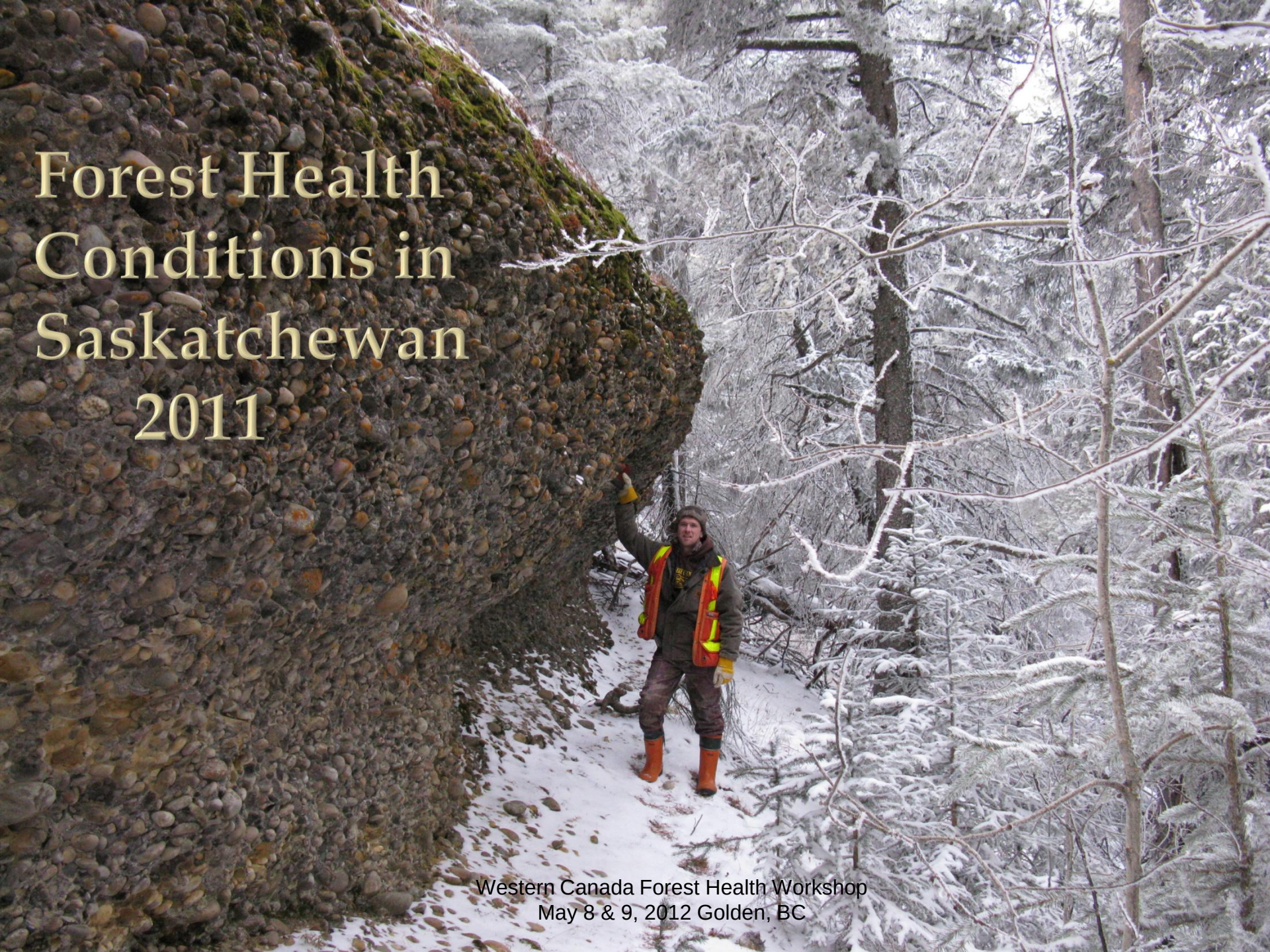


A photograph of a person standing in a snowy forest next to a large, moss-covered log. The person is wearing a dark jacket, a high-visibility orange vest, orange pants, and orange boots. They are pointing towards the log. The forest is covered in snow, and the trees are bare and snow-laden. The log is covered in moss and lichen, indicating a healthy forest environment.

Forest Health Conditions in Saskatchewan 2011

Western Canada Forest Health Workshop
May 8 & 9, 2012 Golden, BC

Forest health concerns in Saskatchewan: Current and Future

Defoliators

- **Spruce budworm**
(*Choristoneura fumiferana*)
- **Jack pine budworm**
(*Choristoneura pinus pinus*)
- **Forest tent caterpillar**
(*Malacosoma disstria*)
- **Large aspen tortrix**
(*Choristoneura conflictana*)
- **Gypsy Moth**
(*Lymantria dispar*)

Beetles

-  **Mountain Pine beetle**
(*Dendroctonus ponderosae*)
-  **Banded elm Bark Beetle**
(*Scolytus schevyrewi*)
-  **June Beetle**
(*Phyllophaga Spp*)
-  **Larch beetle**
(*Dendroctonus simplex*)

Disease / other

- ❖ **Dutch elm disease**
(*Ophiostoma novo-ulmi*)
- ❖ **Dwarf mistletoe**
(*Arceuthobium americanum*)
- ❖ **Exotics / Invasives**
- ❖ **Abiotic - Wind**

Outline



Mountain Pine Beetle



General Forest Health

(focus on Eastern Spruce Budworm)



Dutch Elm Disease



Summary



MPB - SK Response to Threat

1. Regulation
 - FRMA and Regulations
 - Restriction Order (2002)
2. **Field Operations**
 - **Aerial / Ground Surveys - CHIPP, Boreal JP**
3. Communication / Education
4. Strategic Planning
 - National Forest Pest Strategy
 - Provincial Strategy (incl. Mountain Pine Beetle Strategy)
 - Forest Management Planning Process
insect & Disease (industry)
5. Research





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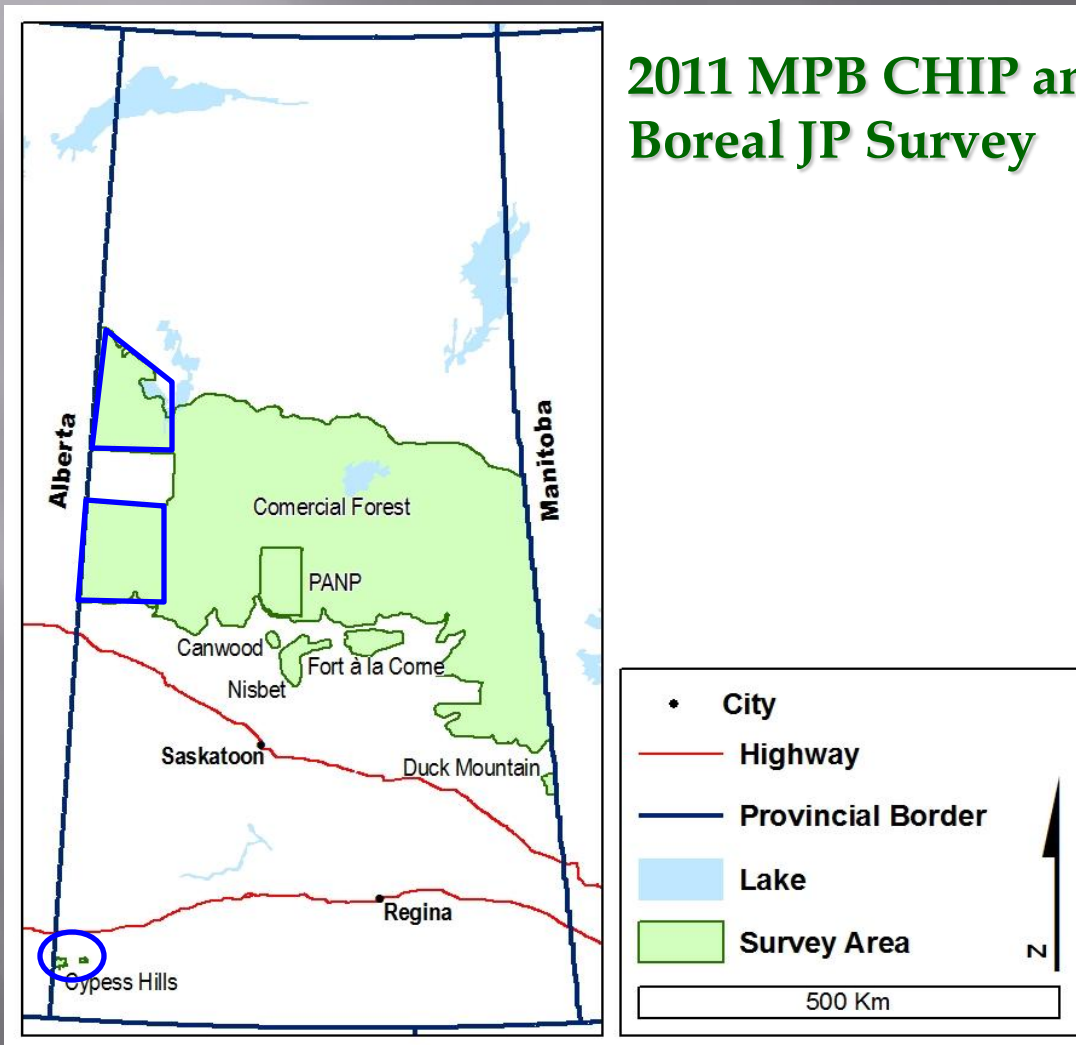


2. Field Operations

- Aerial surveys
- Ground surveys
- Baited trees
- Tree removals



Survey Areas for MPB in SK



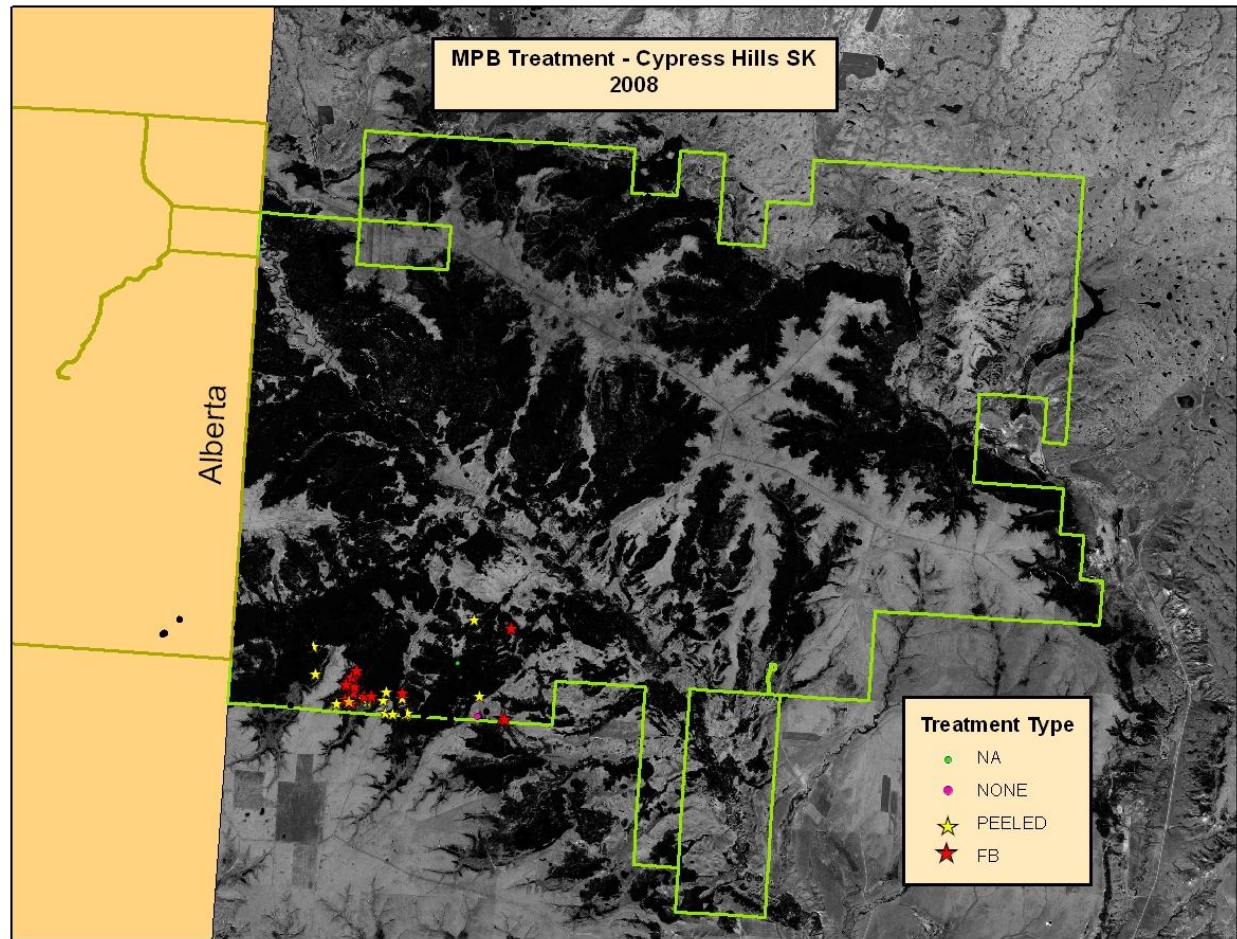
Provincial Surveillance CYPRESS HILLS



2008

Treatments

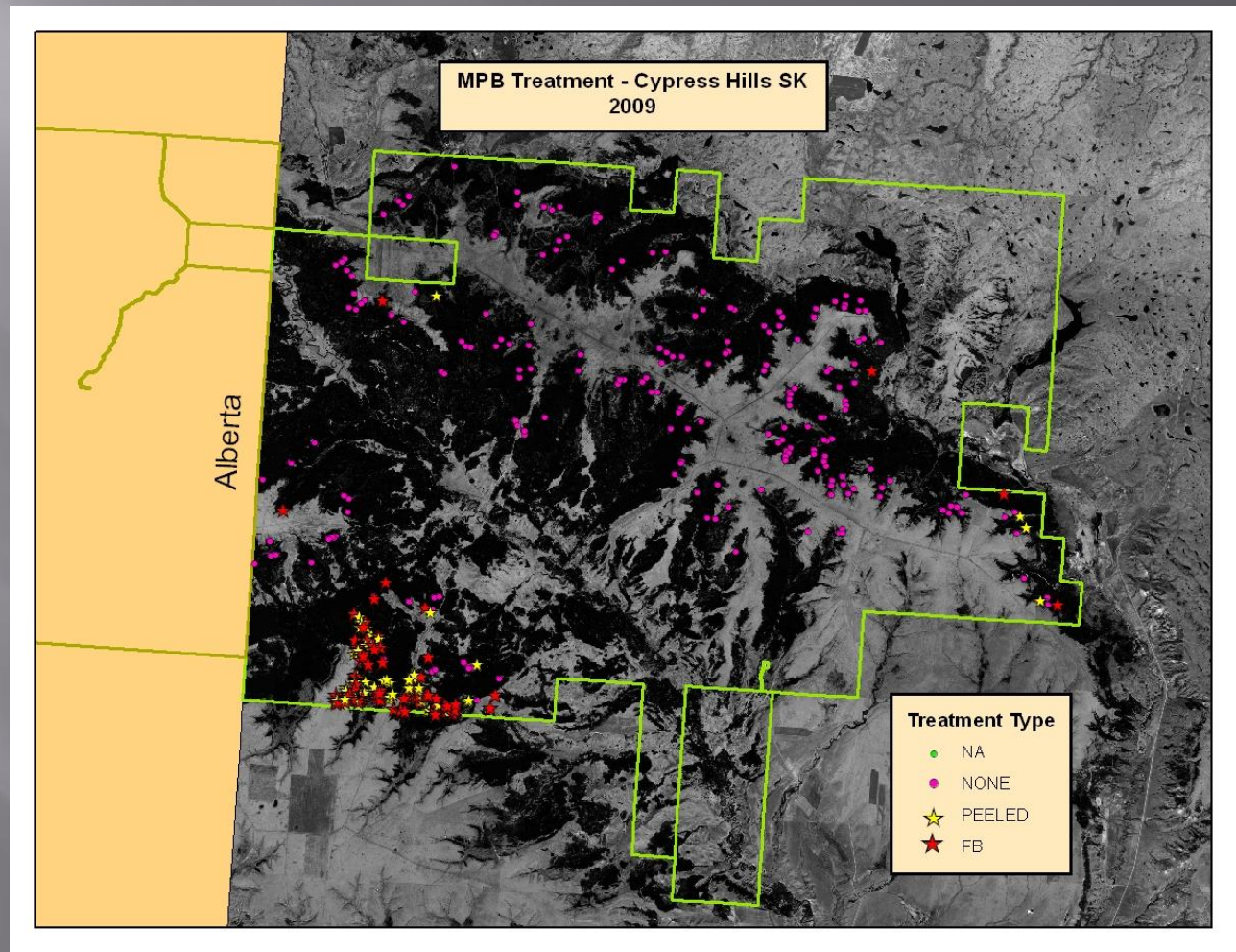
- 15 F&B



2009

Treatments

- 133 F&B

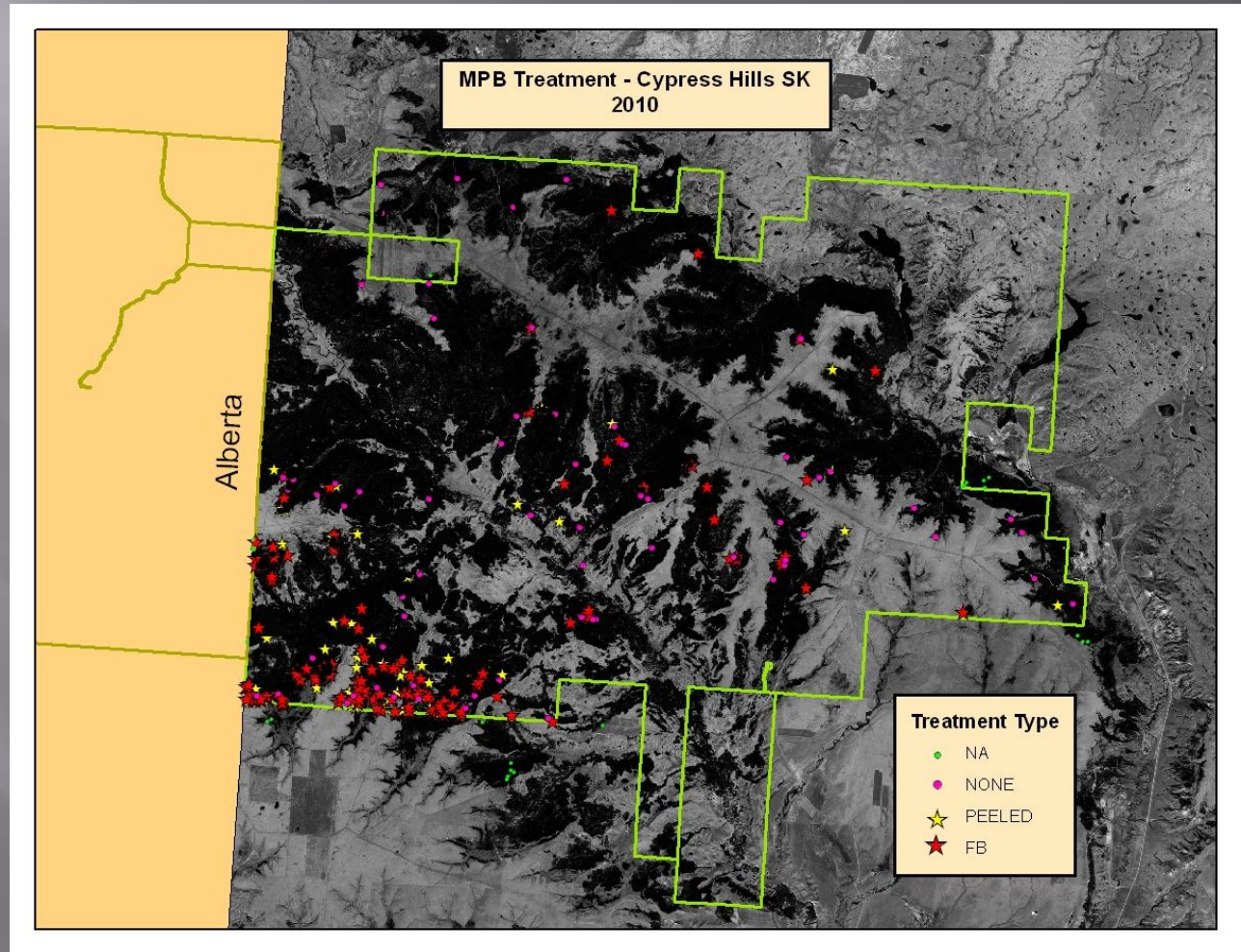


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BC

2010

Treatments

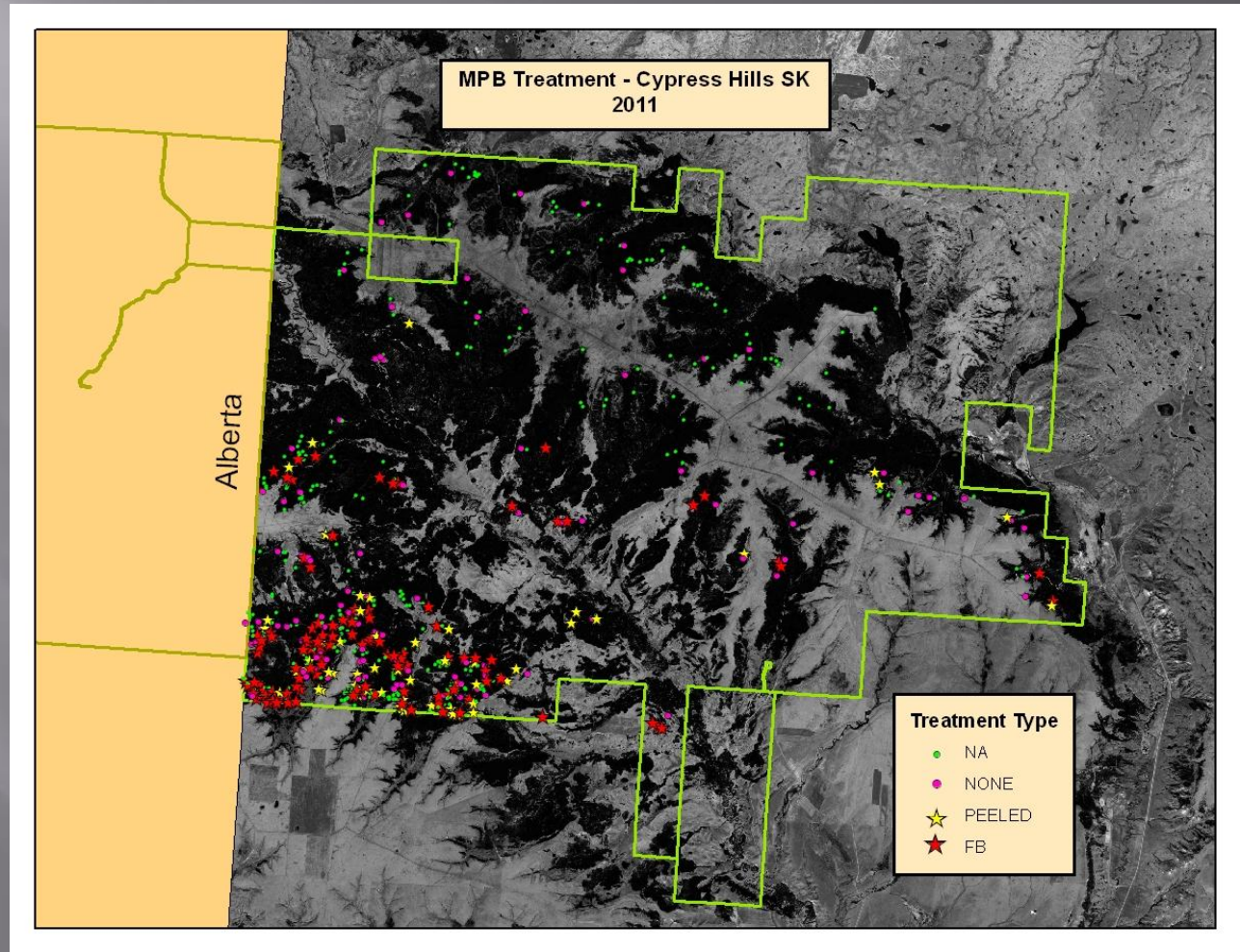
- 190 F&B



2011

Treatments

- 269 F&B

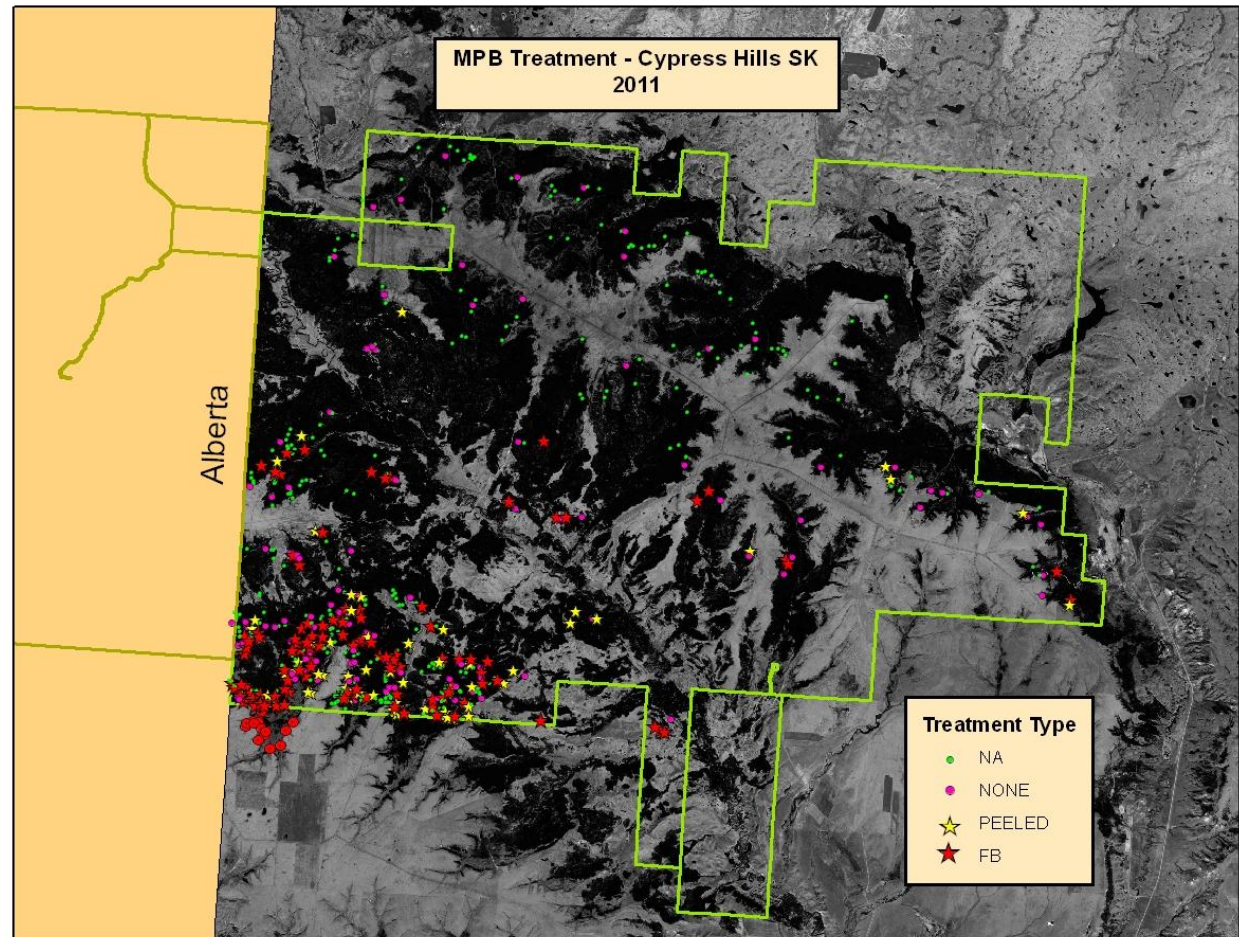


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BC

2011

Treatments

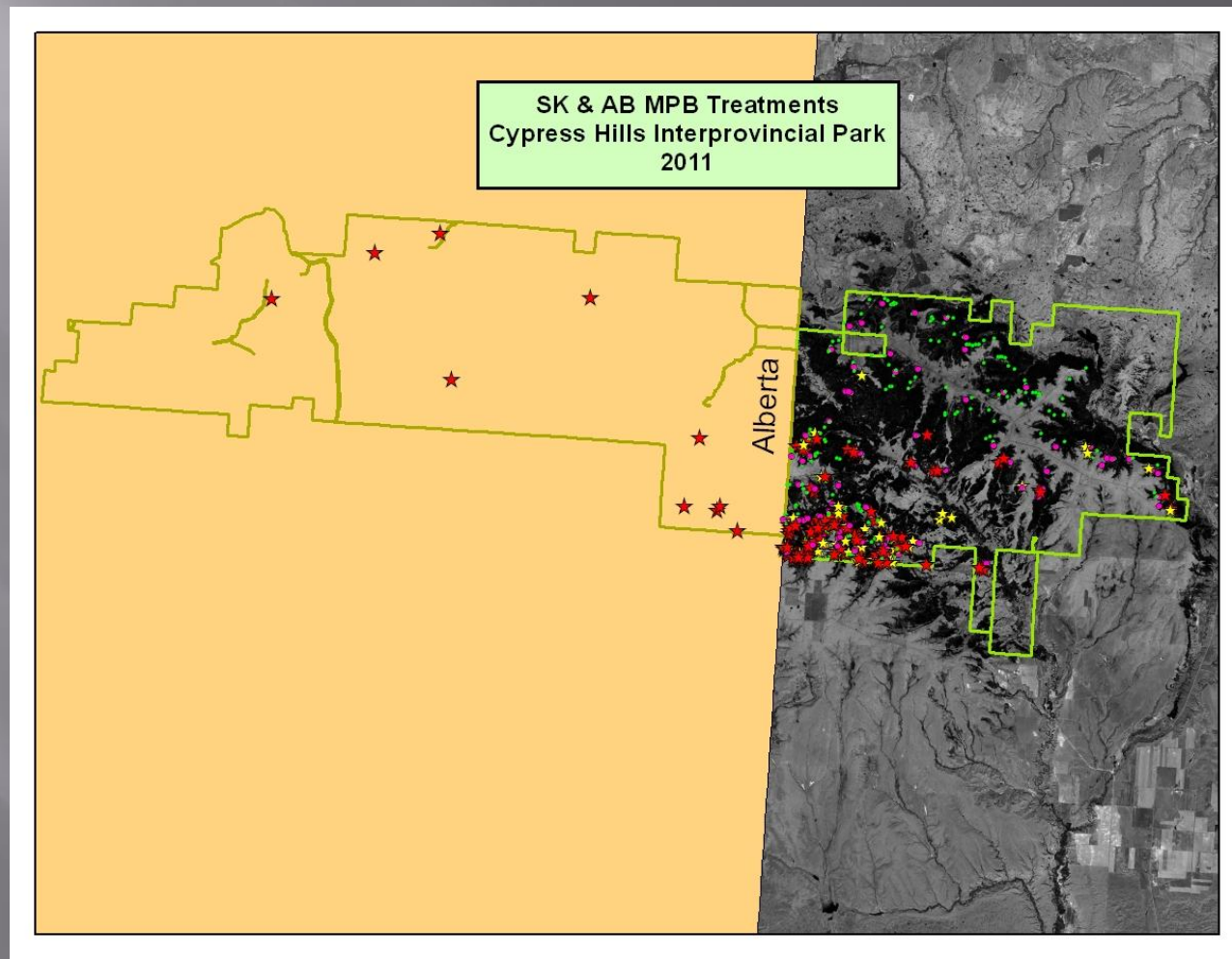
- 269 F&B
- 17 trees Not Burnt (Ag&Food)



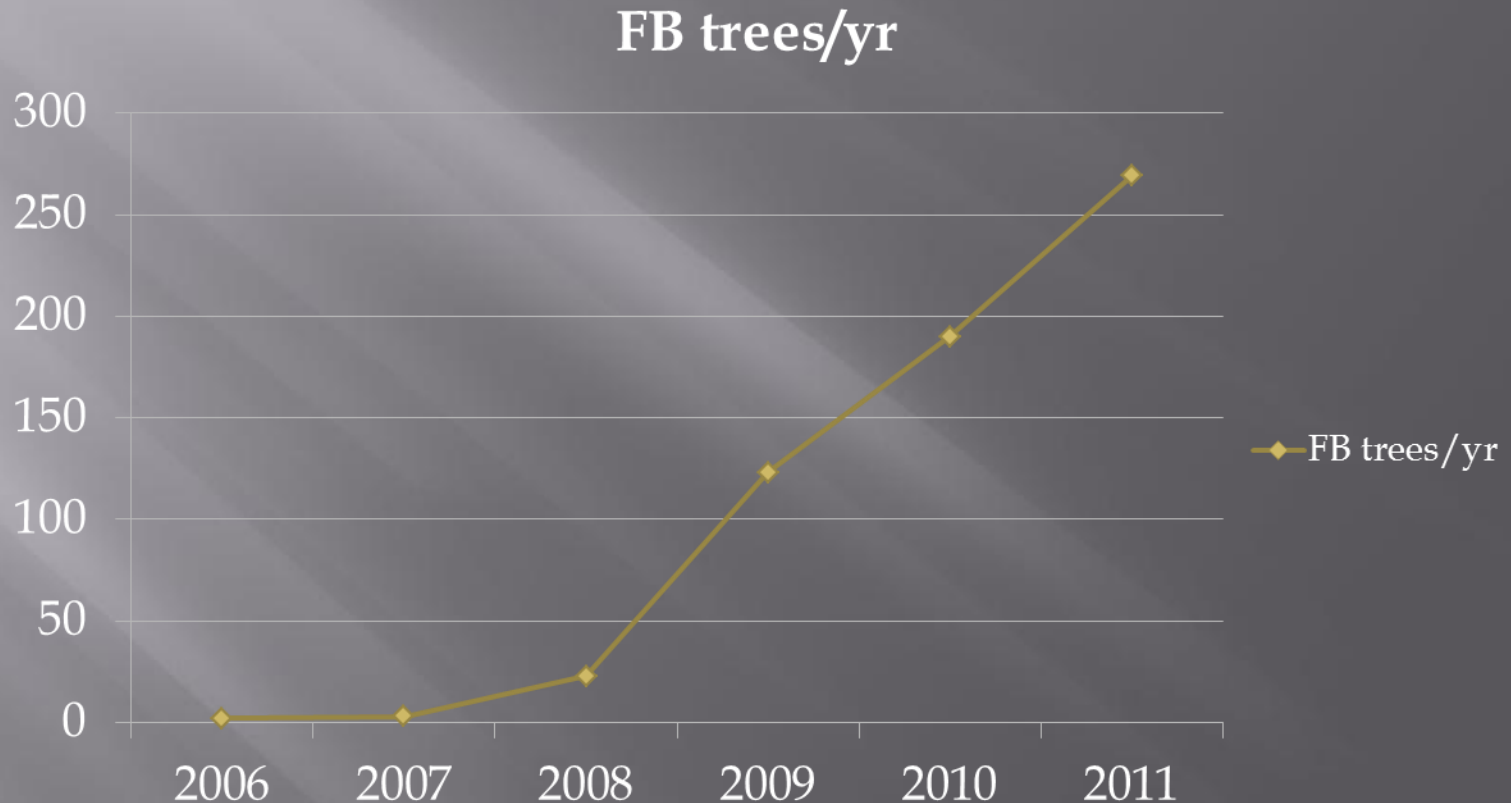
2011 - CHIP Fall and Burn Treatments SK & AB

Treatments

- 269 F&B SK
- 35 F&B AB



Fall and Burn Trees Removed in West Block since 2006



Aerial / Ground Survey Results Cypress Hills West Block - 2011

Summary:

- Fall & Burn trees in the increased 42% in 2011 (269) down slightly from the 54% increase in 2010 (173)
- All fall & burn sites treated in the Park in 2011

Areas to improve for 2012:

- Complete a pine inventory outside of the park boundary
- Continue educating stakeholders of the beetle status
- Share our inventory and aerial survey data to enhance ground surveys
- Pass along site condition reports to FN stakeholders so they can plan / alter treatment schedules
- Expand the provincial scope of the surveys / treatment to all adjacent AG & food lease lands with pine

Aerial / Ground Survey Results Boreal Jackpine-2011

Summary:

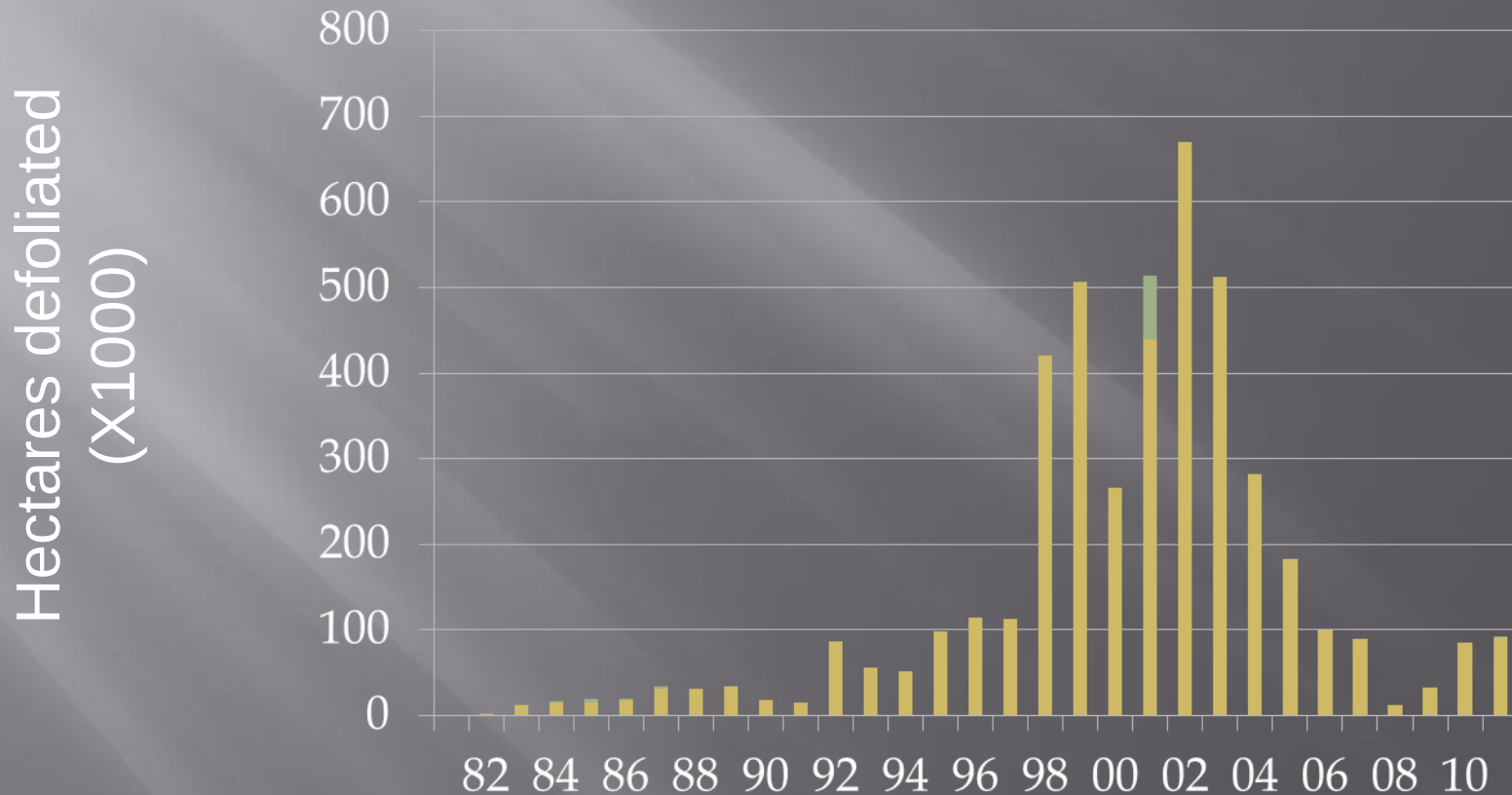
- Approximately 70 hours of helicopter time was used during boreal surveys
- 1,173 red / fader sites (1,845 trees) were mapped in 2011 within the three boreal survey areas
- 265 sites were ground checked (22.6%)
- NO MPB FOUND in 2011, on any of the ground checked sites including our fifteen Baited sites, and none to date in the SK boreal jackpine
- \$150,000 spent in AB to manage infected pine on the “leading edge” of highest risk to SK
- Preparations were made to implement, to assist AB in Dispersal Bait Surveys if required

Areas for Improvement in 2012:

- Expand on our capacity to remove infected pine of high risk to SK in AB
- Expand SK Dispersal Bait survey network
- Acquire training in survey techniques used in AB to align methodologies
- Enlist help from Wildfire Management Br. for improving helicopter access for long term survey sites

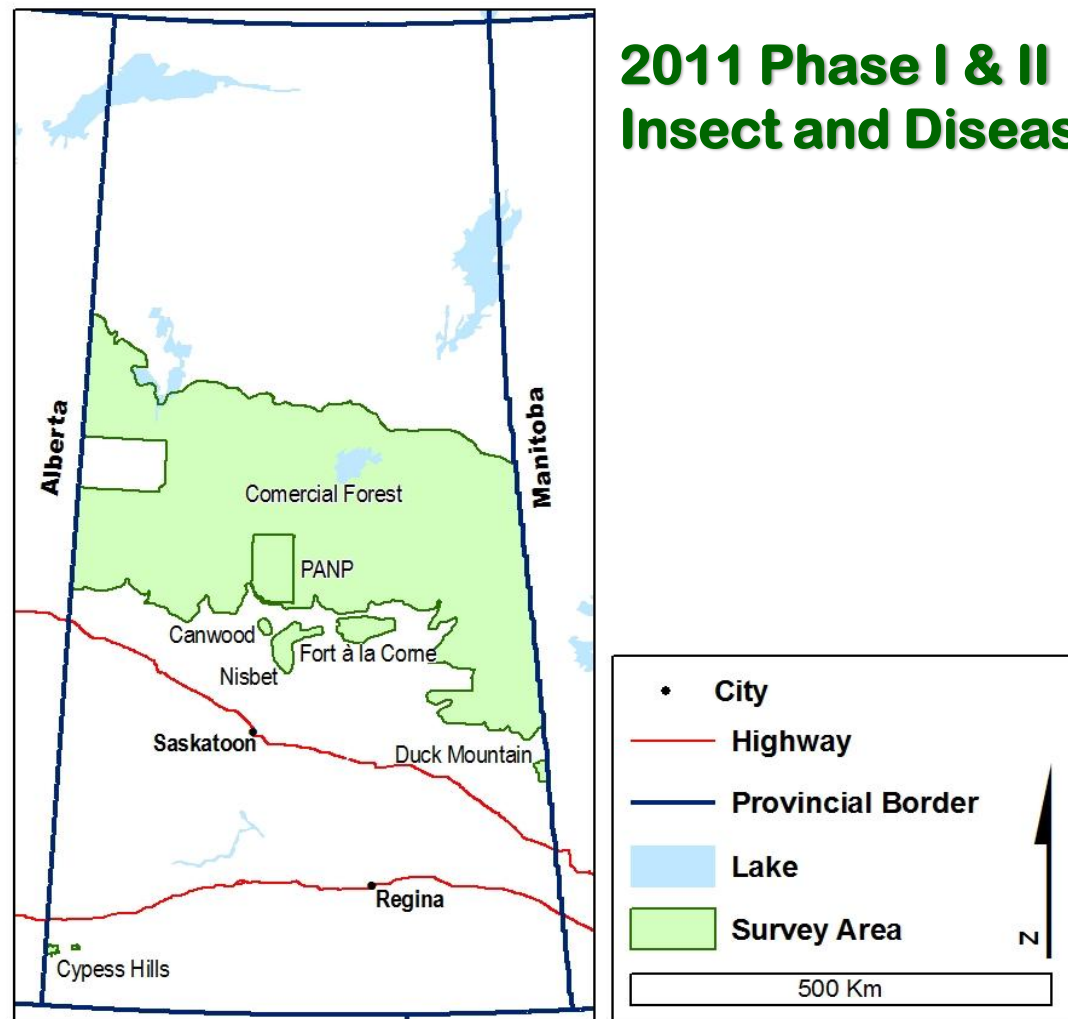
❖ Spruce budworm – history of the last outbreak in Saskatchewan

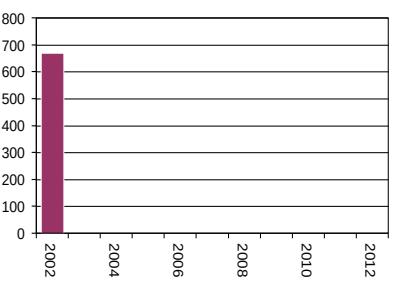
Total provincial defoliation 1980-2010



General Forest Health Provincial Surveillance

2011 Phase I & II Insect and Disease Survey

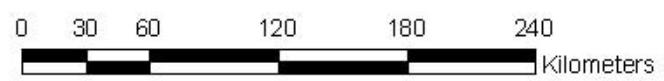
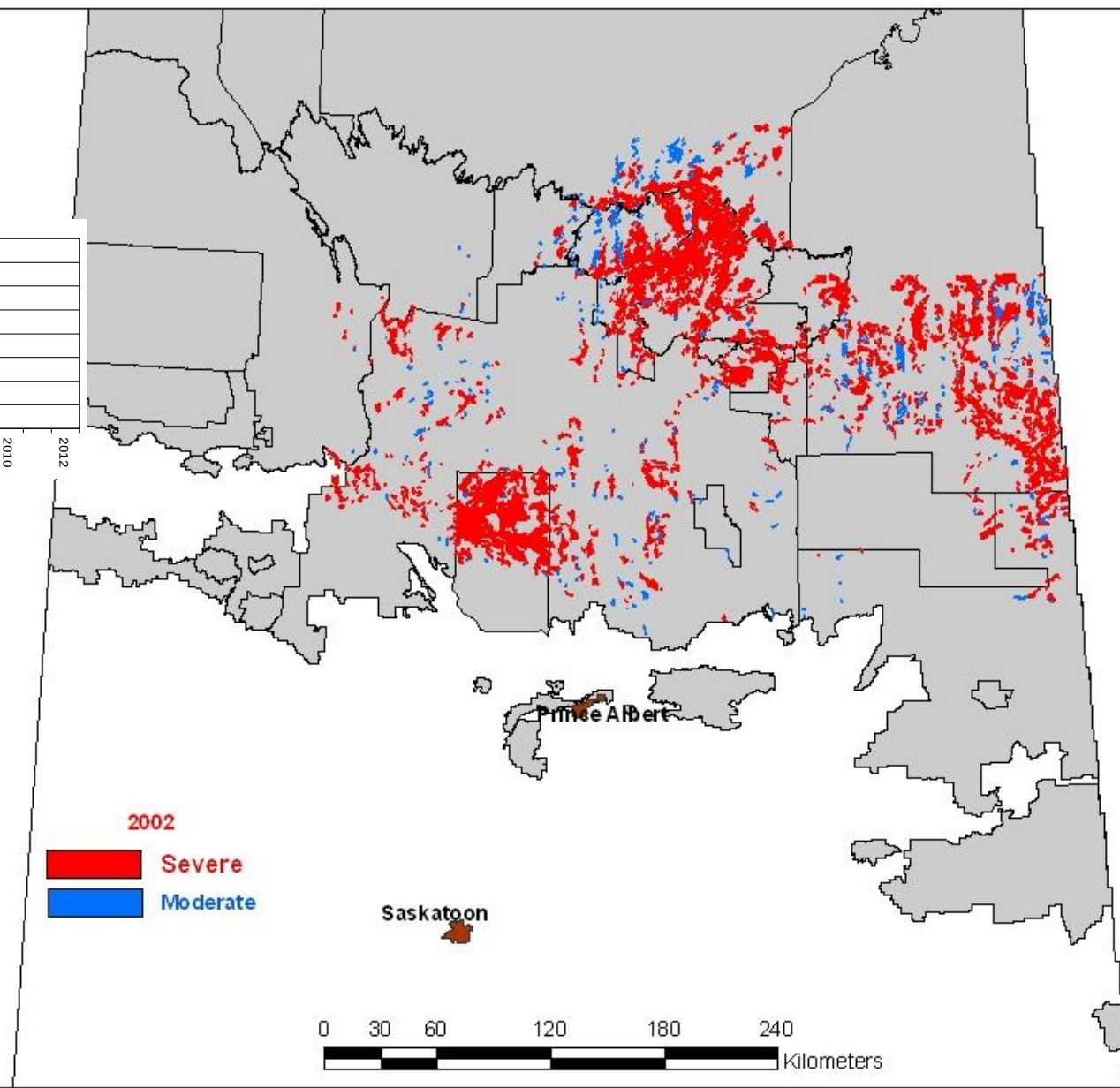


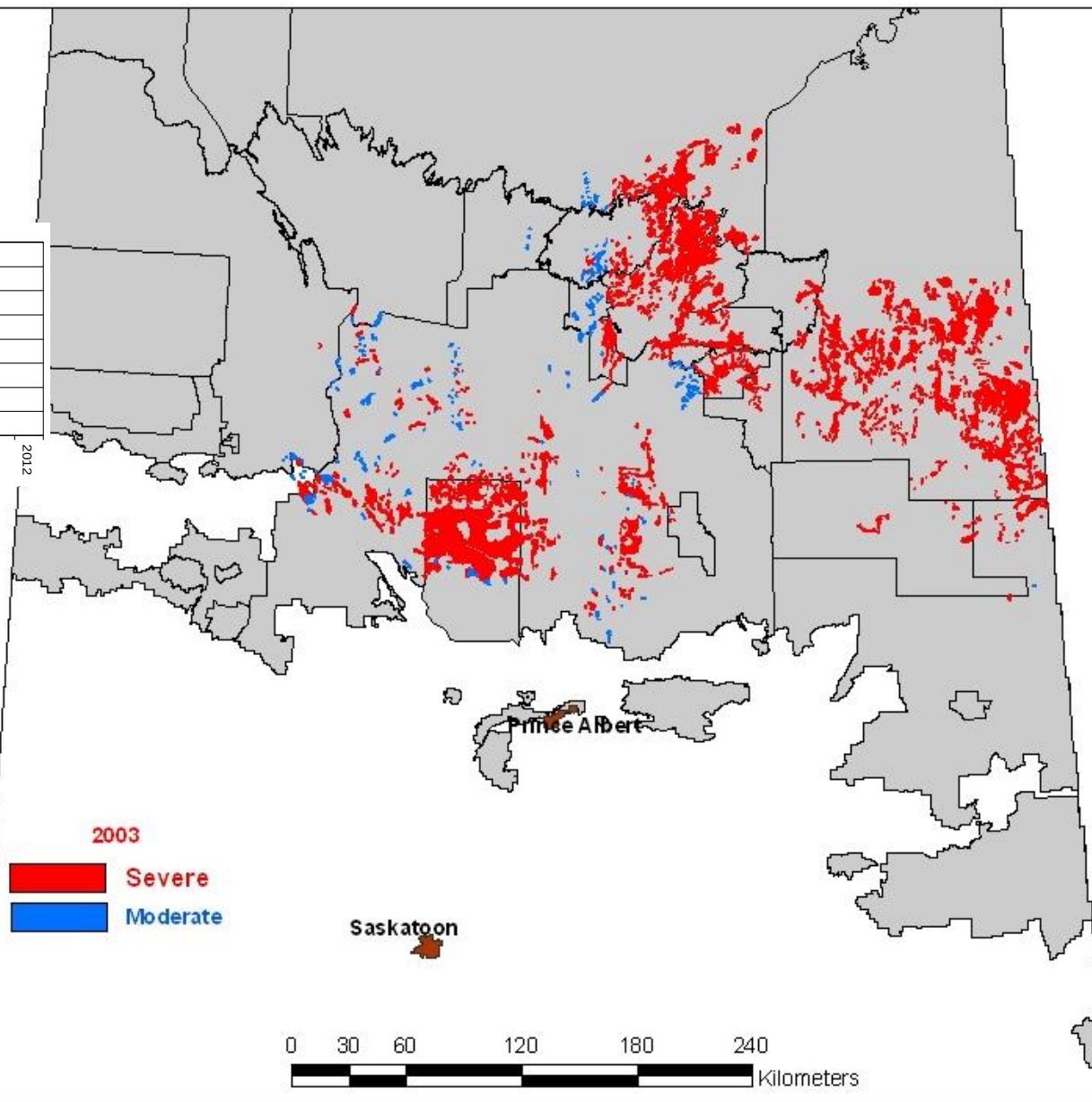
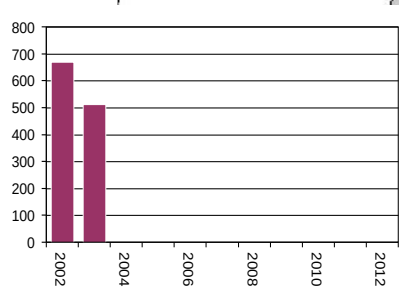


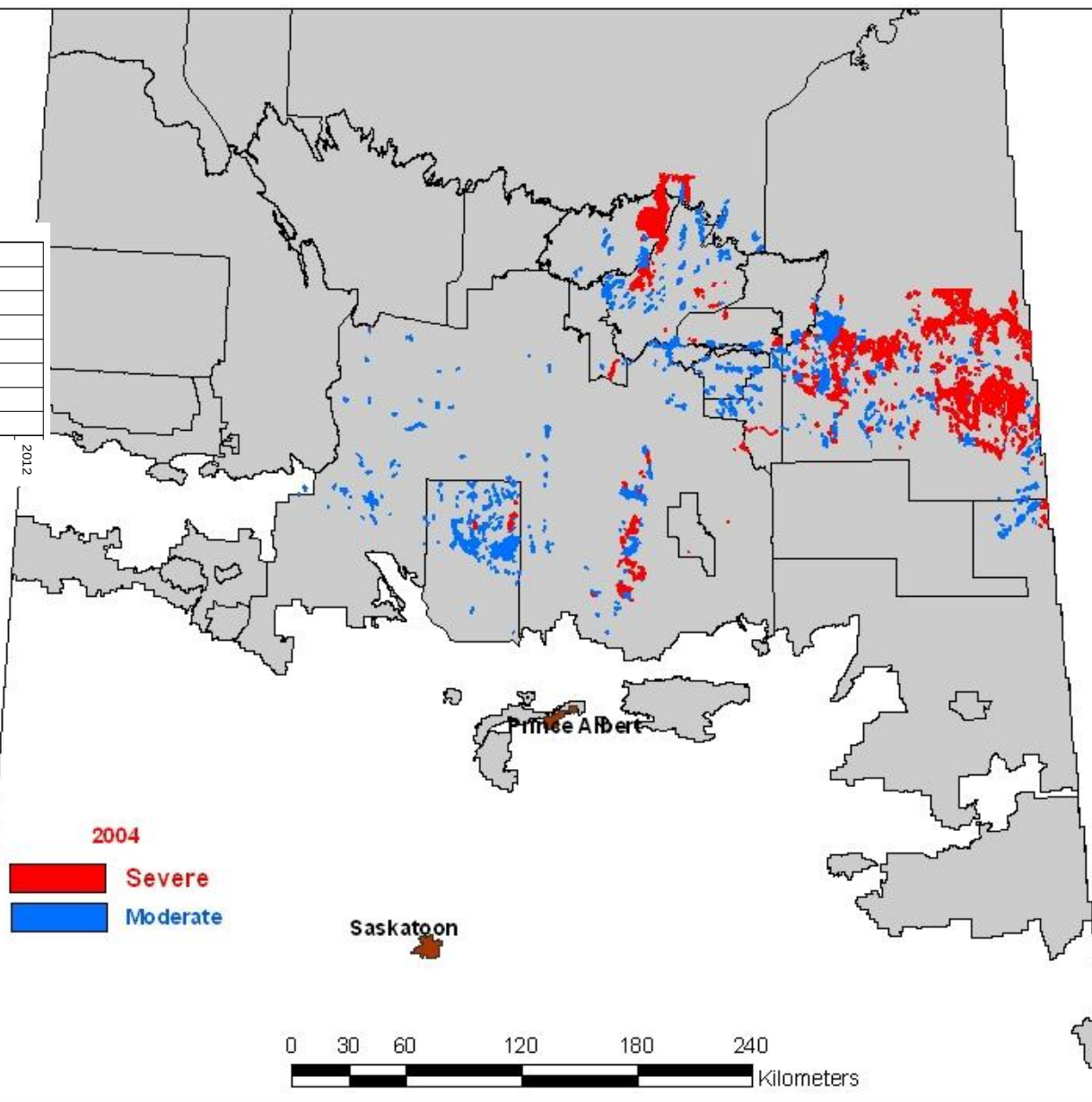
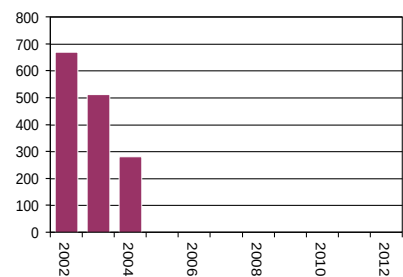
2002

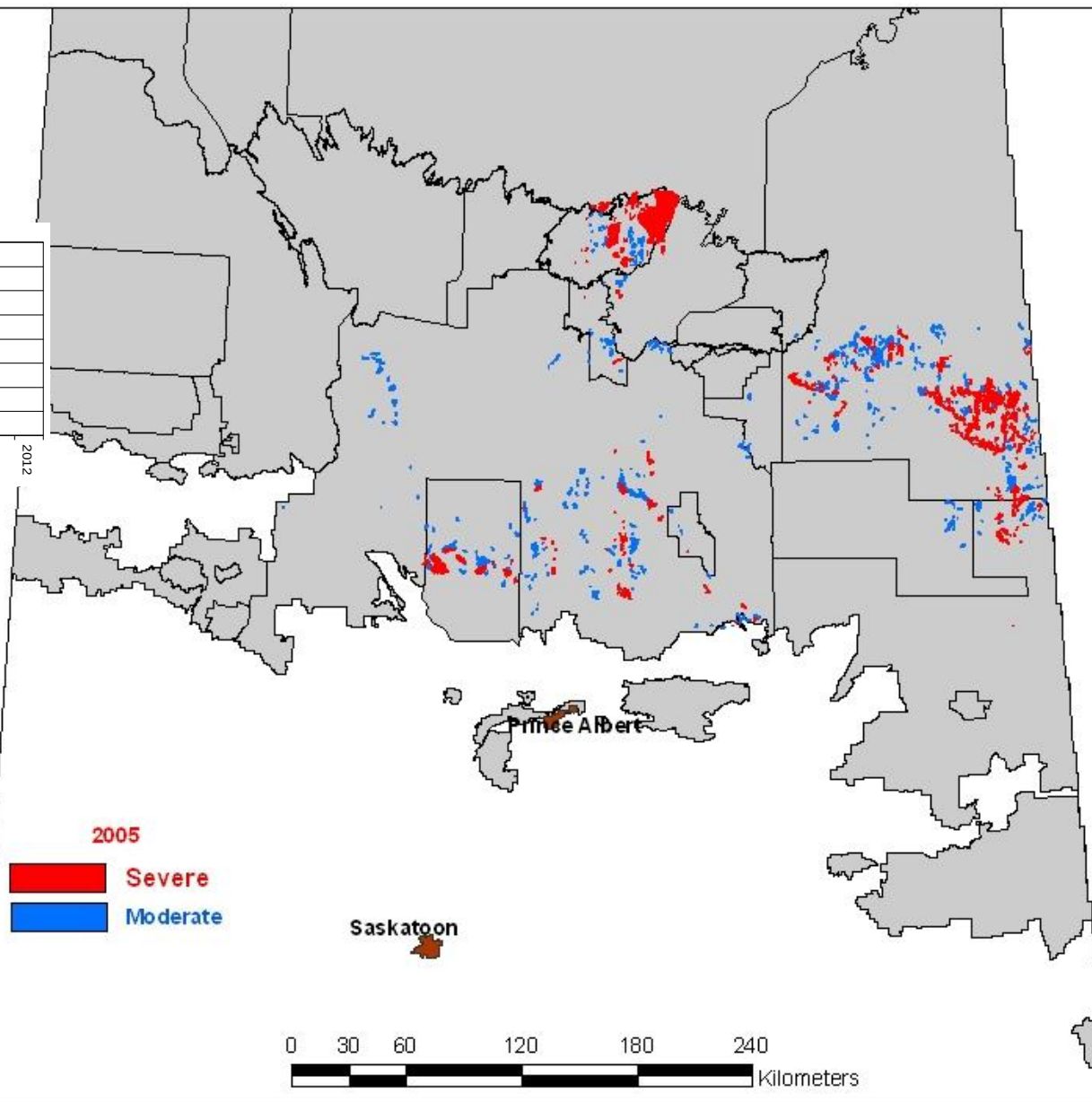
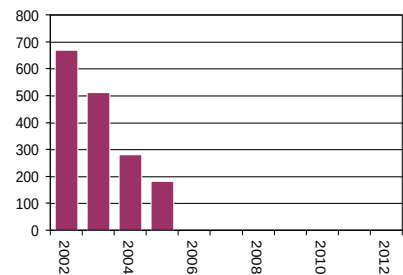
 Severe

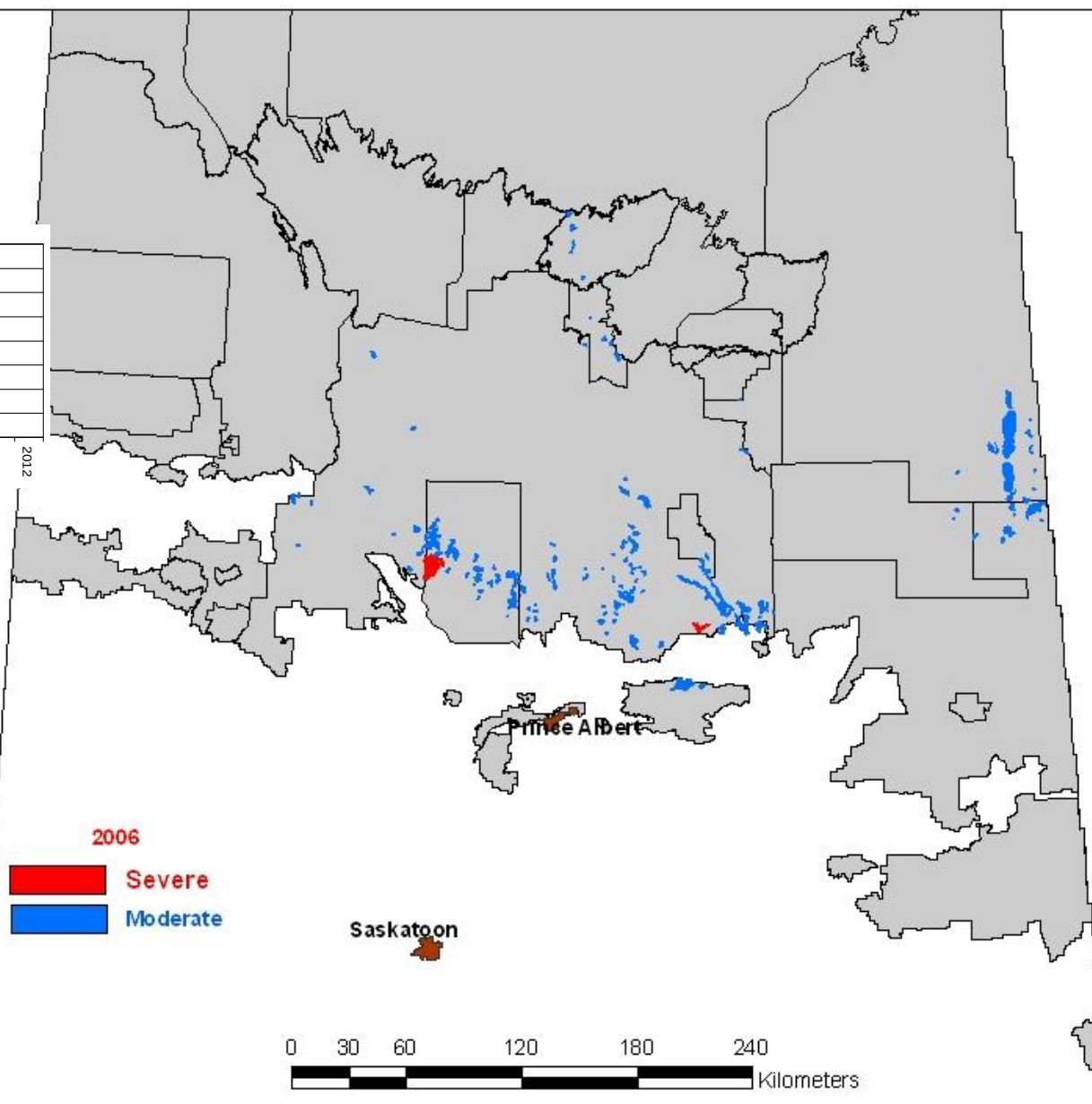
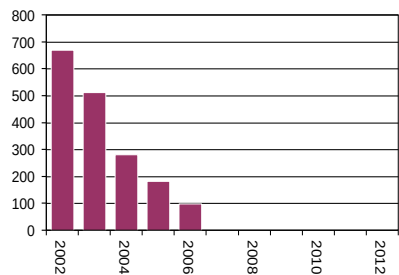
 Moderate

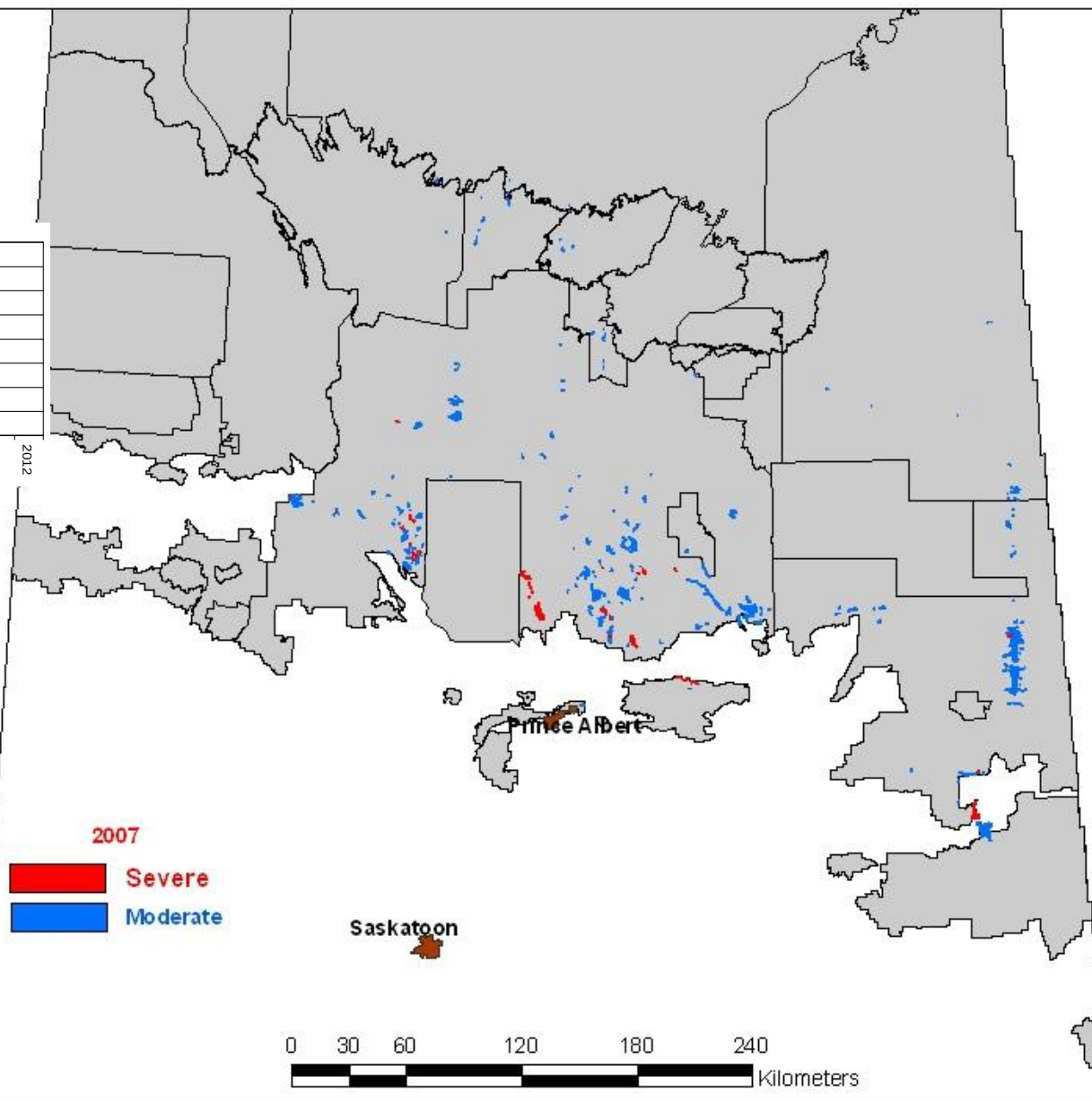
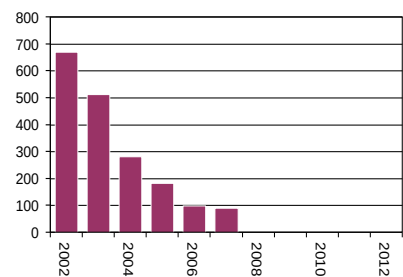


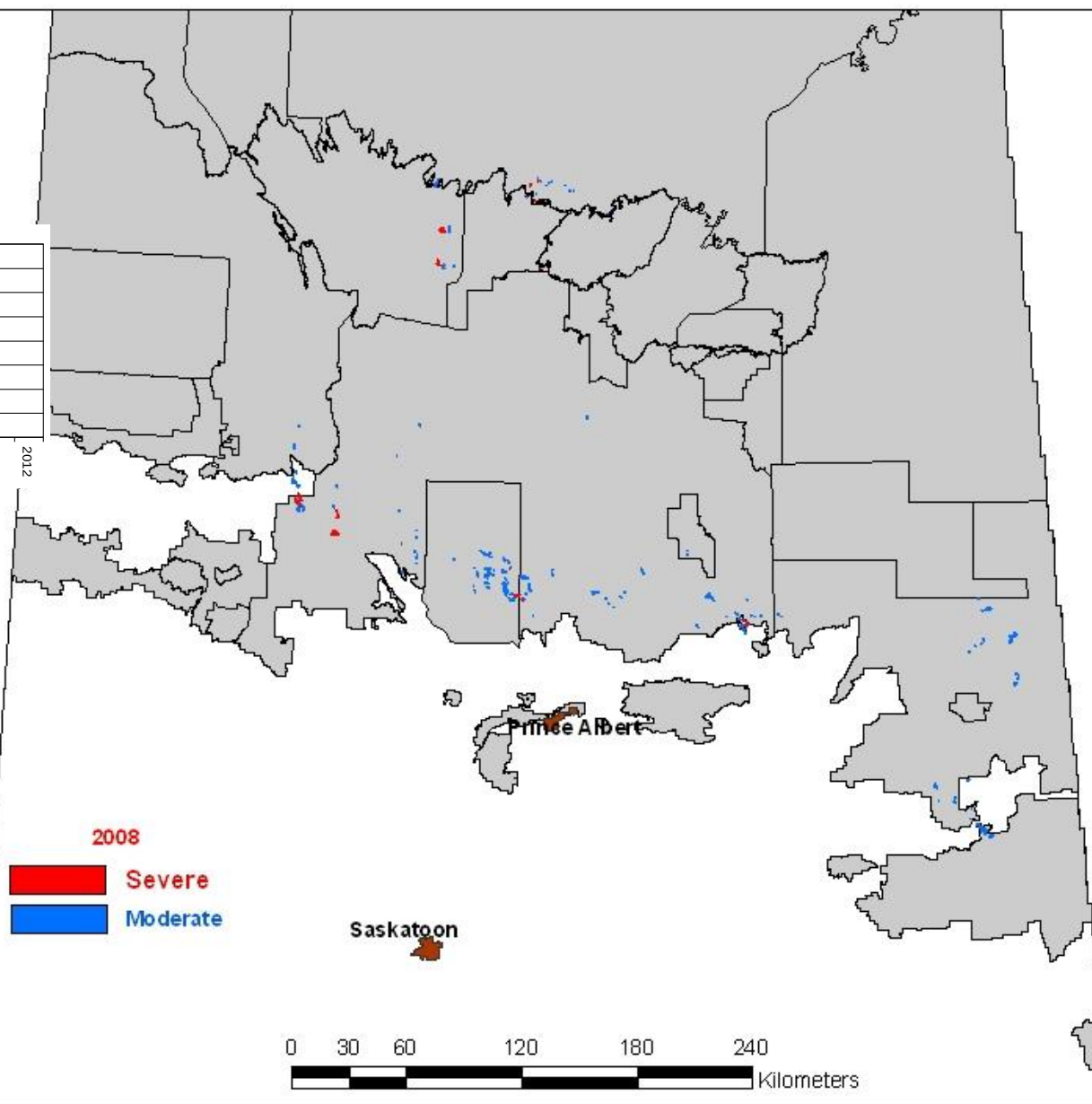
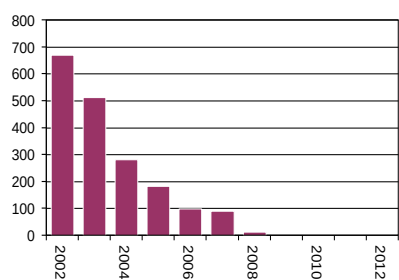


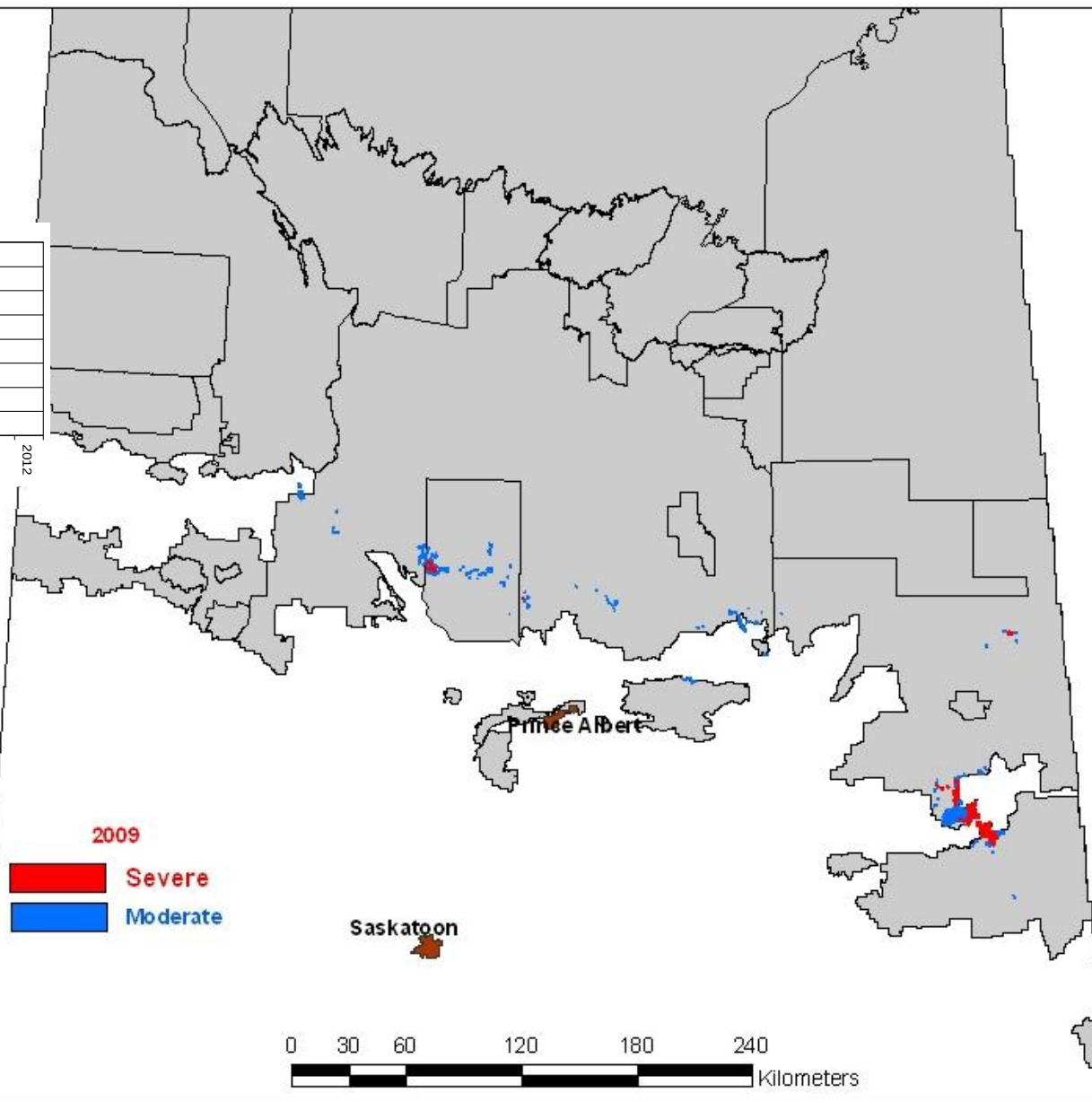
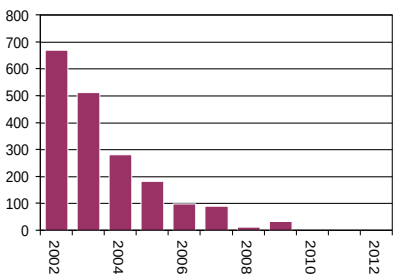


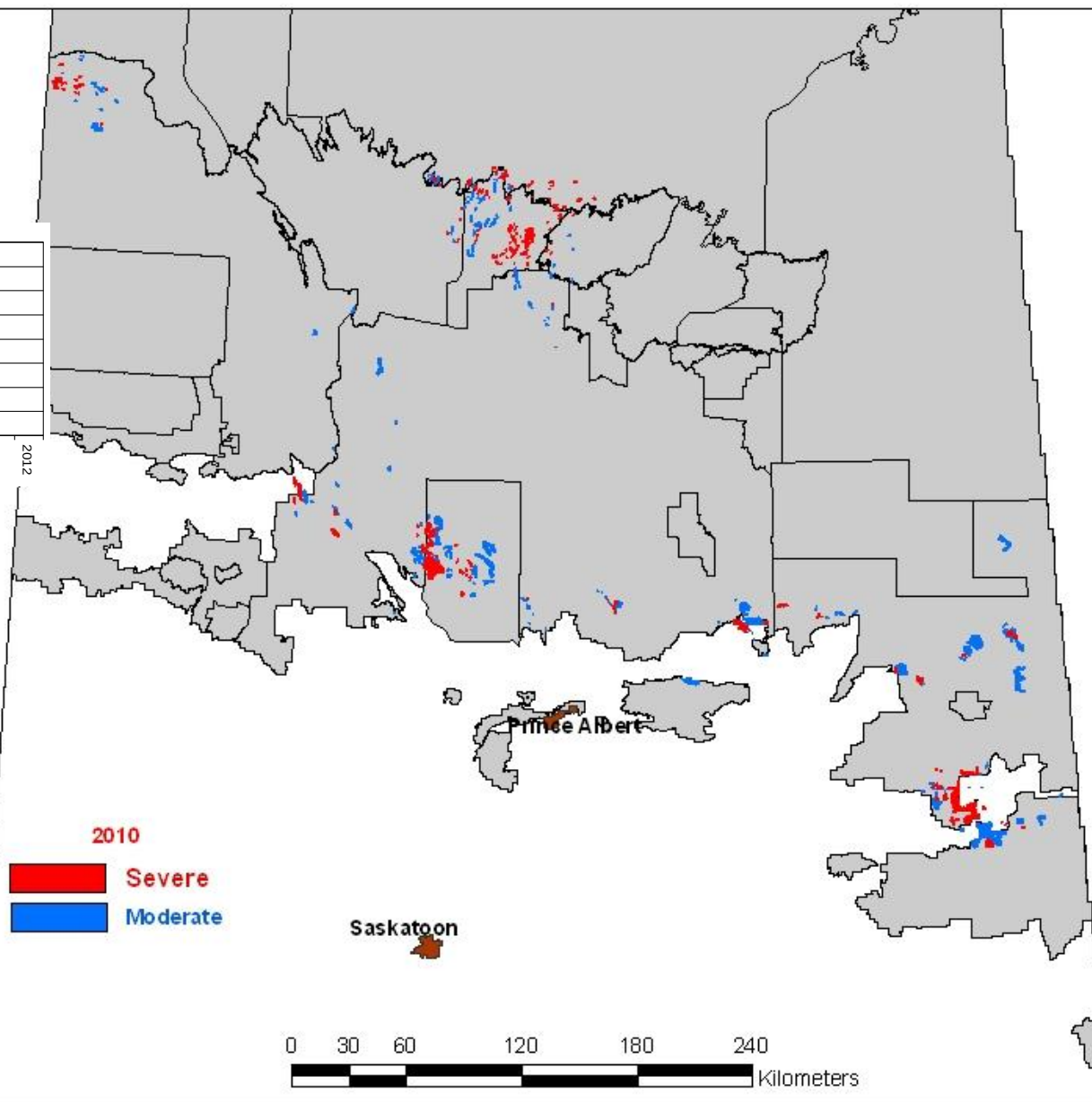
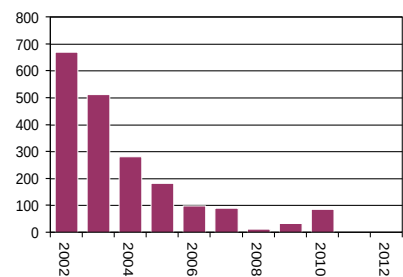


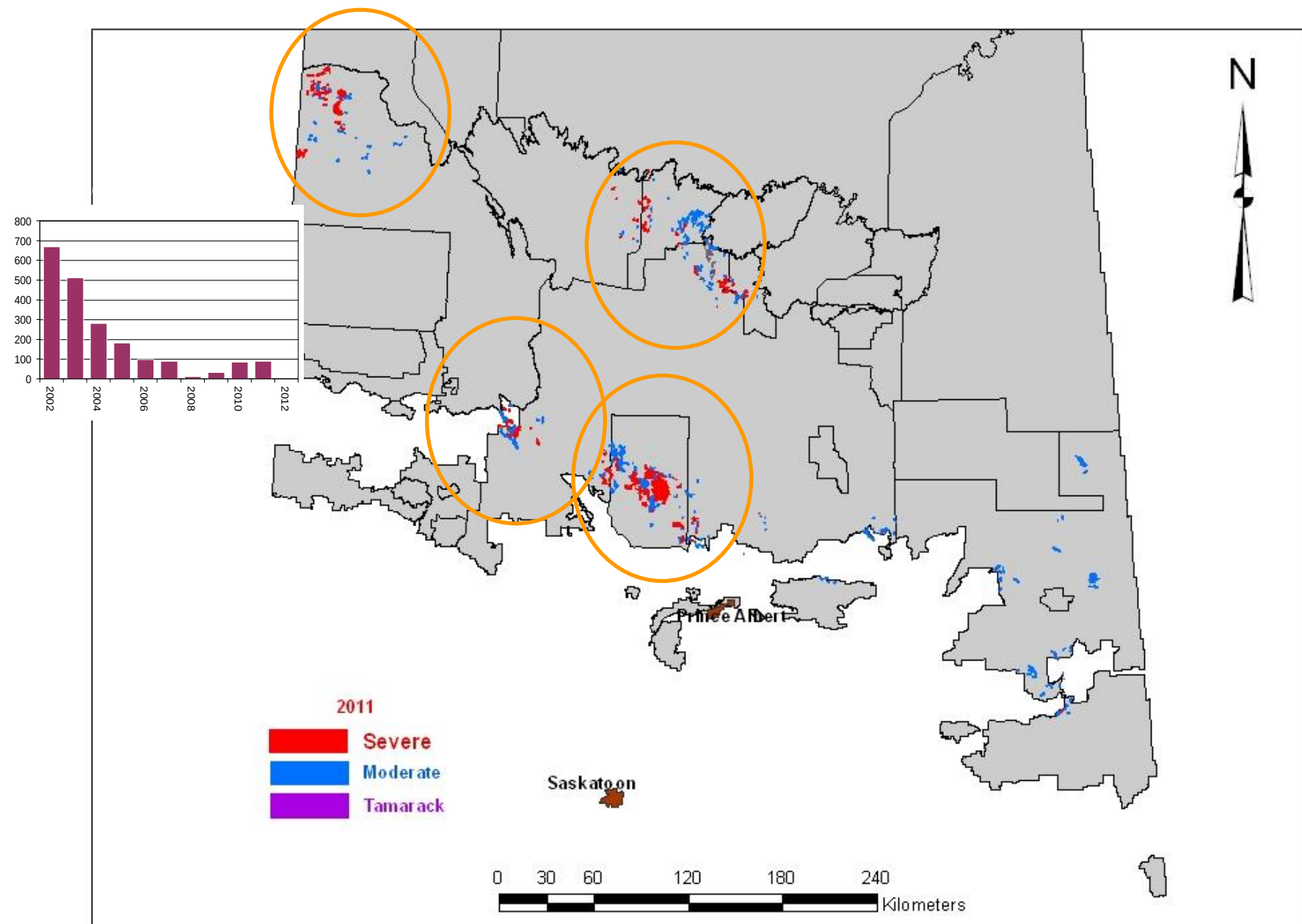




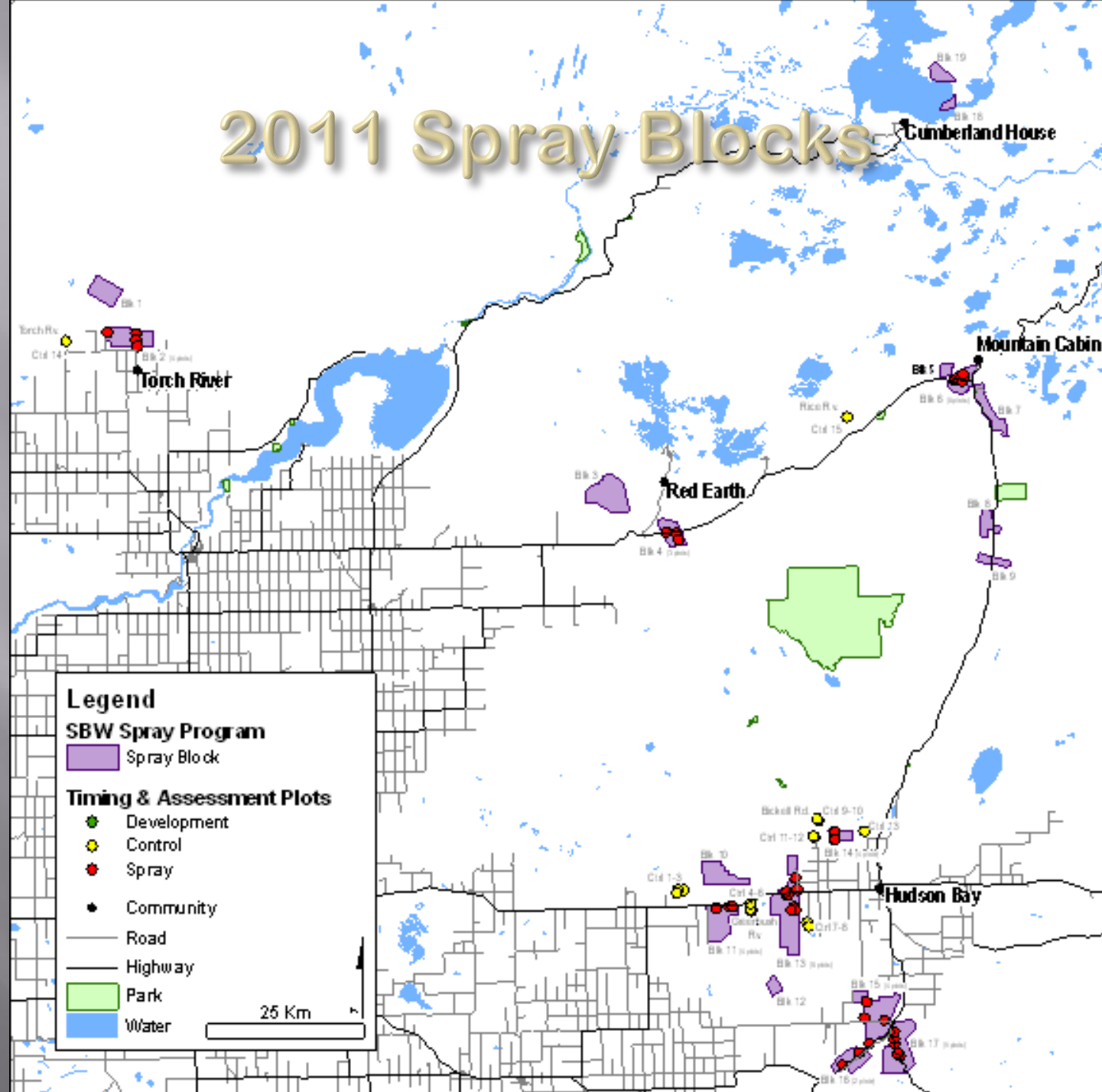






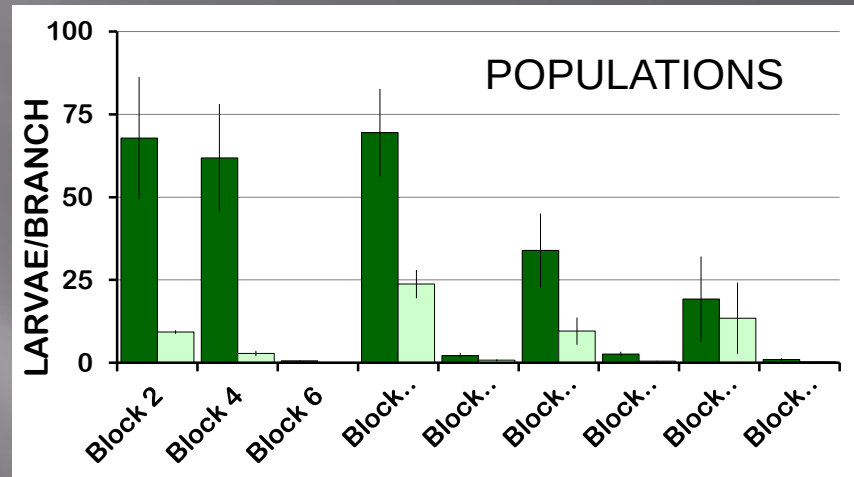


2011 Spray Blocks

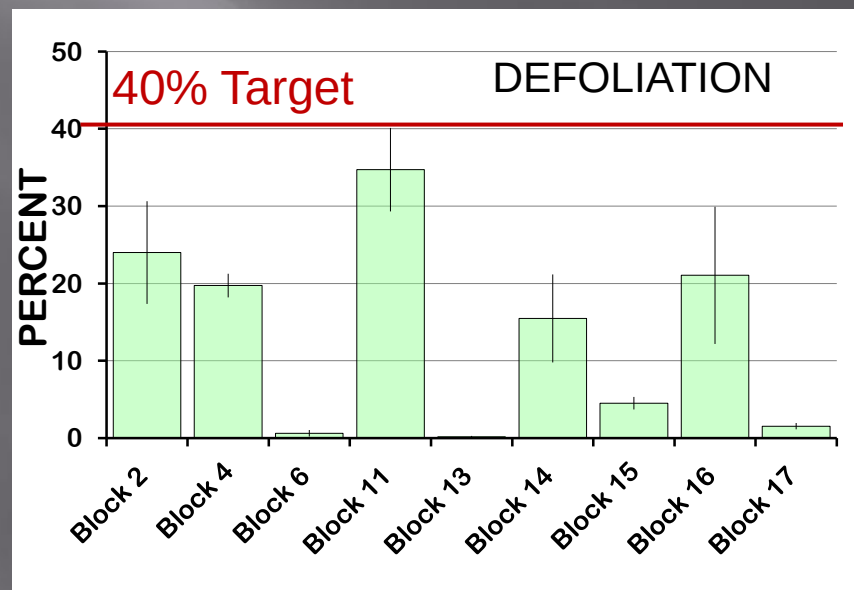


Spruce budworm Results

- Significant reduction in numbers of pre- and post-spray larvae in treatment blocks

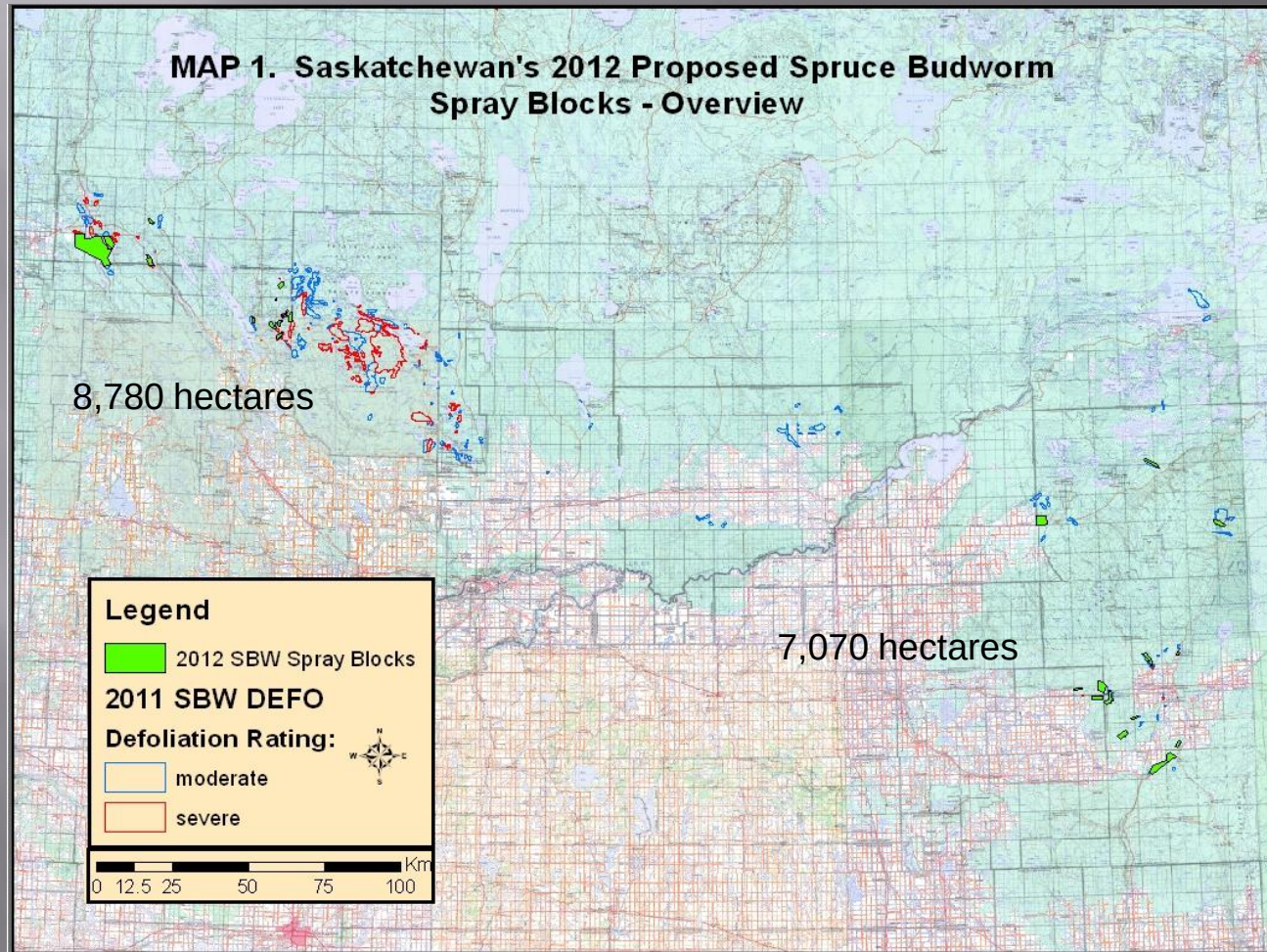


- 40% defoliation target was achieved in all treatment blocks



Pre-spray Post-spray

Proposed SBW Spray Blocks - 2012



DEFOLIATORS HARDWOODS



24,577 ha

Prince Albert

Saskatoon

2011



Large Aspen
Tortrix

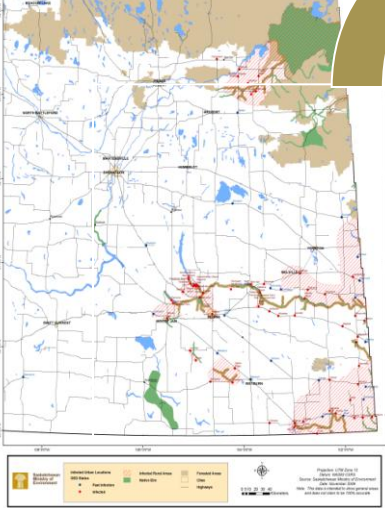


Dutch elm disease (DED)

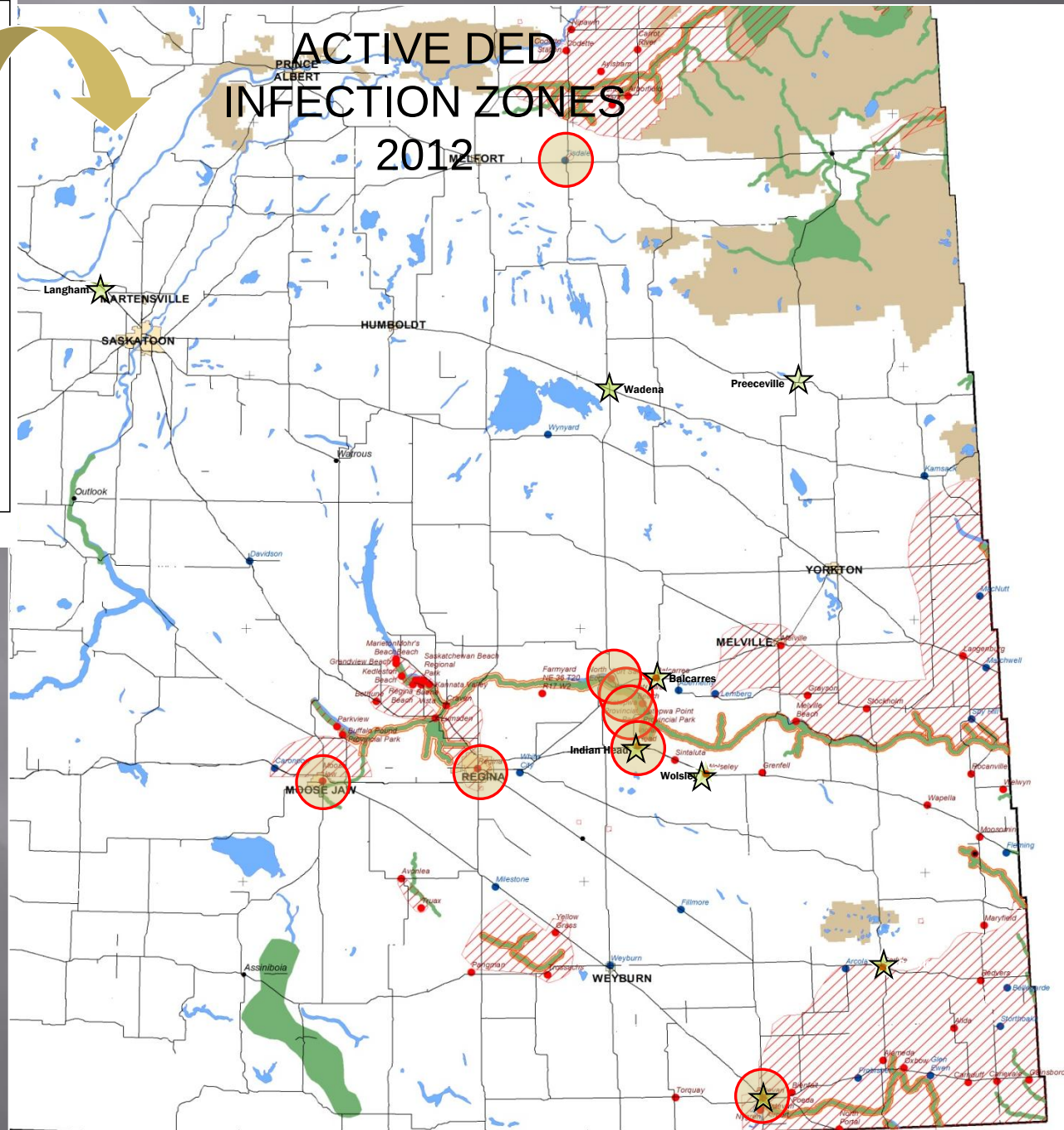
- ▣ Before April 1, 2010:
 - ▣ MoE responsible for implementing DED surveillance, detection and removal services in 43 communities and buffer areas
 - ▣ Costs shared with communities through a cost-share agreement with MoE.
- ▣ Since April 1, 2010:
 - ▣ Municipalities and RM's now responsible for conducting, and paying for, surveillance, detection and removal activities within their jurisdictions.
 - ▣ MoE continues to survey buffer areas and two Provincial Parks; ensure regulatory compliance and provide scientific and technical support to communities.
- ▣ 2011 Infected tree numbers are down in buffers due to complete removal of all 2010 infected trees before this growing season.
- ▣ Impact of budget reduction may be noticeable in upcoming years.



2009 Areas of Known
Dutch Elm Disease Infections



ACTIVE DED INFECTION ZONES 2012



INVASIVE PESTS

- ▣ 2011, CFIA deployed 447 Trece Delta II Green traps throughout SK.
- All traps were **European Gypsy Moth** *Lymantria dispar*
- ▣ **Emerald ash borer** – 18 green panel traps

LOCATION	NUMBER TRAPS
REGINA	117
SASKATOON	180
YORKTON	45
N. BATTLEFORD	55
NIPAWIN	25
MELFORT	25

- ❖ NO POSITIVE GYPSY MOTH TRAPS IN SK
- ❖ NO POSITIVE EMERALD ASH BORER TRAPS IN SK

June Beetle

100 ha

June Beetle *Phyllophaga Spp*

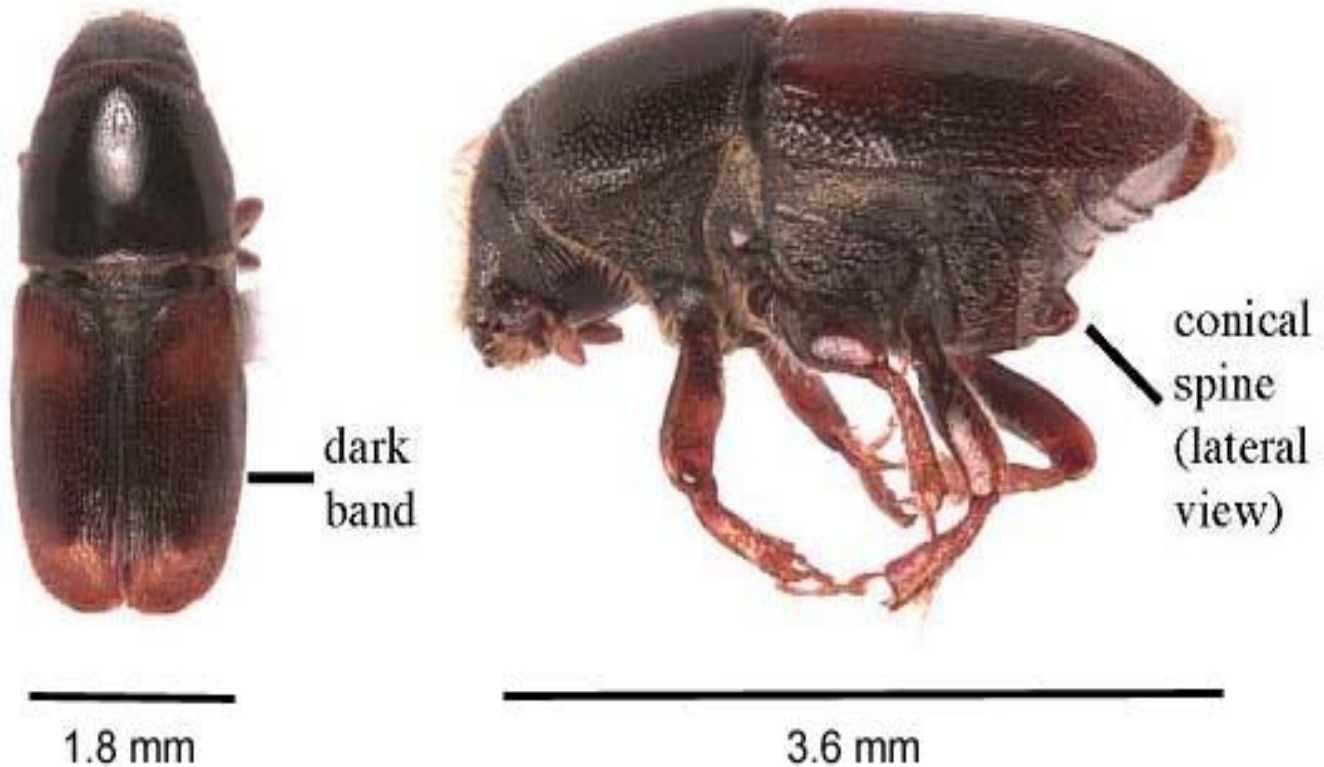
Fort a La Corne Island Forest

- NSR land, fill-planted in June 2011 using Jack pine 1+0 container stock; at 2m spacing
- Site (sandy loam) disturbed by wild fire in 1995
- Plantation in three other locations in Fort a La Corne Island forest planted with same stock were unaffected
- Plug completely destroyed and radicle mechanically damaged
- Estimated 100 ha plantation destroyed at an estimated cost of \$100,000

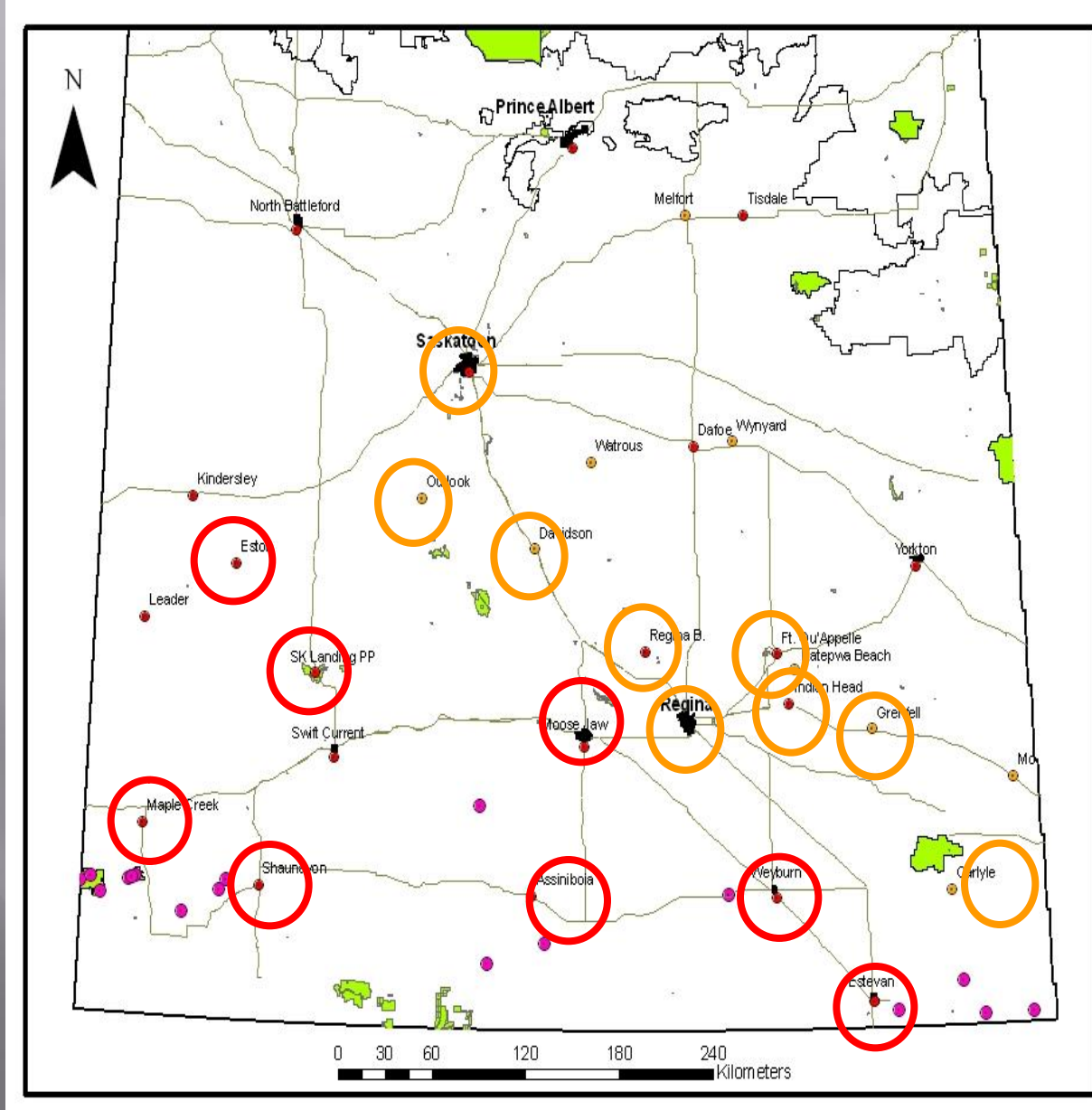


INVASIVES

- Banded elm bark beetle



BEBB - Monitoring

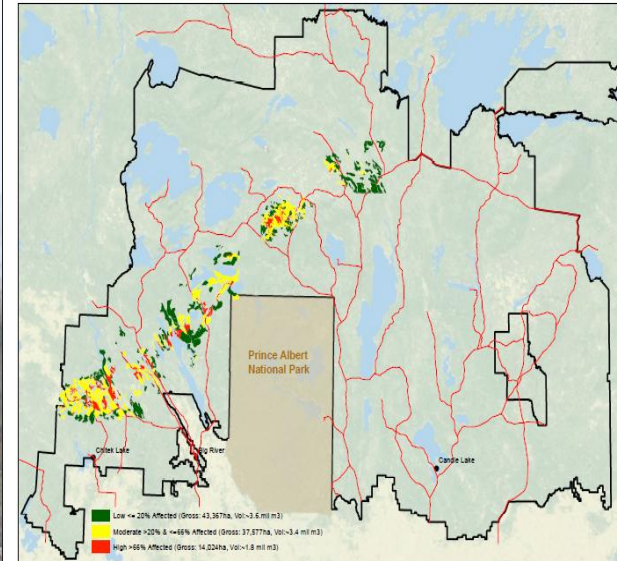


- 2004 - 2007
Lindgren Funnel traps
- 2007 - 2009 Sticky
Panel traps
- 2009 - 11 Expanded
provincial trapping

ABIOTICS

Downburst (Plough Wind)

- ❑ Severe summer storms resulted in plough winds (>100 Km/hr) touching down in the Chitek Lake area in north central SK
- ❑ Damage resulted in 100,000 Ha forest destroyed.
- ❑ Volume affected is almost 5 million m³
- ❑ Salvage operations are ongoing.



OCT 13 2011



Summary

- **MPB**
 - FS will try to maintain quality of surveys in CHIP, increase to include Ag lands;
 - high quality of work from FB contractors,
 - FS to support stakeholders where feasible to reduce beetle inflight;
 - total F&B numbers climbing – much more involvement from FB contractors on infection reporting in 2011;
 - Planned expansion for Dispersal Baiting in Boreal Jackpine
 - Work with AB to coordinate activities on the leading edge of MPB in the Boreal pine
- **SBW**
 - seen 3 subsequent increases in total defo since it “bottomed out” in 2008
 - 2011 spray ops successfully reduced populations and met our 40% defo protection target
 - Plans set for 2012 spray treatment at two bases (15,800 + hectares)
- **DED**
 - Budget reduced to \$100,000; same in 2012
 - Scaled back to survey & treat community buffers
 - Infection numbers are up in the communities, down in buffers
 - Will likely see impacts of program reduction in the communities over time
- **Other**
 - marginal increase in BEBB, GM and EAB not making an appearance,
 - Abiotic – making more than its usual damage, and a new kid on the block (June Beetle)

Questions ??



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