

# Fire Management in Quetico Provincial Park



# Overview

- Fire Management Direction
- New Fire Plan Highlights
- Fire Compartments
- Fire Monitoring Protocols
- Prescribed Burn in the 1999 Blowdown

# Fire Management Direction

- Provincial Parks and Conservation Reserves Act (2006)
- Fire Management Planning Guidelines for Provincial Parks and Conservation Reserves (Draft)
- Quetico Fire Management Plan (release April 2009)

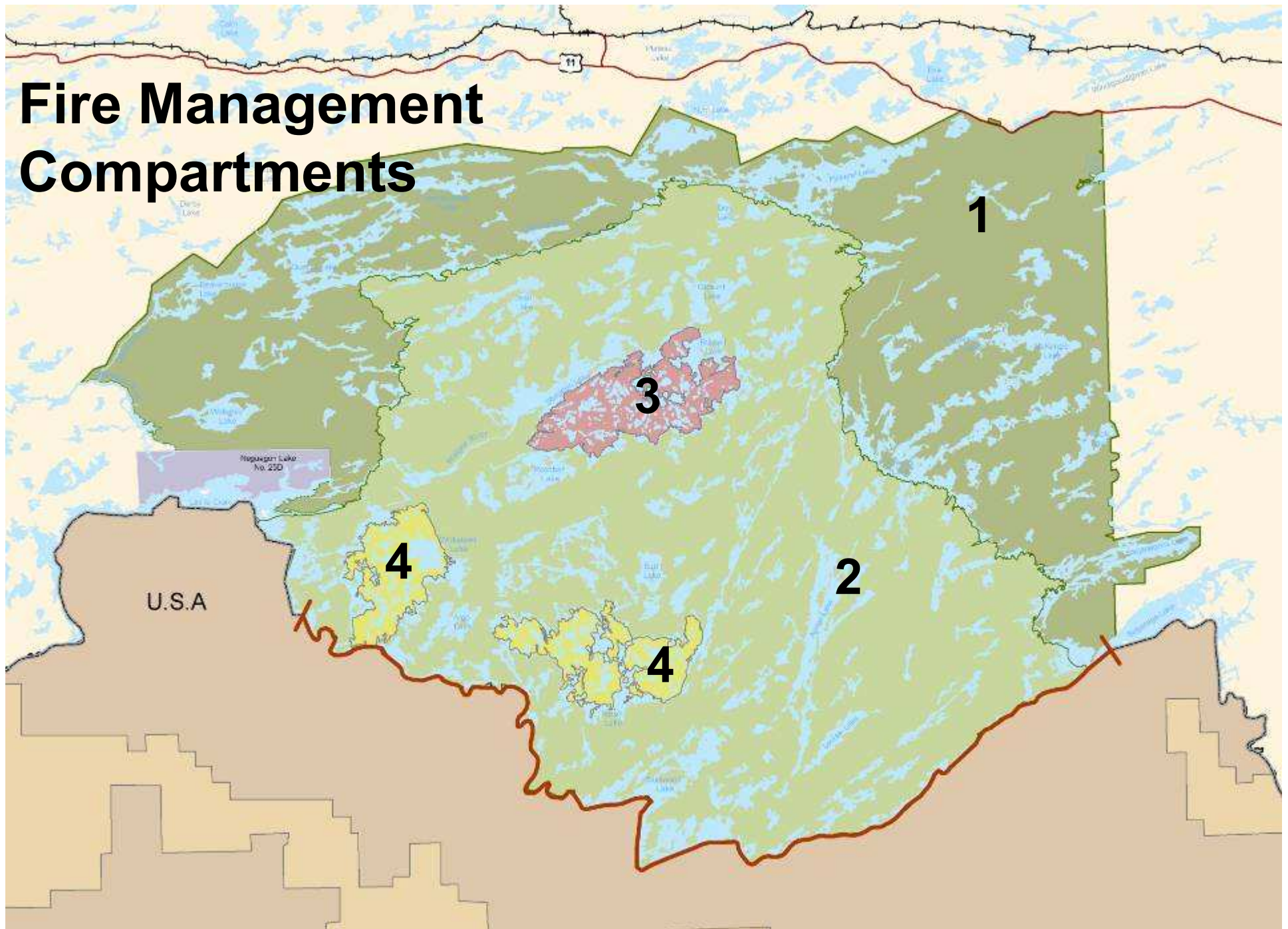
# Fire Management Plan

- Ecological integrity
- Goals and objectives related to research and monitoring
- More flexibility in fire response and use
- Commitment to develop Prescribed Burn Strategy

# Definitions

- Prescribed Fire: Forest fires deliberately utilized in a predetermined area in accordance with a pre-specified and approved burning prescription to achieve preset objectives
- Prescribed Burn: The deliberate, planned a knowledgeable application fire by authorized personnel in accordance with MNR policy and guidelines to a specific land area to accomplish pre-determined forest management or other land use objectives

# Fire Management Compartments



# Fire Monitoring Protocols

- Assess the effects of prescribed fire and burns on regeneration, succession, reduction of competition, fuels reduction and changes in vegetation structure.
- Soil sampling is also completed to describe and measure the soil type, depth of the 'duff' layer, moisture regime and drainage class.

# Fire Monitoring Protocols

Five plots used to collect required information:

- 20 X 20 metre tree plot
- 20 X 20 metre vegetation plot (Releve)
- 10 X10 metre shrub and small tree (<5.5 cm diameter) plot
- 2 X 2 metre seedling plot
- 20 metre fuels transect (1 , 10, 100 and 1000 hour fuels)



# Emerald Lake Prescribed Burn

- Prescribed Burn conducted in a 2000 hectare area of the blowdown on October 12, 2000
- Primary objectives to reduce hazardous fuels and create fire break along international boundary
- Secondary objective to encourage regeneration of *Pinus* species

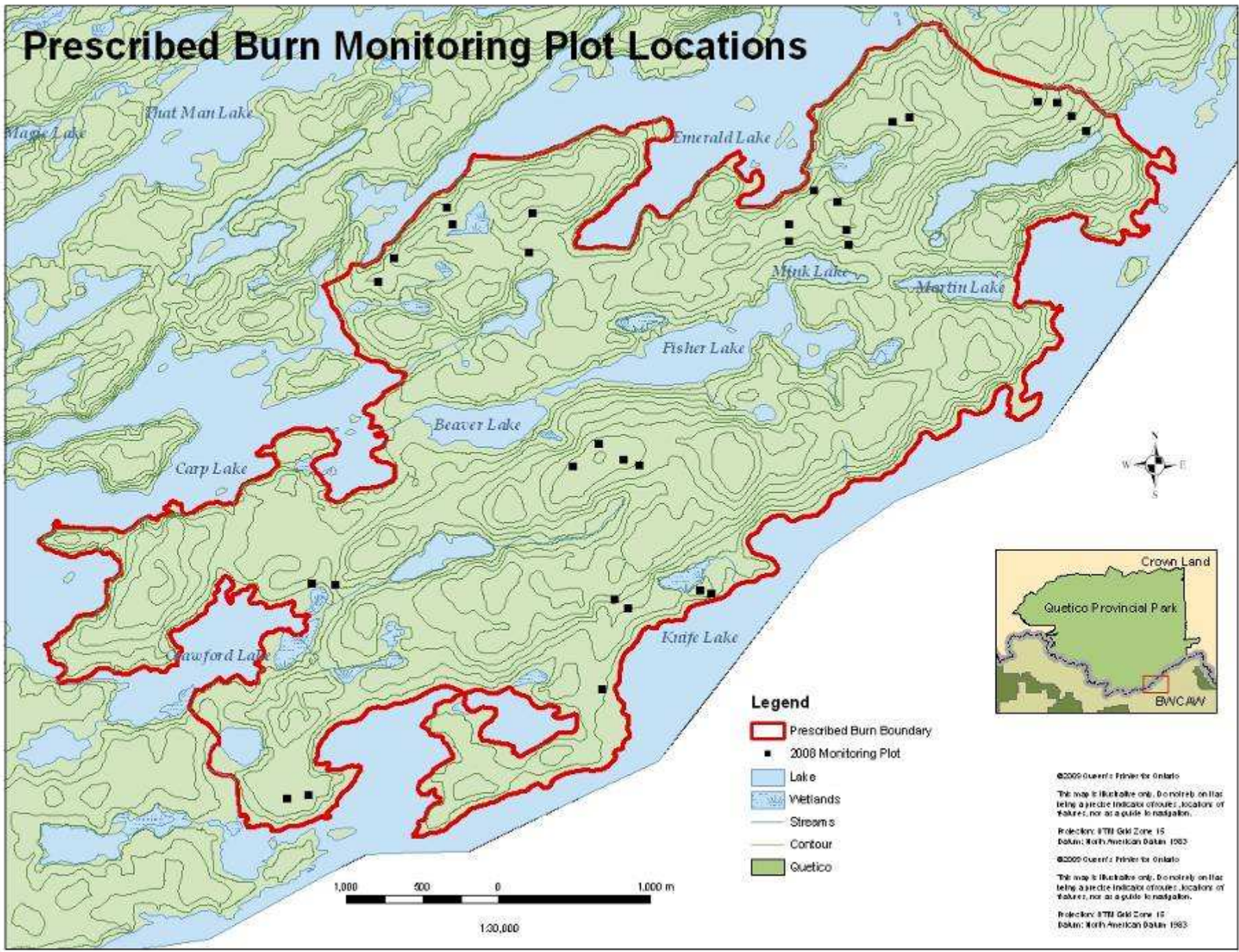
# PB Prescription and Actual Weather

	Temp (C)	RH (%)	Wind Dir.	Wind Speed (km/hr)	Precip (mm)	FFMC	DMC	DC	ISI	BUI	FWI
<b>Rx</b>			<b>45-270</b>	<b>0-15</b>		<b>85-90</b>		<b>&gt;300</b>		<b>&gt;50</b>	
<b>Actual Wx</b>											
<b>Day 1</b>	<b>18.5</b>	<b>43</b>	<b>191</b>	<b>5</b>	<b>0</b>	<b>89.9</b>	<b>13</b>	<b>238</b>	<b>5</b>	<b>23</b>	<b>9.2</b>
<b>Day 2</b>	<b>14.5</b>	<b>80</b>	<b>179</b>	<b>2</b>	<b>0</b>	<b>84.8</b>	<b>13</b>	<b>241</b>	<b>2</b>	<b>23</b>	<b>4</b>
<b>Day 3</b>	<b>3.2</b>	<b>100</b>	<b>30</b>	<b>9</b>	<b>16.5</b>	<b>14.4</b>	<b>6</b>	<b>200</b>	<b>0</b>	<b>11</b>	<b>0</b>
<b>Day 5</b>	<b>5.9</b>	<b>89</b>	<b>262</b>	<b>6</b>	<b>0.5</b>	<b>26.8</b>	<b>6</b>	<b>203</b>	<b>0</b>	<b>11</b>	<b>0</b>

# **Emerald Lake PB Monitoring**

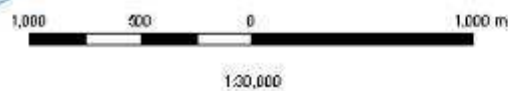
- Fuels data collected pre-burn and less than one year post burn
- Pre-burn vegetation pieced together from Forest Resource Inventory, snag and downed trees on plot
- Forest composition: majority of plots dominated by jack pine, with lesser components of red pine, white pine, black spruce and poplar spp.
- Each plot contained a minimum of 50% Conifer species

# Prescribed Burn Monitoring Plot Locations



## Legend

- Prescribed Burn Boundary
- 2008 Monitoring Plot
- Lake
- Wetlands
- Streams
- Contour
- Quetico



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 This map is illustrative only. Do not rely on this being a precise indicator of routes, locations of features, nor as a guide to navigation.  
 Projection: NAD 83 UTM Zone 18  
 Datum: North American Datum 1983

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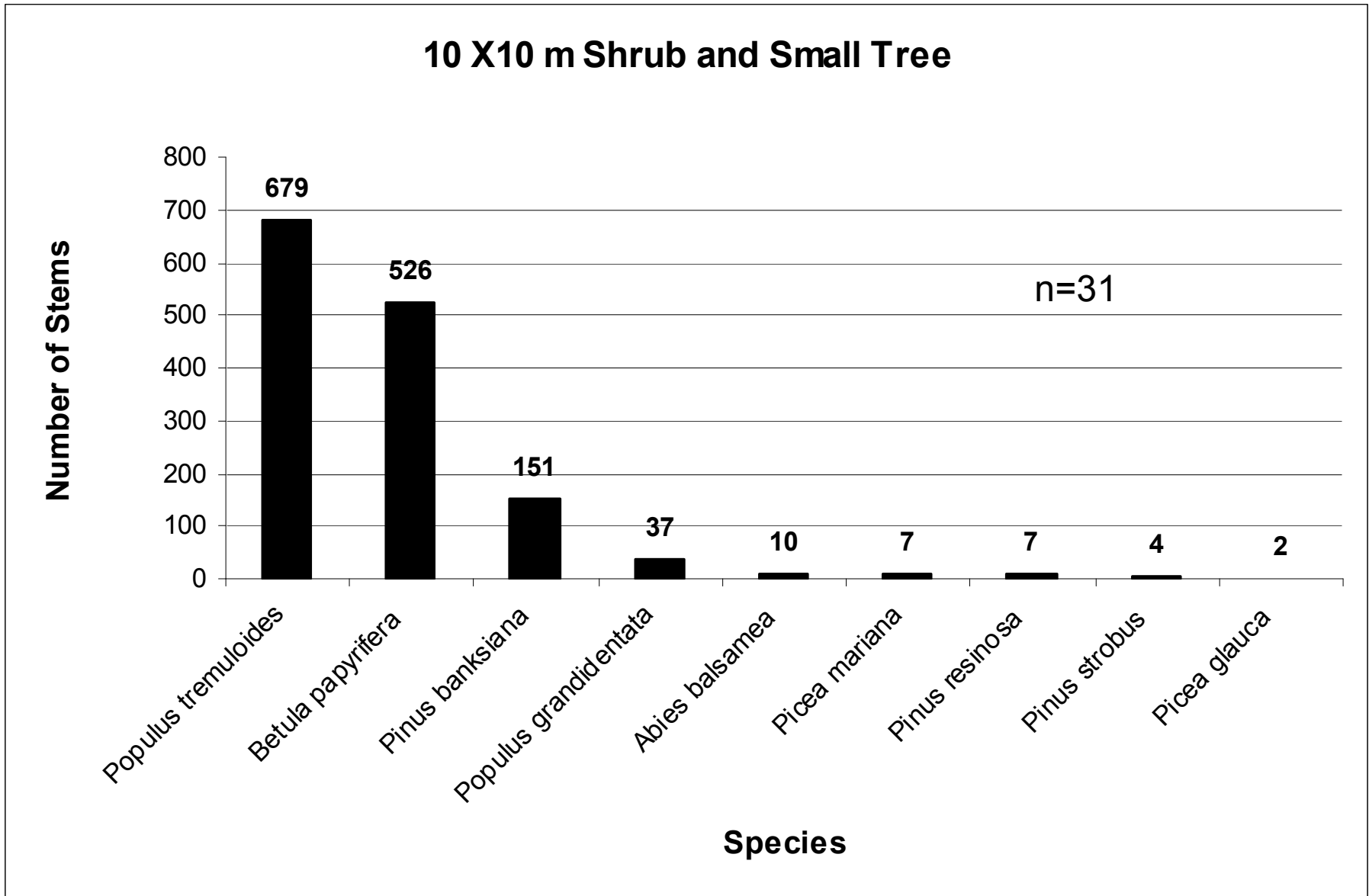
# Fuels

- Pre and immediate post burn fuels data very minimal – Only two transects completed
- Pre-burn fuel loading:
  - 1hr-100 hr fuels  $2.95\text{kg}^2$  and  $1.78\text{kg}^2$
  - 1000hr fuels  $10.44\text{kg}^2$ . and  $11.07\text{kg}^2$
- Post-burn fuel loading:
  - 1hr-100 hr fuels  $1.24\text{kg}^2$  and  $0.56\text{kg}^2$
  - 1000hr fuels  $6.99\text{kg}^2$  and  $8.16\text{kg}^2$

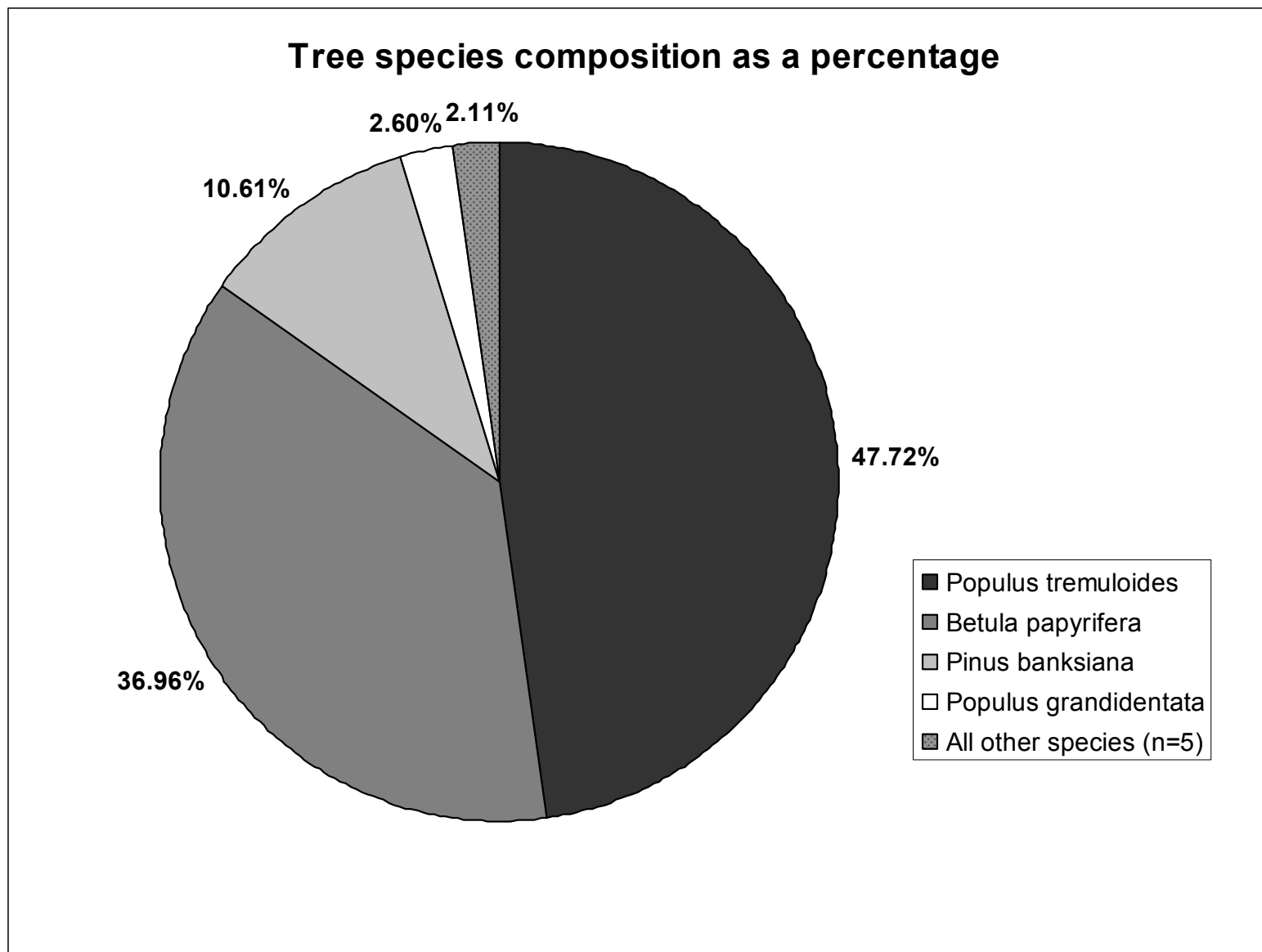
# Species Composition Pre-burn

<b>Number of Plots</b>	<b>Species Composition</b>
2	CE60 PO20 SB10 BW10
3	PJ40 PO30 SB10 BW10
2	PJ40 PO30 SB10 PR10 BW10
2	PJ40 PR30 SB20 PO10
4	PJ40 SB30 PW10 PO10 BW 10
4	PJ50 SB30 PW10 PO10
6	PO50 PJ20 SB10 SW10 PW10
2	PR30 CE20 PJ20 BW10 PO10 SB10
3	PW30 PO30 BW20 SW10 PJ10
3	PW40 PO30 CE20 SW10
<b>Total: 31</b>	

# Species Composition 10 Years after the Burn



# Species Composition 10 Years Post-Prescribed Burn





# Next Steps

- Present results from pb monitoring to fire managers
- Develop Prescribed Burn Strategy, incorporating active adaptive management framework
- Explore feasibility of spring prescribed burns
- Complete Pre-burn monitoring plots in new prescribed fire compartments

**As the Canadians say:**

**Thanks, eh.**