



**Independent Environmental  
Monitoring Agency**

# **Wildlife Effects Monitoring Program: 7<sup>th</sup> year of findings**

**Review of Ekati's Environmental Monitoring And  
Management Programs Workshop**

**March 16<sup>th</sup> and 17<sup>th</sup>, 2004**

# March 17<sup>th</sup>, Morning Session

- Background on the Wildlife Effects Monitoring Program (WEMP)
- Findings of the 2003 WEMP field season
- IEMA comments on the findings and monitoring program
- Open discussion on findings and recommendations

# What is the WEMP?

- It monitors wildlife and habitat of greatest importance and concern
- Monitoring is conducted through aerial and land-based techniques
- Traditional knowledge plays a role in the WEMP, wolverine tracking is an example

# BHPB tracks the following effects on Wildlife

- Vehicle and Aircraft Collisions
- Habitat losses from mine development
- Landfill and waste management problems – for attractiveness to wildlife
- Wildlife deaths and accidents at the mine
- Number of animals around the site during specific time periods

# What animals are monitored?

- Caribou
- Grizzly
- Wolverine
- Wolves
- Upland Breeding Birds and Falcons
- And their habitats

# How are impacts reduced?

- Wildlife awareness training is given
- Animals have right-of-way on roads
- Roads have speed limits
- All sightings of wildlife are reported
- Roads are closed when there are lots of caribou around
- Caribou are removed from airstrip
- Improved waste management practices

# Vehicle and Aircraft Collisions

- All collisions are reported
- In 2003:
  - no deaths from vehicles
  - no road closures

# Habitat Loss

- Total direct habitat loss = 17.6 square km (1.1% of wildlife study area)
- Direct habitat loss:
  - is associated with roads, buildings and pits
  - is less than 2% of any single type of habitat
- Indirect habitat loss:
  - due to animals avoiding the site
  - will be different for each animal



# Changes in Mine

1997-2003



# Landfill and Waste Management

- Waste is managed to reduce attractants (food, food containers, oils) and toxic items
- At Ekati landfill, attractants were found in 95% of checks in 2000 and decreased to 65% of checks in 2003
- At Misery landfill, attractants were found in 56% of checks in 2001 and decreased to 19% of checks in 2003

# Landfill and Waste Management

- Currently, animals are rarely attracted to landfills



# Wildlife Incidents

- 42 sightings of grizzlies, with 7 cases requiring action
- 6 caribou deaths reported (compared to 7 in 2001 and 13 in 2002)
- 5 deaths were near mine infrastructure

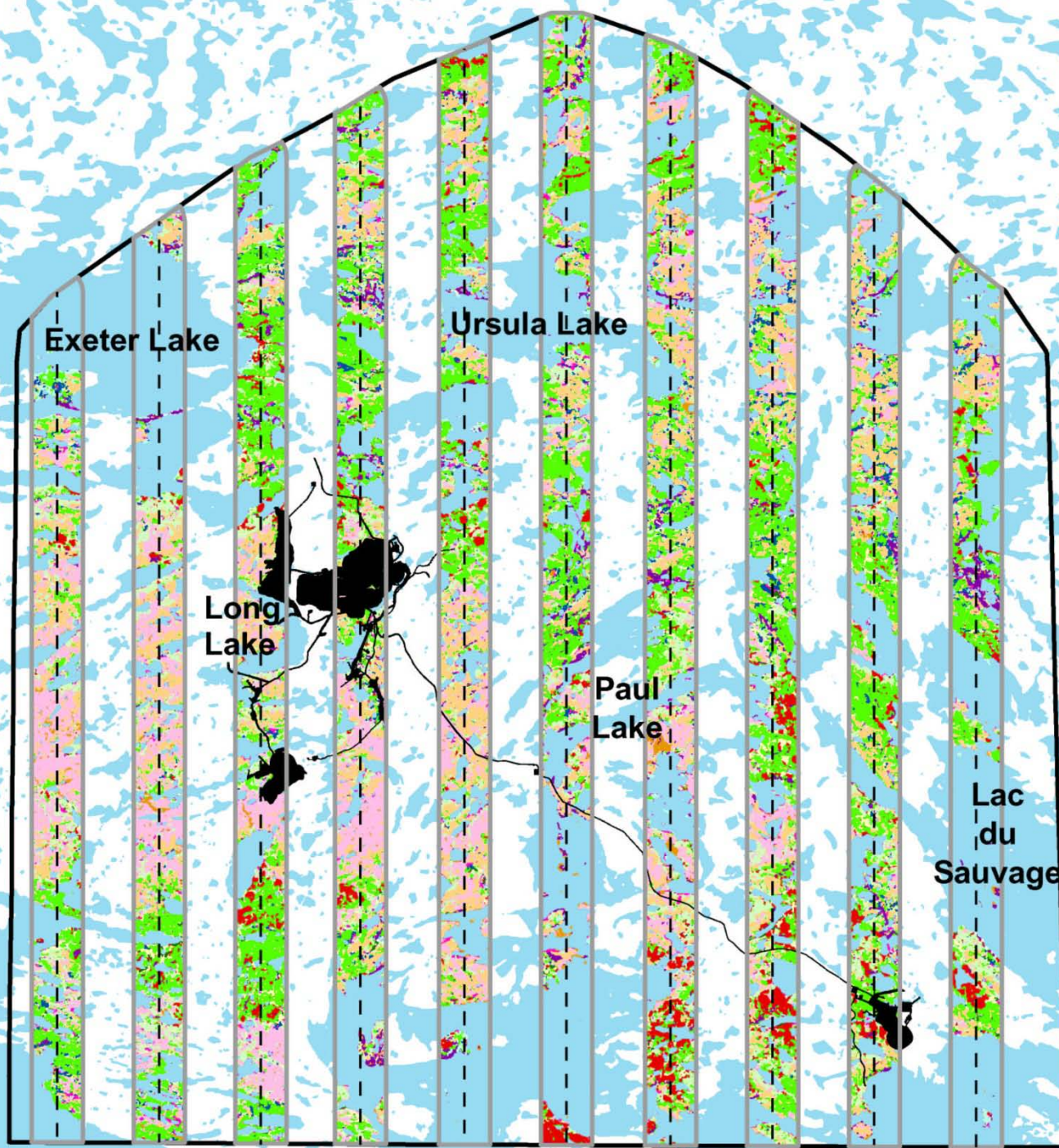
# Caribou Monitoring

- habitat areas are mapped to see if caribou avoid these areas close to Ekati
- The northern and southern migration routes are reported separately
- Caribou numbers and behaviour are tracked using air surveys





Where caribou  
are monitored

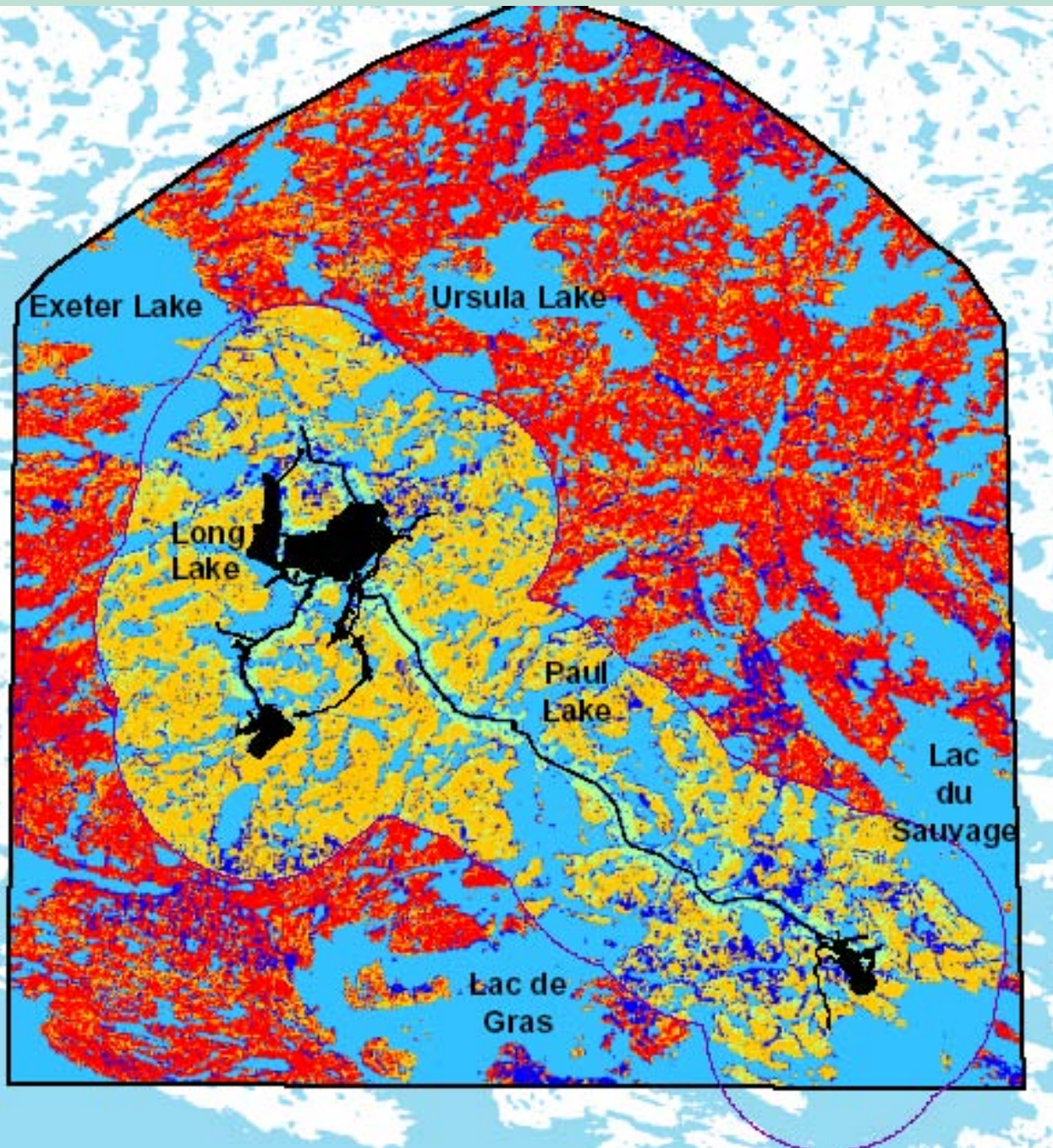


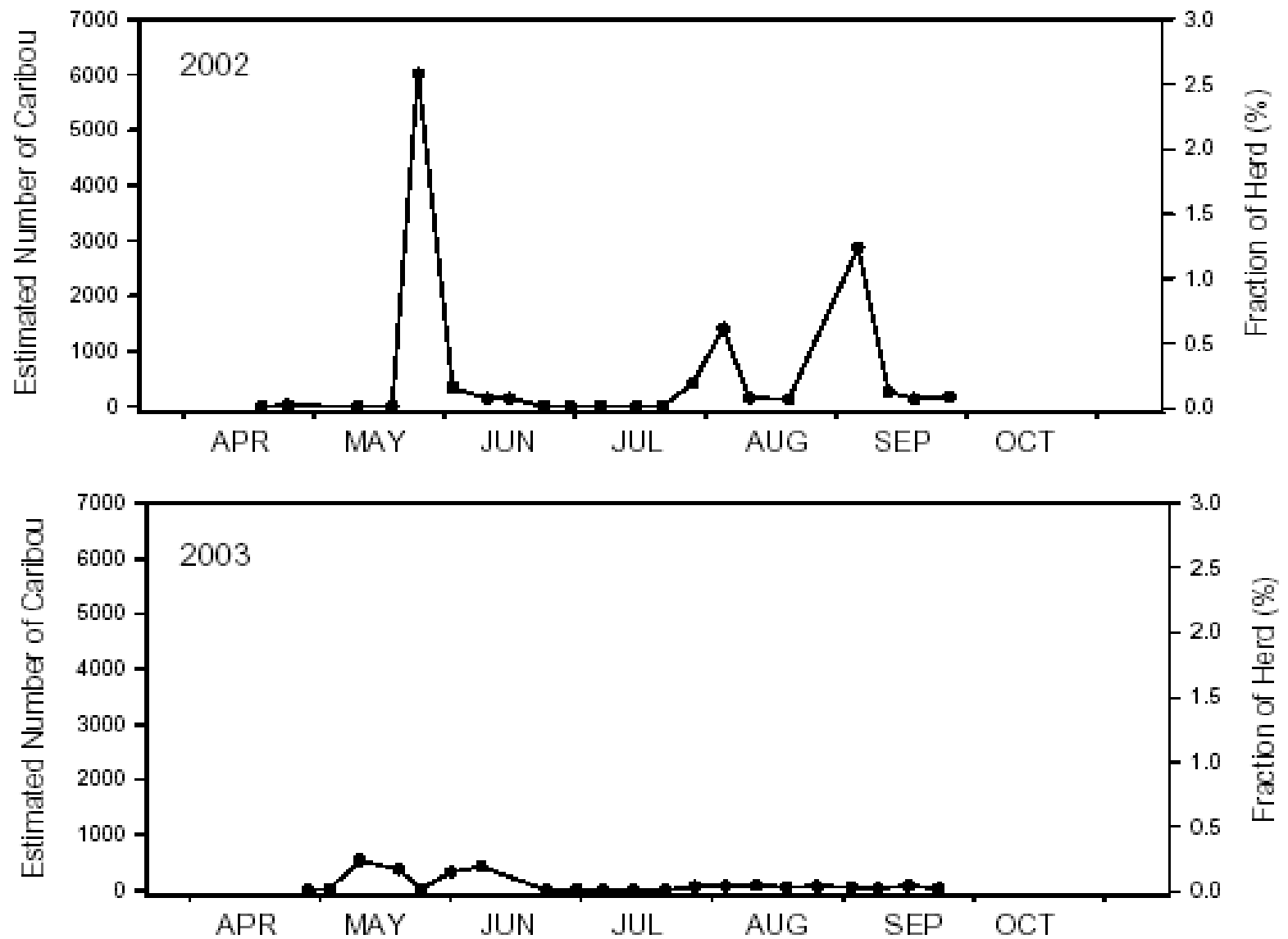
# Habitat Loss for Caribou

- Northern Migration
  - Loss of 8.2% of suitable caribou habitat
- Post-calving migration
  - Loss of 8.7% of suitable caribou habitat



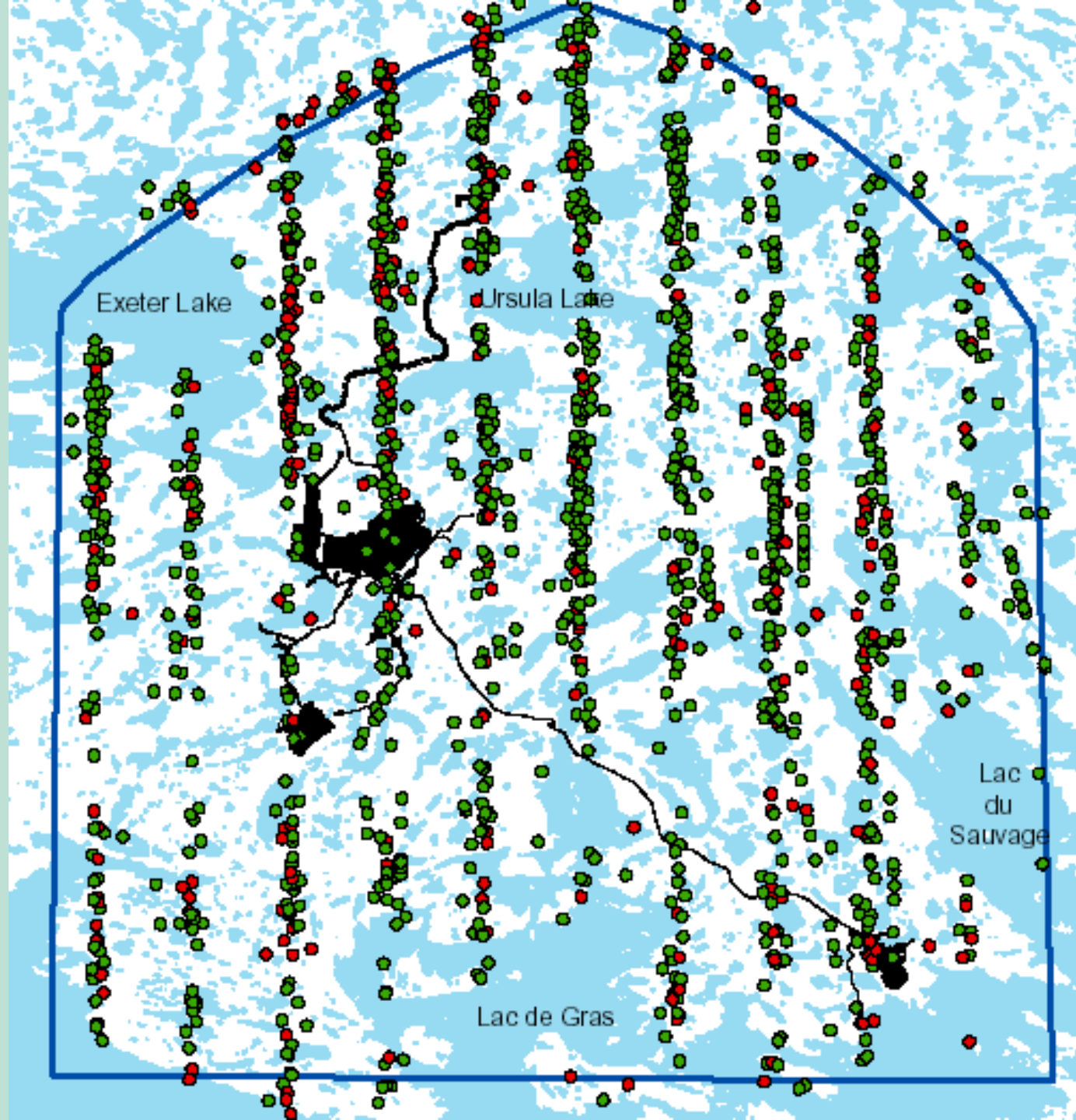
# Caribou Habitat Loss





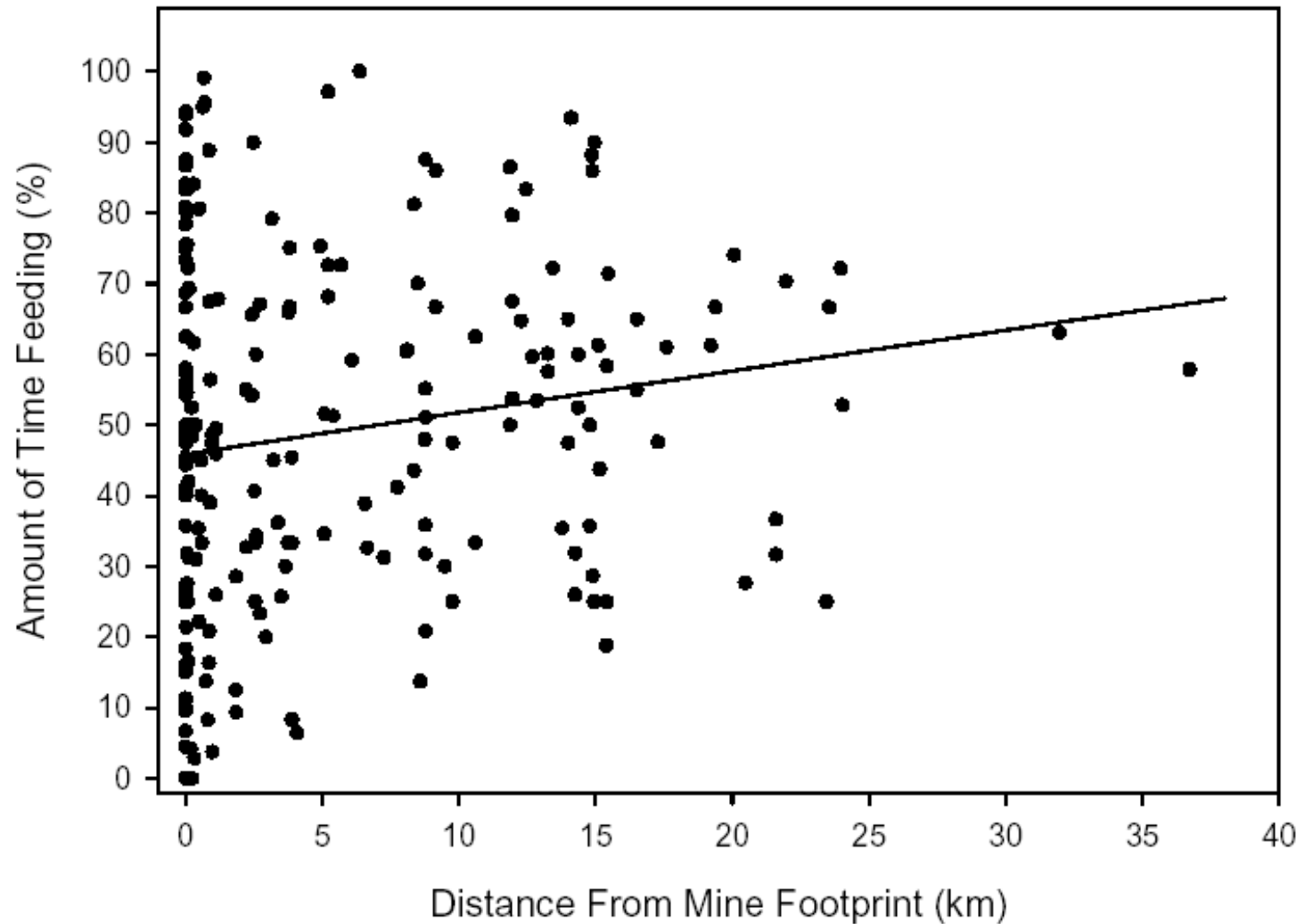
Number of caribou in study area

Caribou  
groups  
during post-  
calving  
migration,  
1998-2003



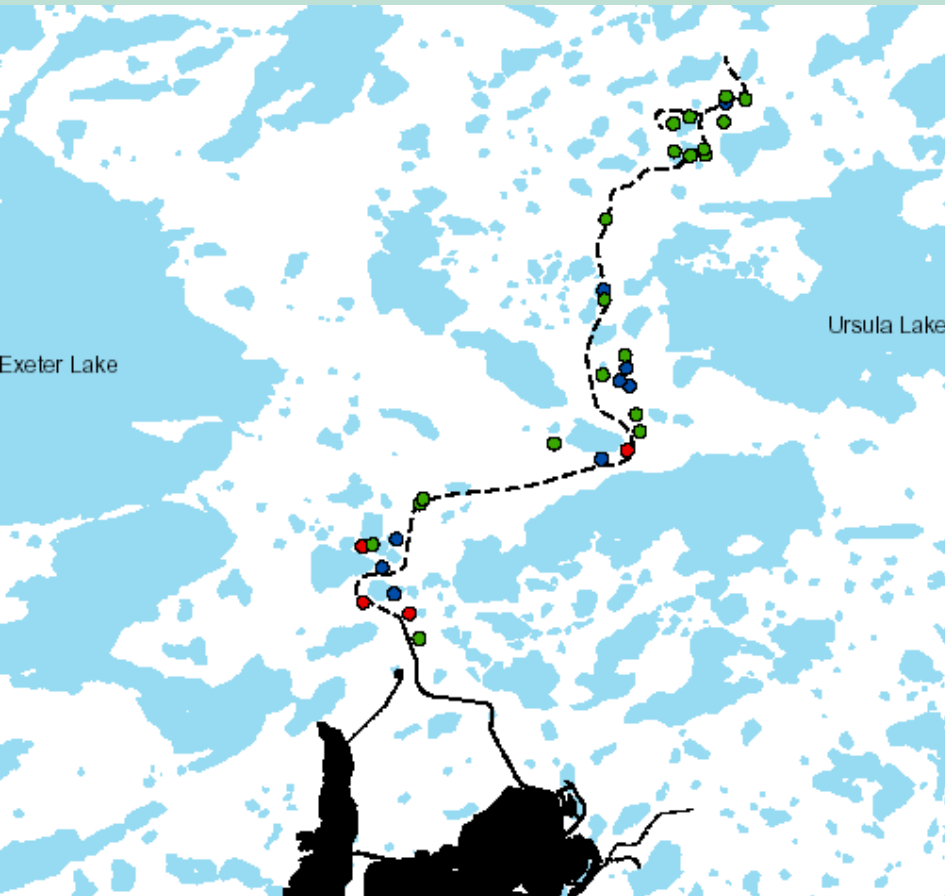


Conclusion: Caribou spend less time eating when close to the mine



# Caribou along proposed Sable road

Spring



Summer

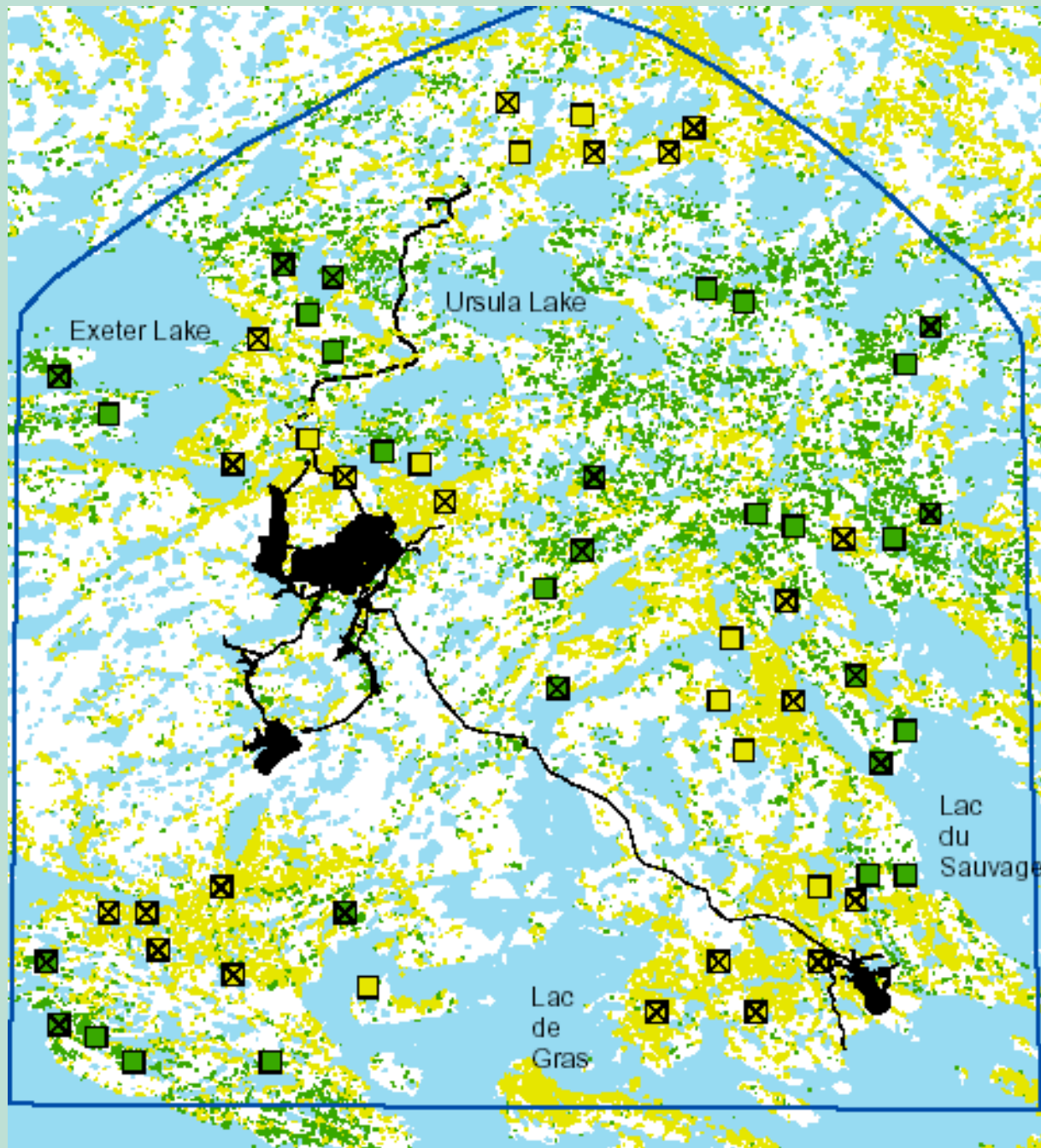


# Grizzly Monitoring

- Habitat loss assessed
- Grizzly signs are recorded in 60 random plots
- GPS collars on four grizzly bears in 2003

# Habitat Loss for Grizzly Bears

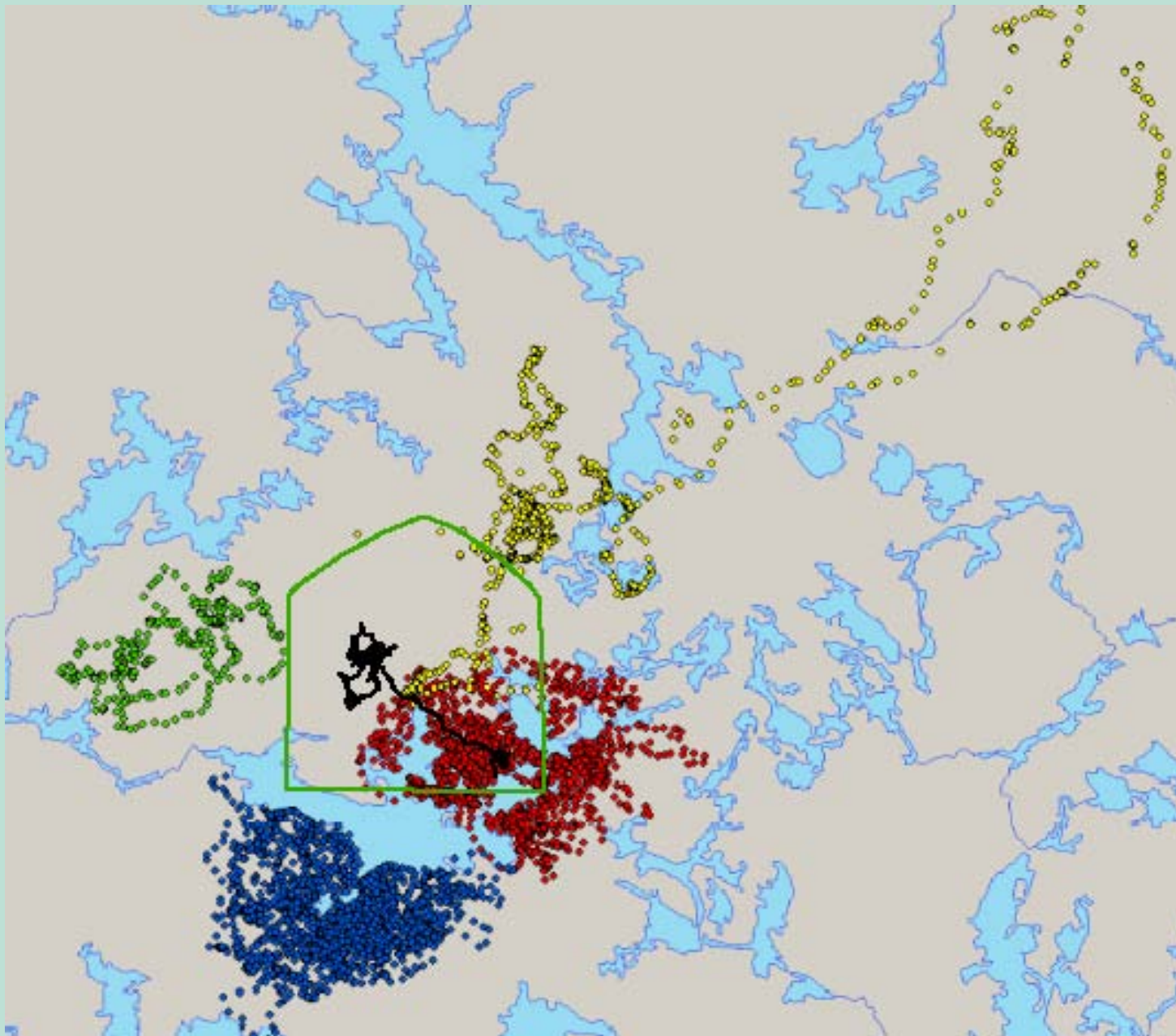
<b>Season</b>	<b>Females and cubs</b>	<b>Males</b>
Spring	2.8%	2.9%
Summer	3.1%	3.1%
Late summer	3.3%	3.2%
Fall	2.7%	3.1%



Sites with signs  
of bears are  
marked with an  
“X”



Movement  
of 4  
collared  
grizzly  
bears

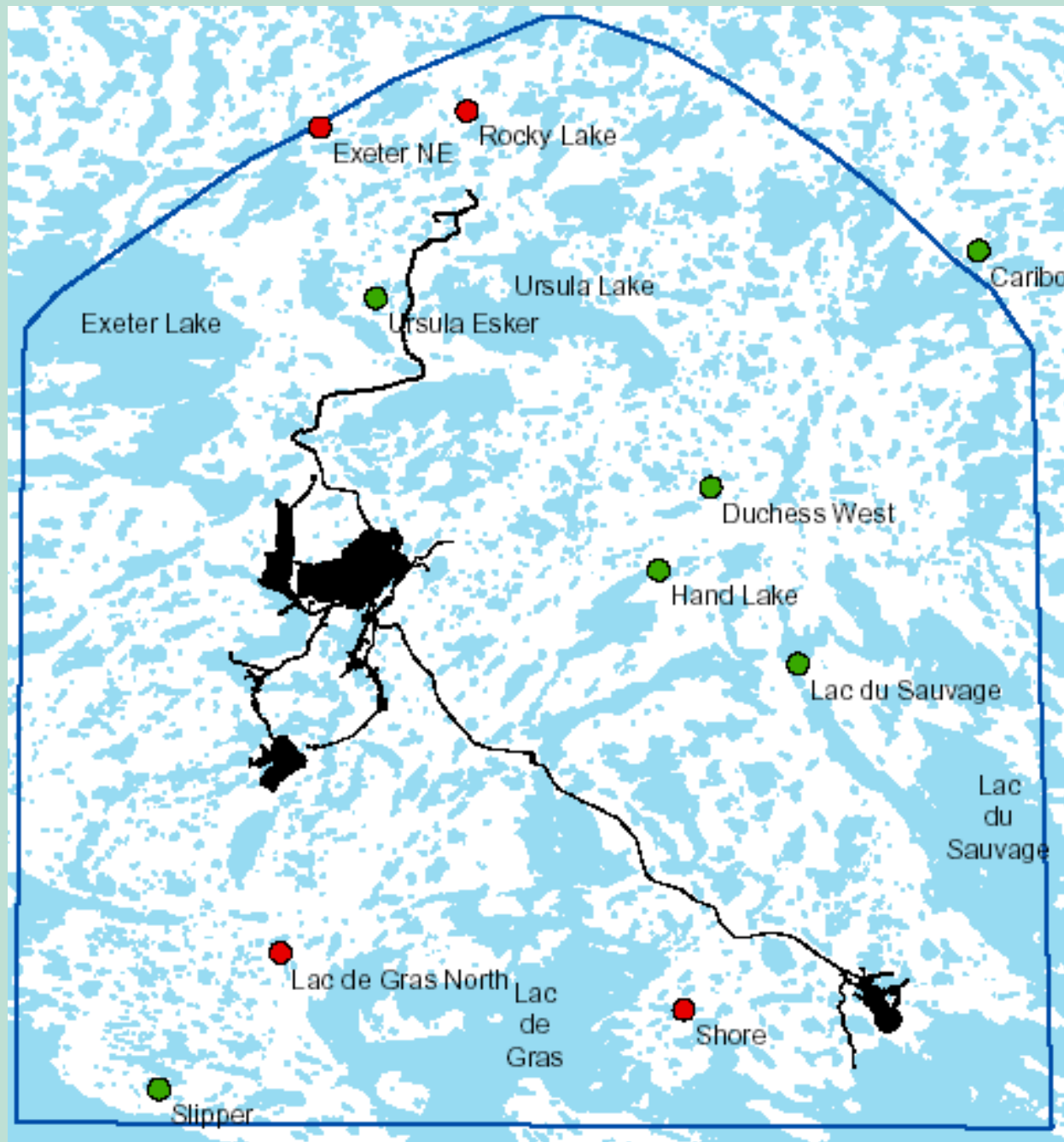




# Wolf Monitoring

- Known wolf dens are visited 3 times between May and August to determine occupancy and pup production
- Wolf sightings are recorded





Active wolf  
dens – red

Unused wolf  
dens - green

# Wolf Sightings

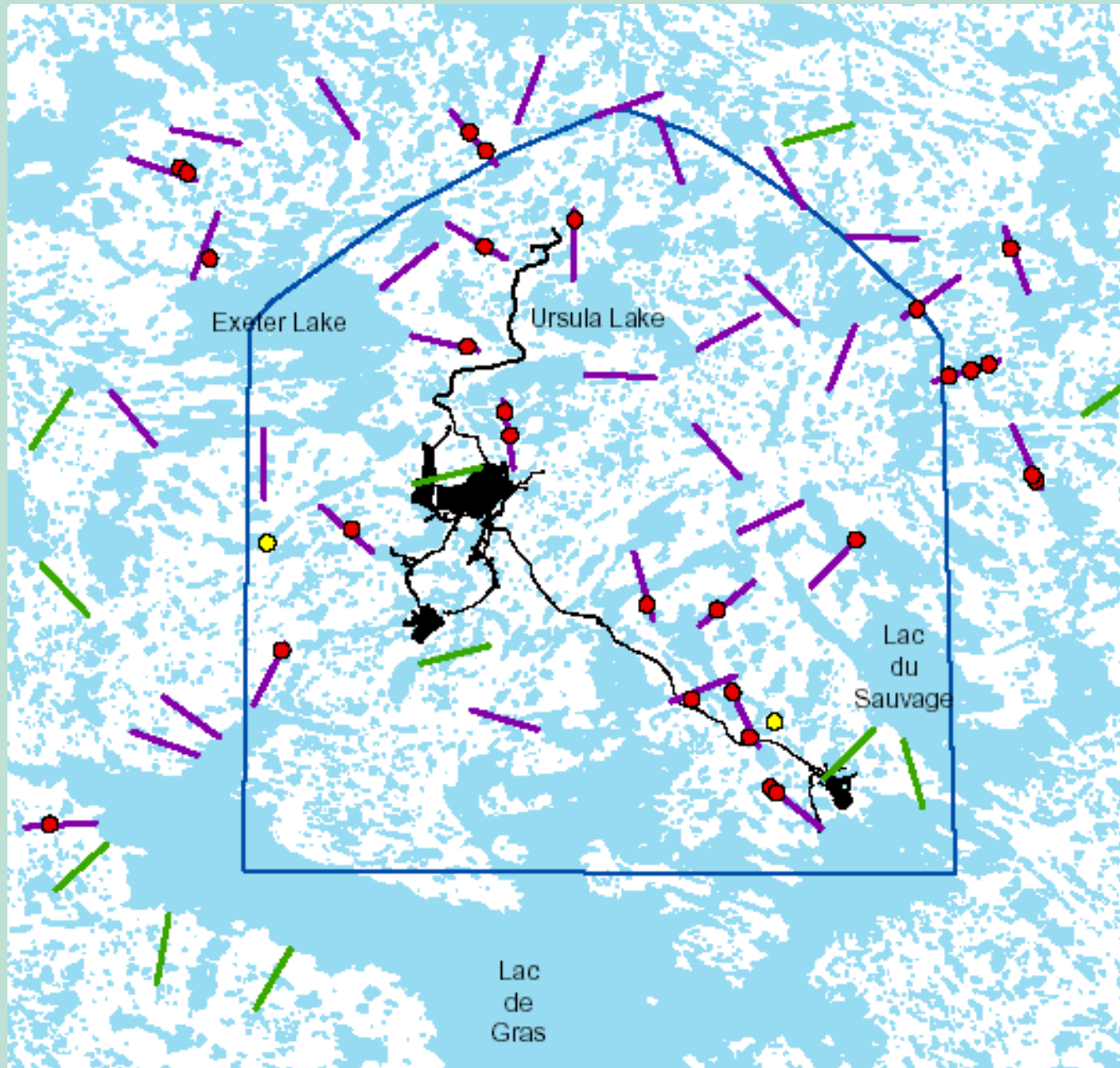


- 54 wolves were observed
- No actions were necessary
- No wolves seen in the landfills

# Wolverine Monitoring

Wolverine are studied using a snow tracking program

- 50 lines were selected throughout study area
- Snow machines used to observe presence of tracks
- Aboriginal expertise used to identify gender



Signs of  
wolverine:

Tracks – red

Dens - yellow

# Wolverine Monitoring



- 14 wolverines sighted
- No actions or relocations were taken
- Overall conclusion: wolverines continue to be present in the study area



# Bird Monitoring

- Density and numbers of birds are monitored
- Ptarmigans, small birds and shorebirds
- Birds near infrastructure have not been affected, although some bird habitat has been lost

# Falcon Monitoring

- Gyrfalcons and Peregrine Falcons are monitored
- Nest sites are surveyed in the summer
- 10 nests were occupied but only 1 had chicks
- Chick production varies from year to year



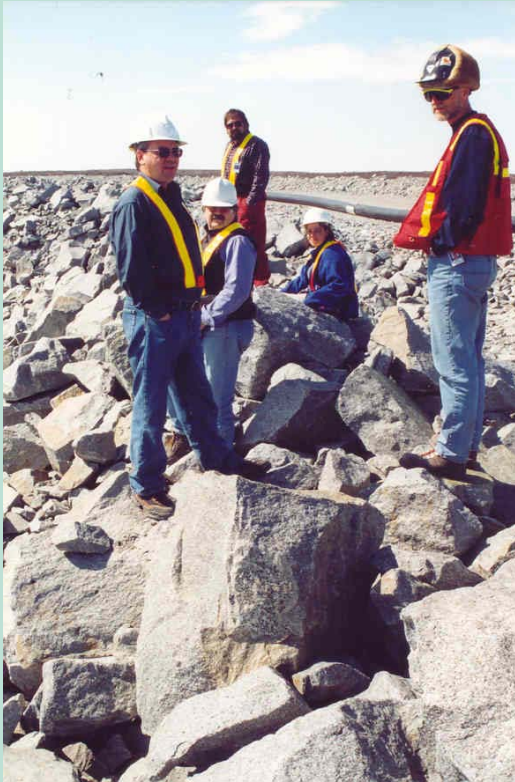
# Our Key Messages

- The most important animals are being monitored; things look OK
- There has been habitat lost for all animals
- BHPB has adapted its practices to protect animals, when necessary
- The number of negative interactions has decreased

# IEMA Assessment

- The agency believes that wolves use roads, pits and rock piles to corner caribou
- Recent changes to waste management practices have been successful in reducing attraction of animals such as wolverines and foxes
- Hair sampling of wolverine may be preferred
- Regional caribou monitoring may be needed because of indications of cumulative impacts (UNBC research)

**ROADS:** BHPB has recently discussed making more gradual slopes on roads that are not needed during the closure period



Standard roadside



Caribou friendly roadside

# Agency Preliminary Recommendations

- Wolverine monitoring - potential to use DNA from hair collection
- Regional caribou monitoring adaptations - cumulative effects concern
- Breeding bird monitoring - every second year rather than every year (support CWS suggestion)