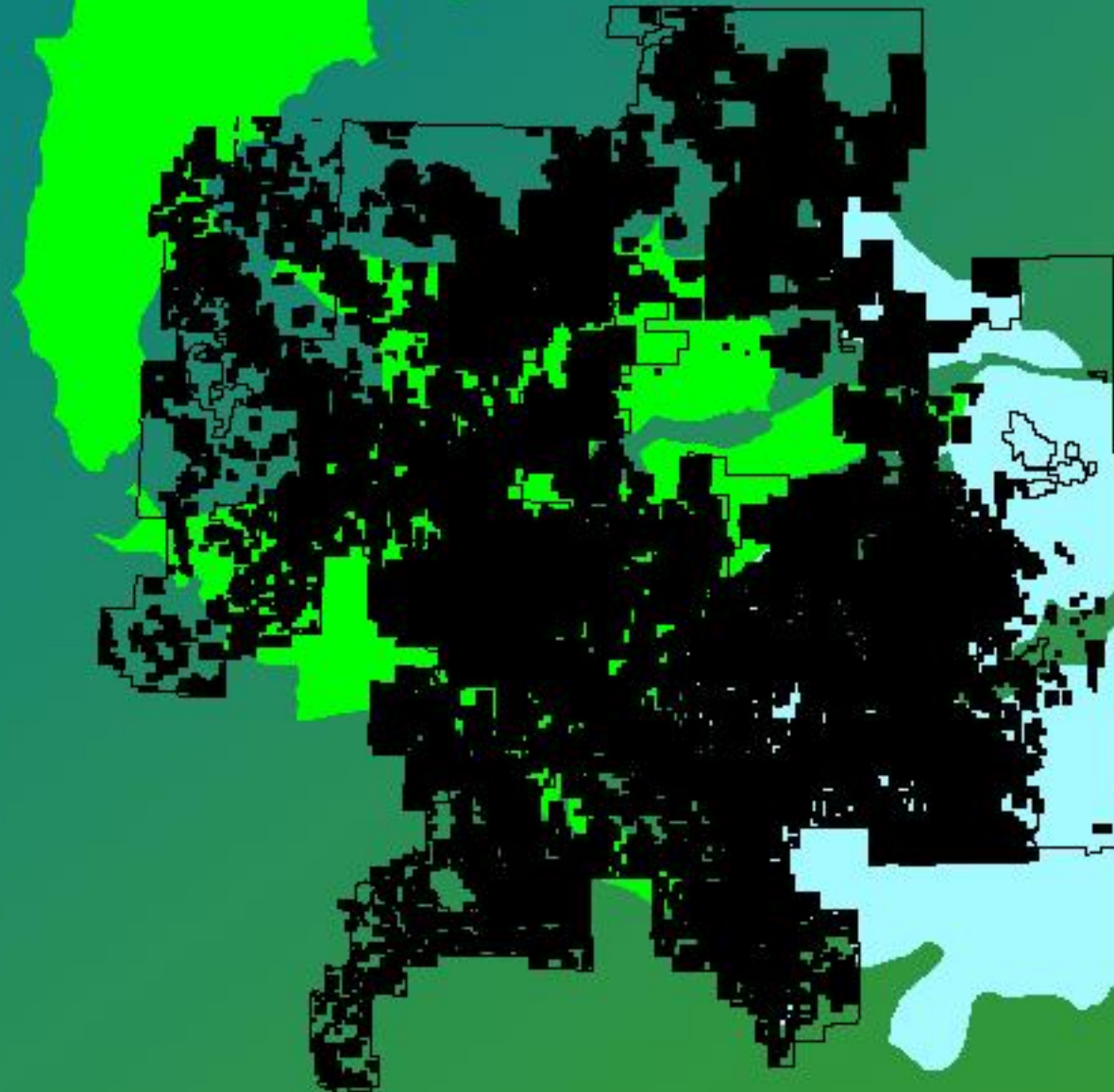




Avoiding Conflict - AI-Pac Planning Units 1993 - 2006

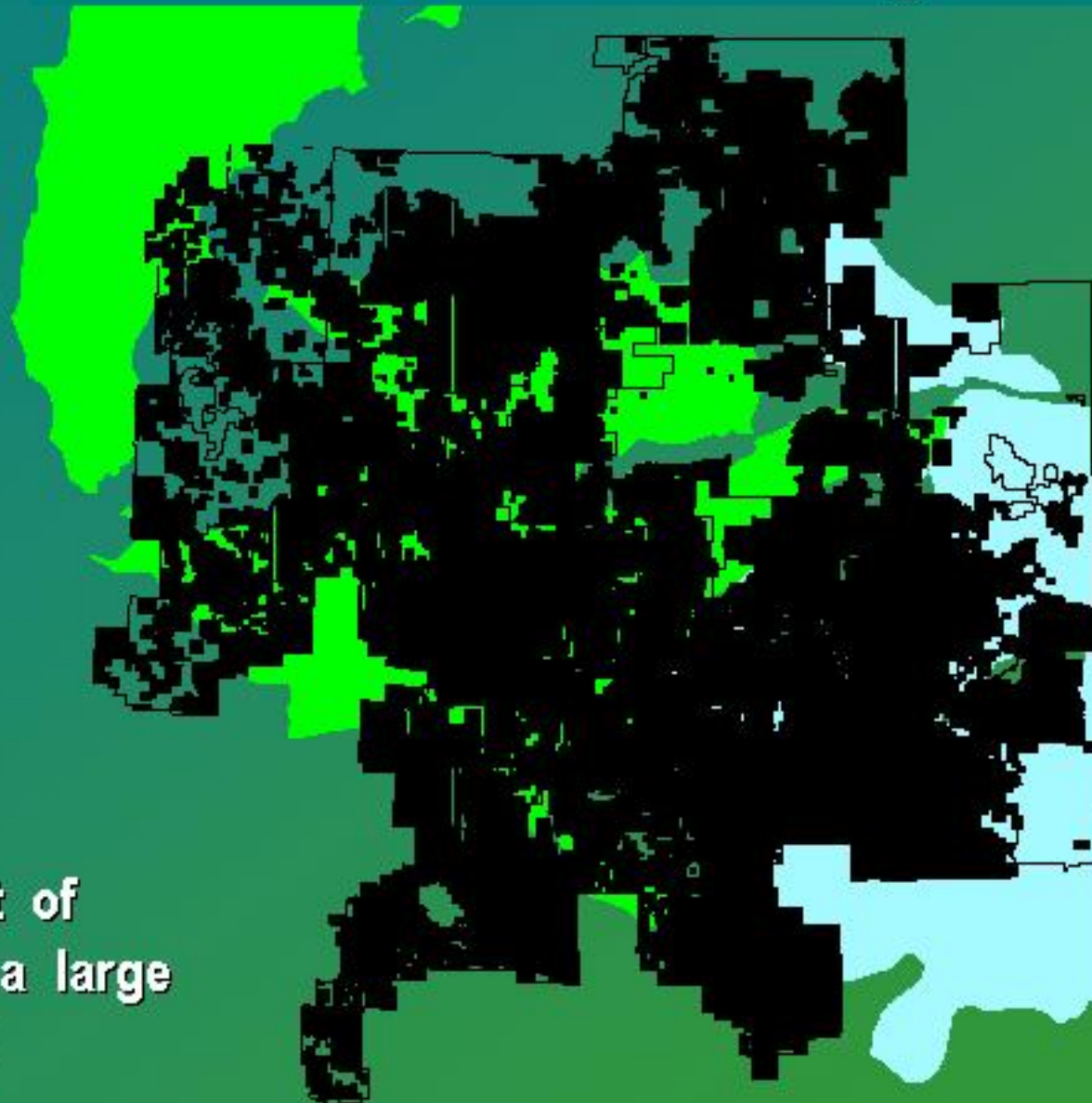


Avoiding Conflict - Oil, Gas and Oilsands Dispositions





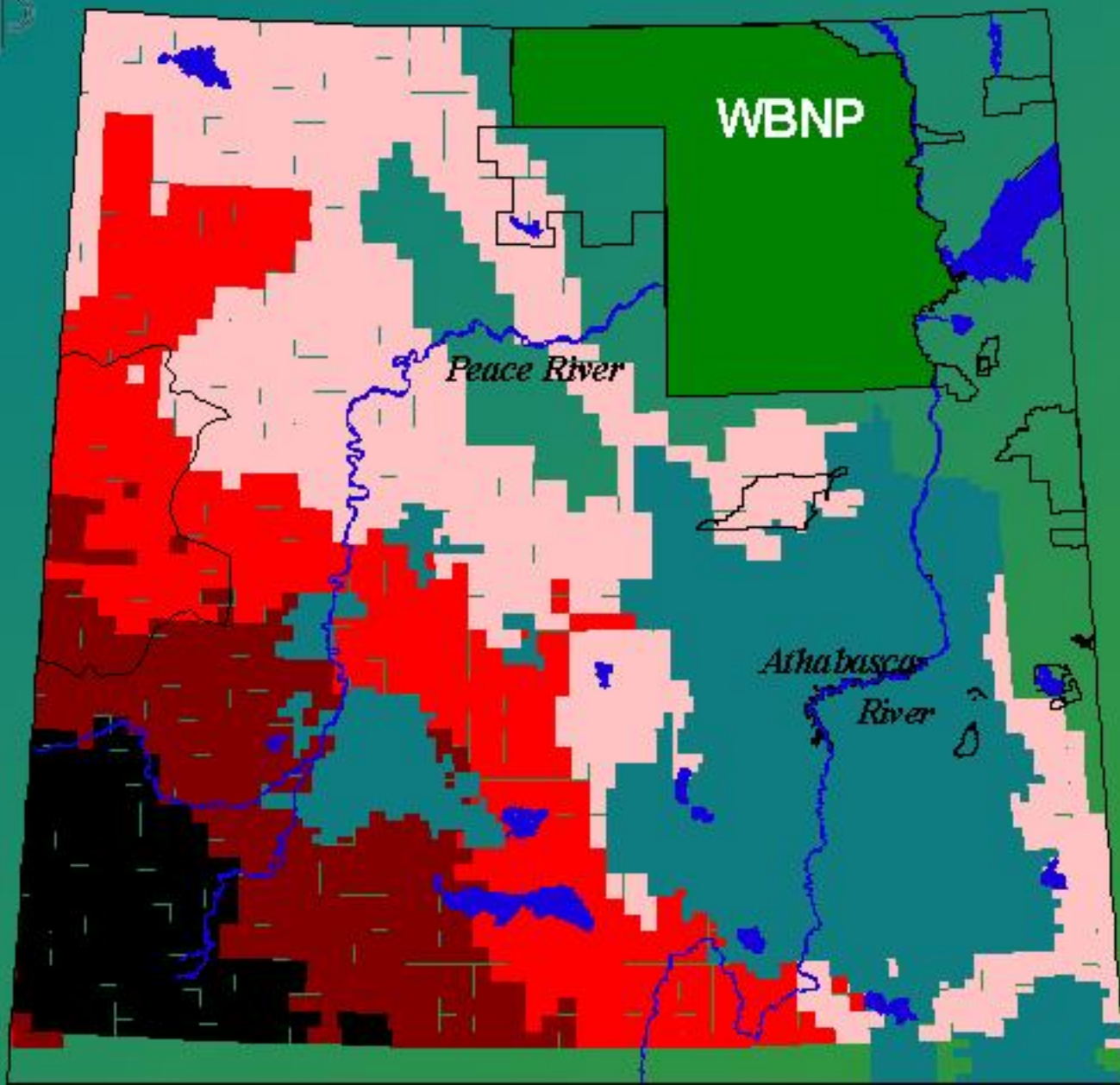
Total Dispositions and Planning Units



Running out of
options for a large
benchmark!

Seismic Footprint - (line width exaggerated)





WBNP

Peace River

Athabasca River

Gas Deposits



 Oil Sands

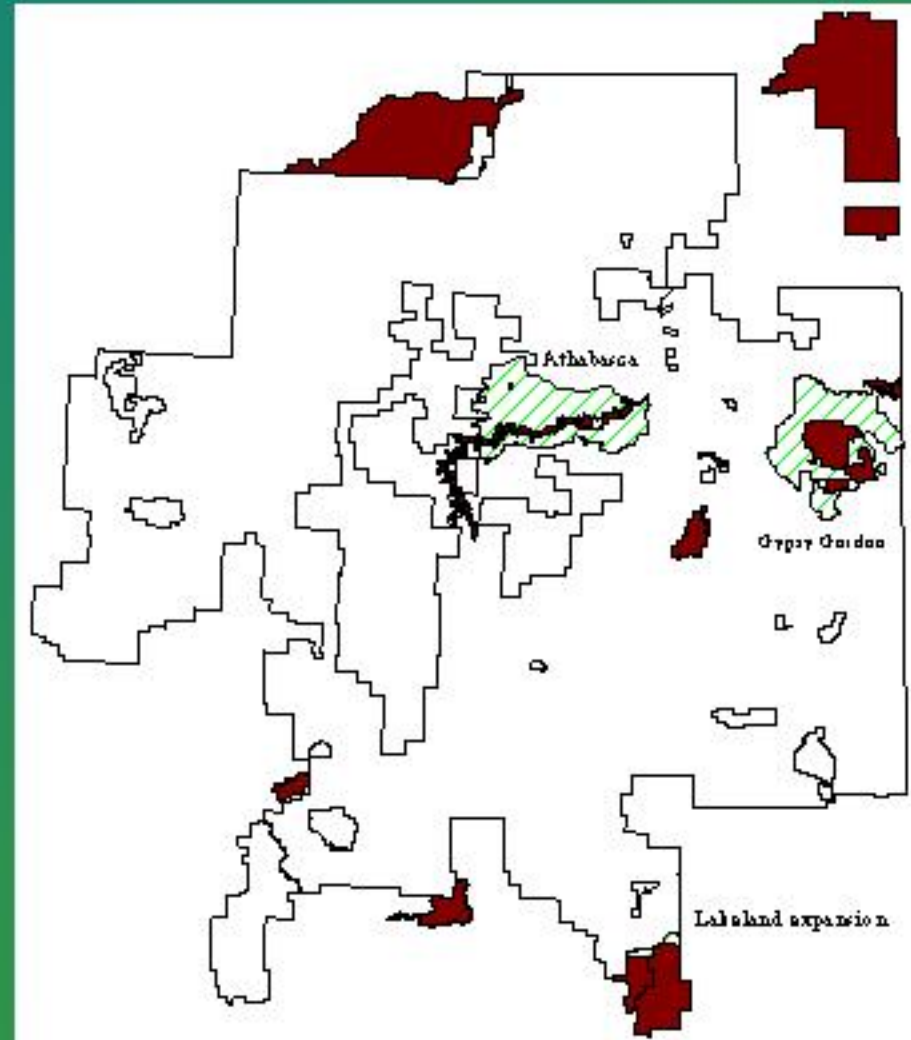
 AH Parks

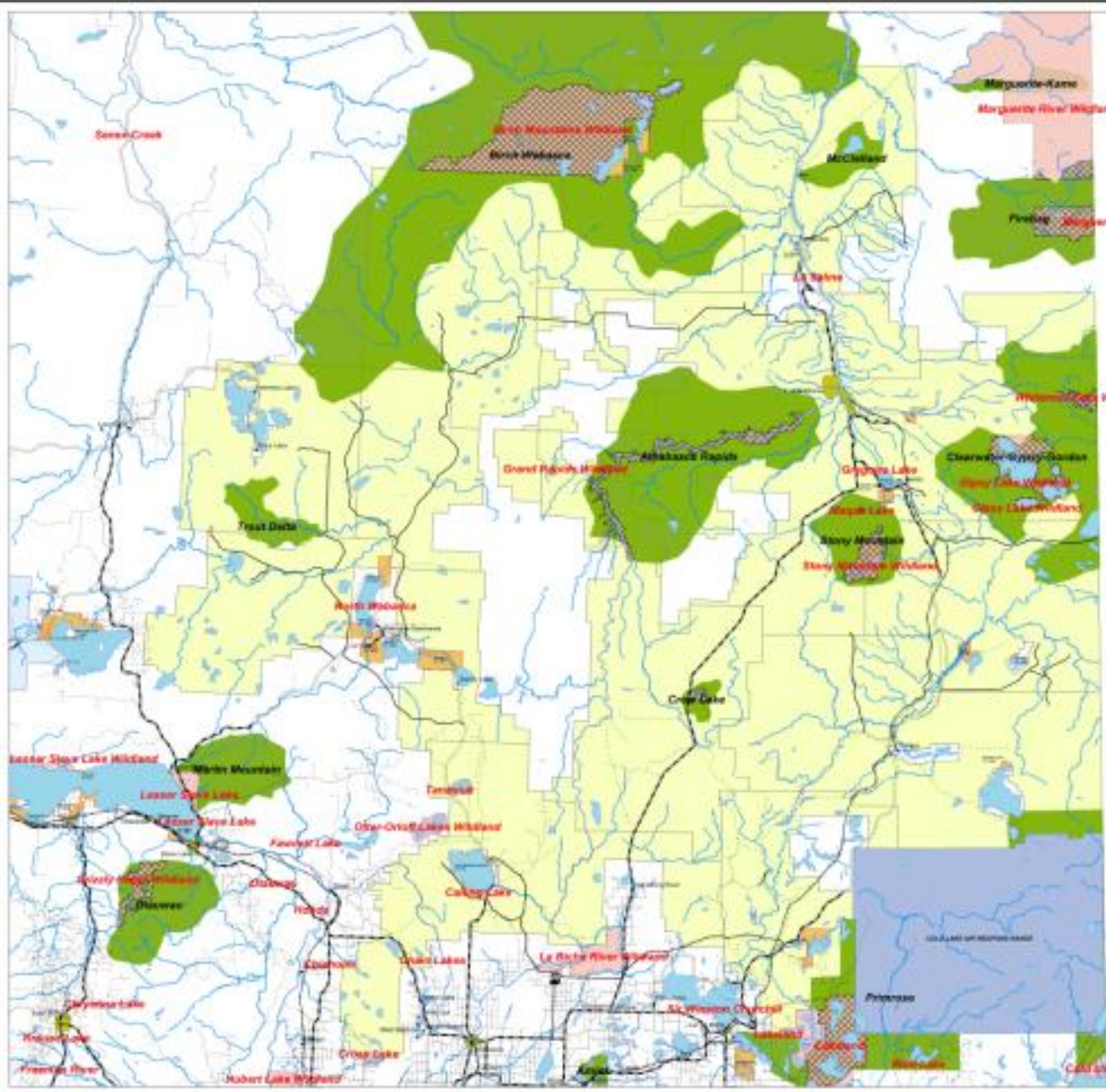


Proposed Ecological Benchmarks

- “Athabasca”
- “Gypsy - Gordon”
- “Lakeland expansion”

- No oil and gas leases and no/low petroleum potential in any of these benchmark sites





**Present Protected Areas in
Northeastern Alberta in Relation
to World Wildlife Fund (1998)
Priority Protection Areas**

(Map 1)

Legend

- Protected Areas
- WWF Top 50 Key Landscapes
- Areas of Overlap in Protection
- Métis Settlements
- Indian Reserves
- Military Reserves
- Village/Hamlet
- Cities, Towns and Urban Service Areas
- Paved Road
- Gravel Road
- Improved Road
- Unimproved Road
- Railway
- Alberta-Pacific Forest Management Units
- Alberta-Pacific Mill Site

NOTE: Areas of Overlap in protection are between presently protected areas and WWF key landscapes.

WWF Top 50 Key Landscapes was developed during WWF-Canada's Endangered Spaces Campaign to identify priority protection areas. The identification was based on efforts to delineate Environmentally Significant Areas by provincial ministries and candidate site nominations identified during Alberta's Special Places program.





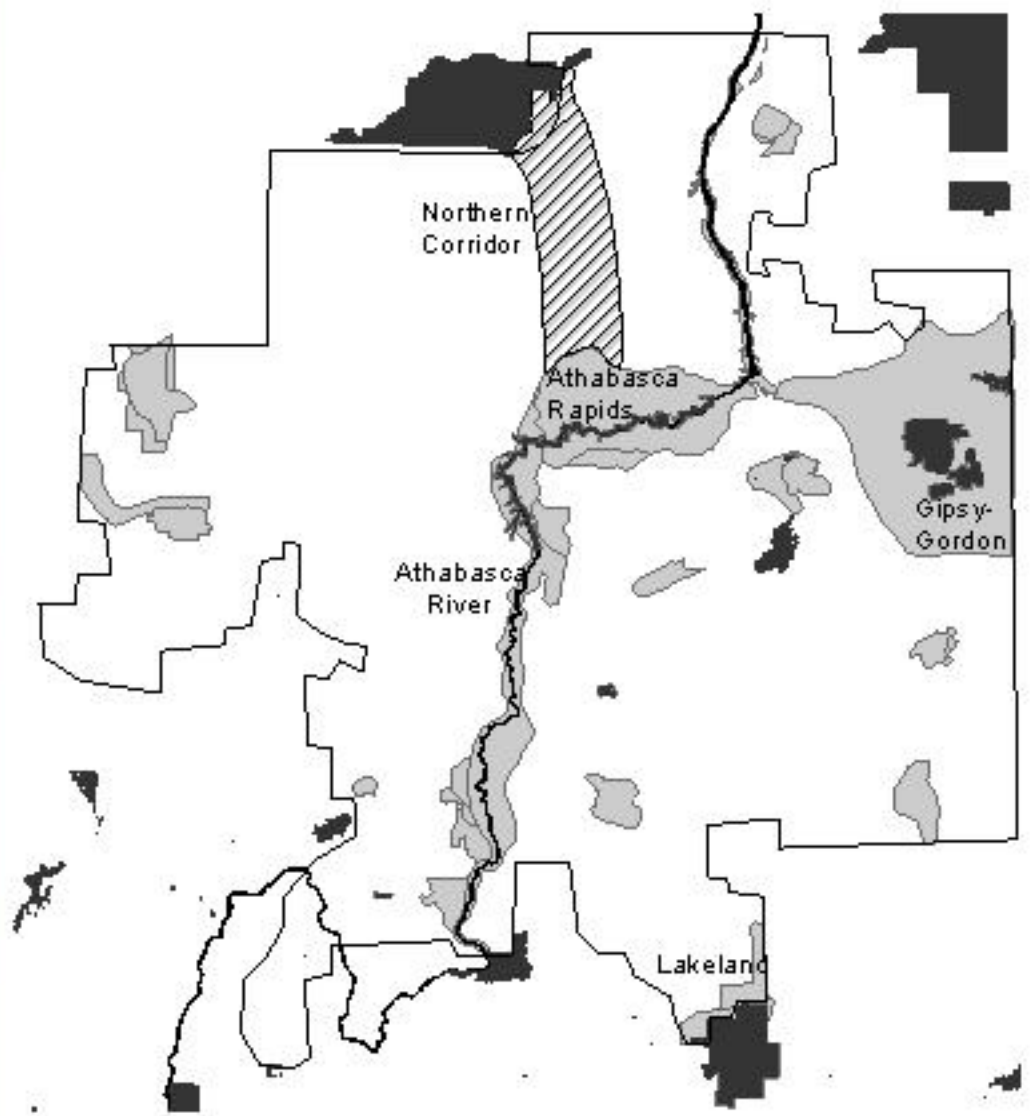
ENGO

“Conservation Optimum”

Large core areas

Highlights importance of the Athabasca River

Connectivity



Legend

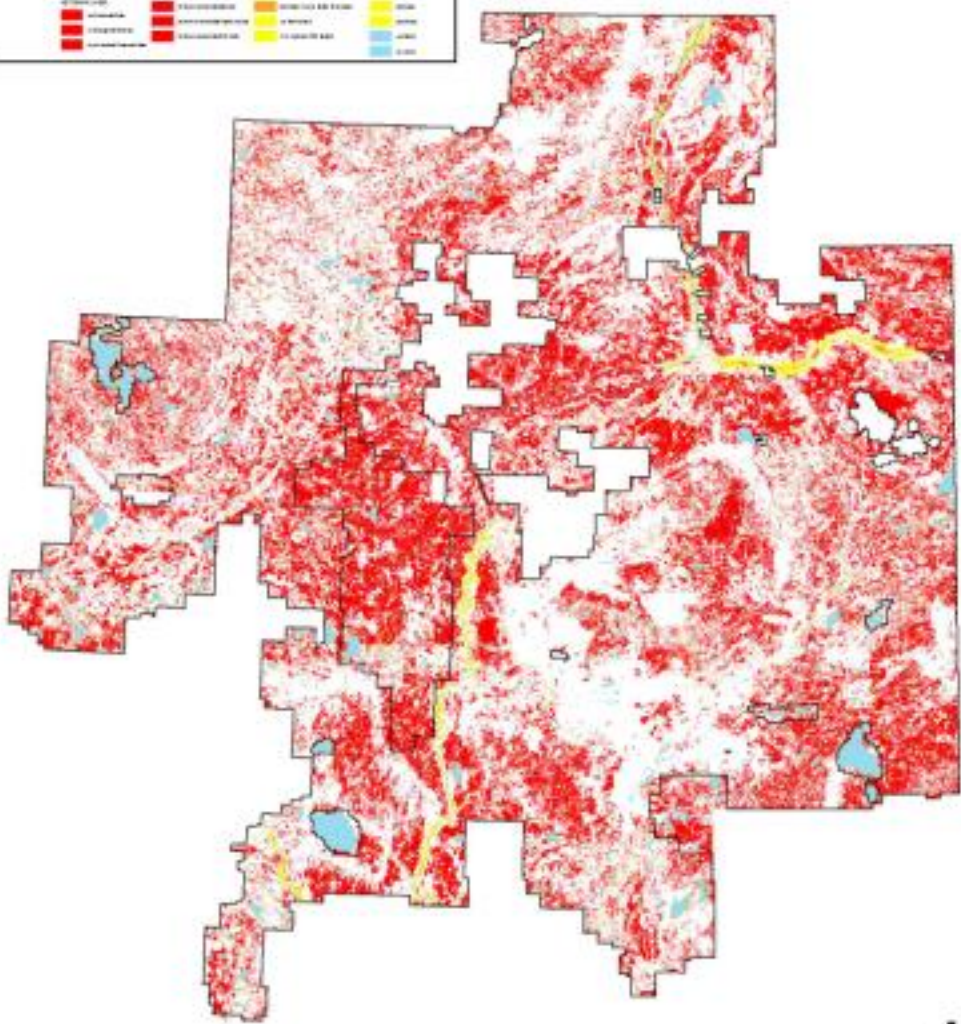
-  Existing parks
-  Conservation areas
-  Connecting corridor



Representative Samples or Conservation Reserves?

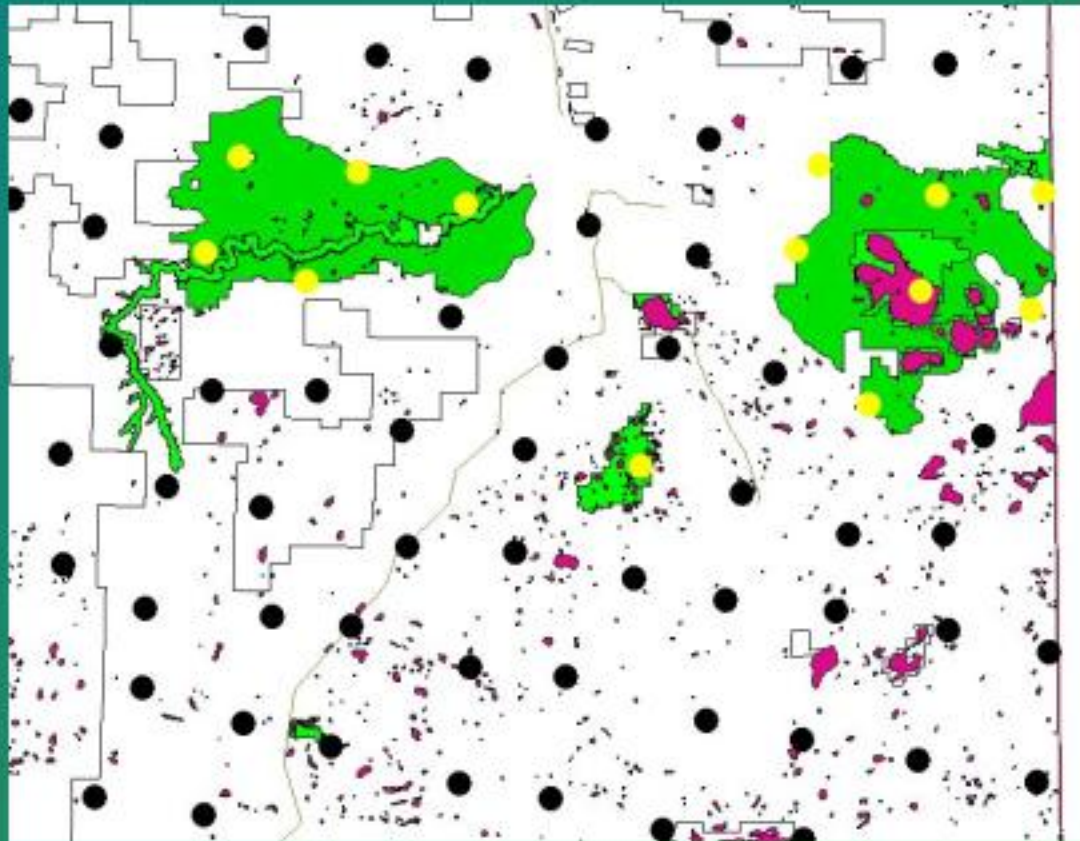


Non-Harvest Areas within the Al-Pac FMA Area





Deferral sites are reference areas for Biomonitoring





HCVF Improvements proposed in Timoney (2003)

- Greater consideration for attributes that perform critical ecological or societal functions (e.g. riparian zones) or render an area unique
- Focus on secure species that are characteristic and may be sensitive
- Coarse - filter landscape assessment (intactness)
- Less emphasis on individual species
- Cumulative impacts assessment incorporated into HCVF assessment



HCVF Challenges (AI-Pac perspective)

- Lack of spatial data
- Focus on individual species challenging
- Defining critical and outstanding?
- Weak link between representation assessment results and HCVF
- Development of appropriate management strategies will be challenging
- Have not completed cultural HCVF assessment
- Precautionary Principle Paralysis



AI-Pac Proposed Improvements

- Coarse – Filter focus
- Better link between representation assessment and HCVF
- Support for long term and comprehensive monitoring is important
- National level and consistent designation of critical and/or outstanding

Thank you!

Questions?

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