

Woodland caribou and the boreal forest



Liv Vors

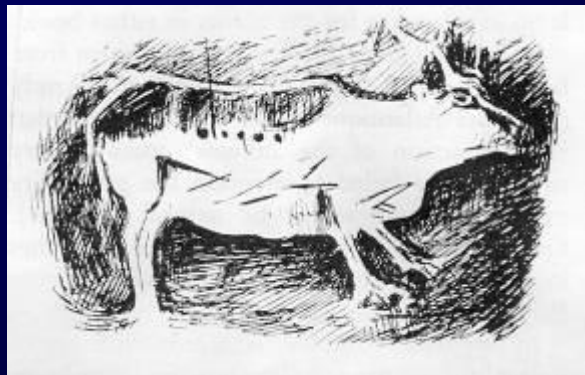
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Why caribou?



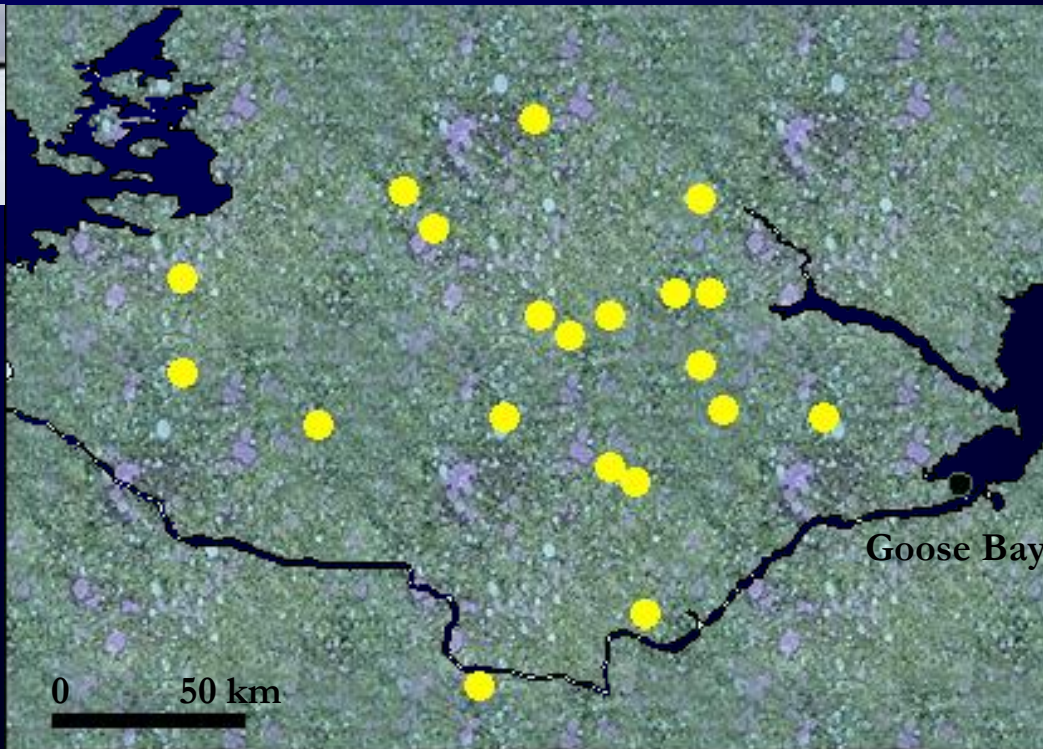
- Indicator
- Umbrella

People and the deer



Space

A key to understanding and conservation



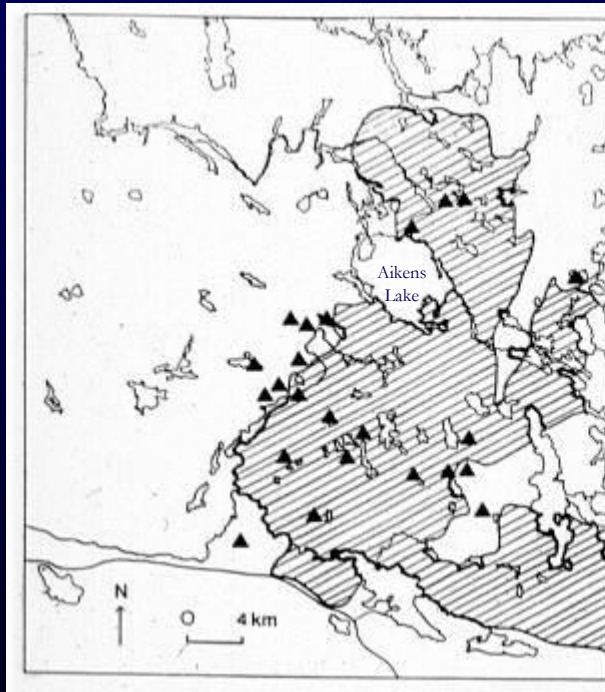
Red Wine Mountains
caribou herd

Calving locations
1984

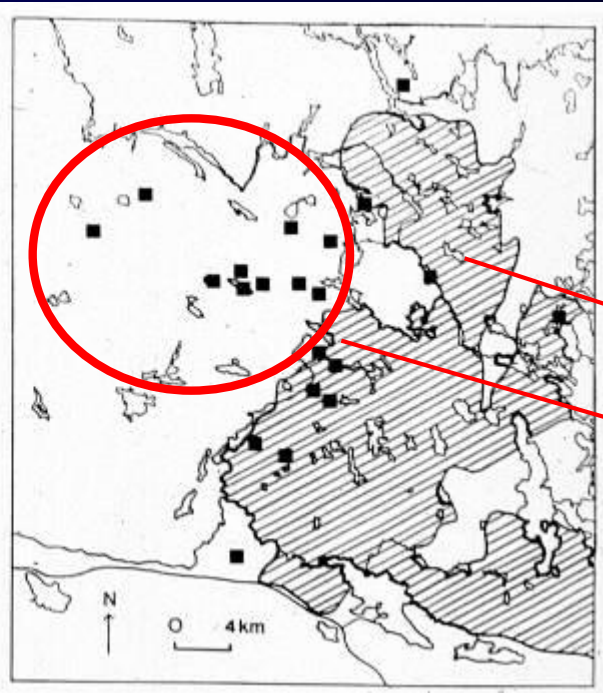
Time

Dependence on old forests

4 years after fire



5 years after fire



1980 fire

55-year-old
forests

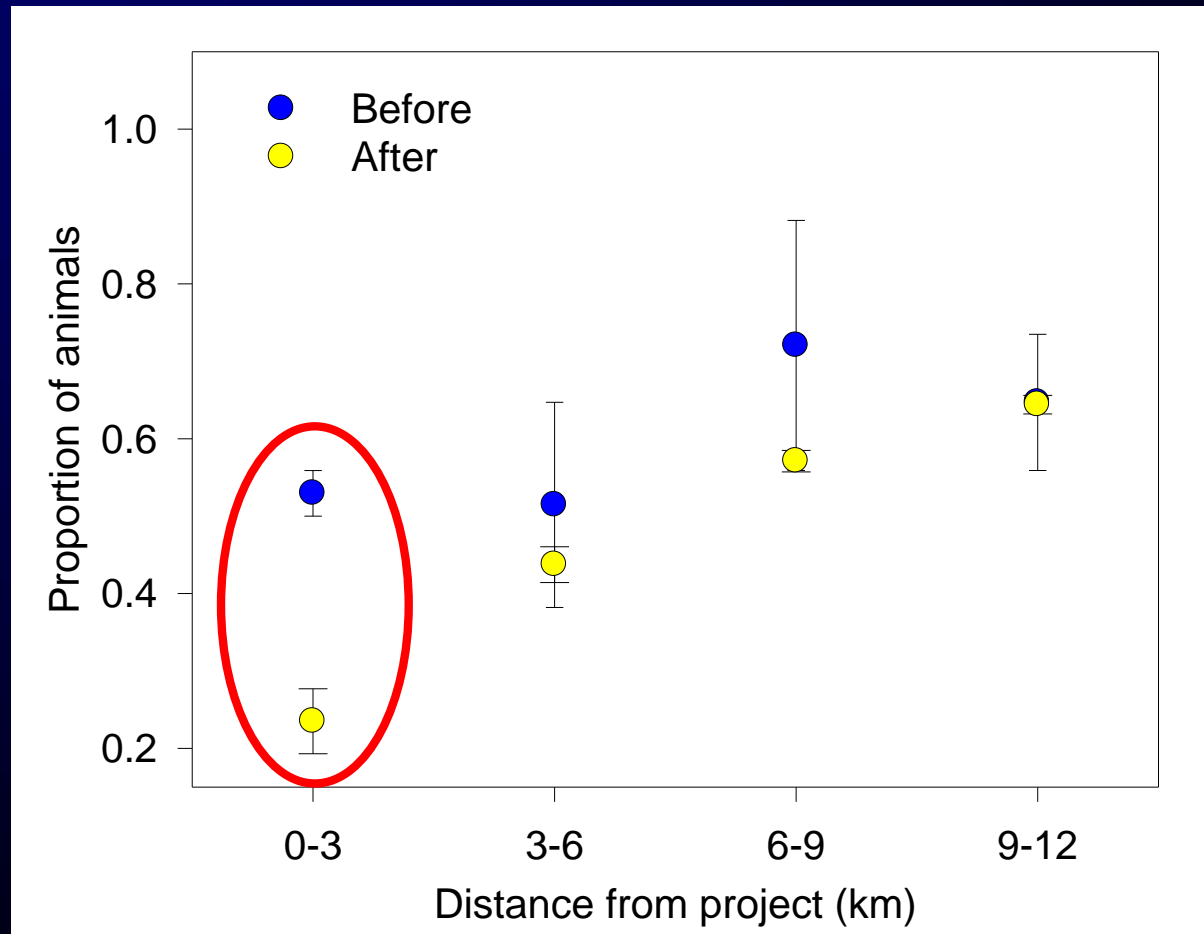
Caribou and space

An example from Newfoundland



- Star Lake hydroelectric development
- Caribou occupancy near the project
 - Before and after construction

Effective loss of habitat



“Slow” lifestyle

- Reproductive rate is inherently low
- Adult survival must be high for population persistence



“A fine balance between gains and losses in caribou populations”

Bergerud (1974)

How many woodland caribou?



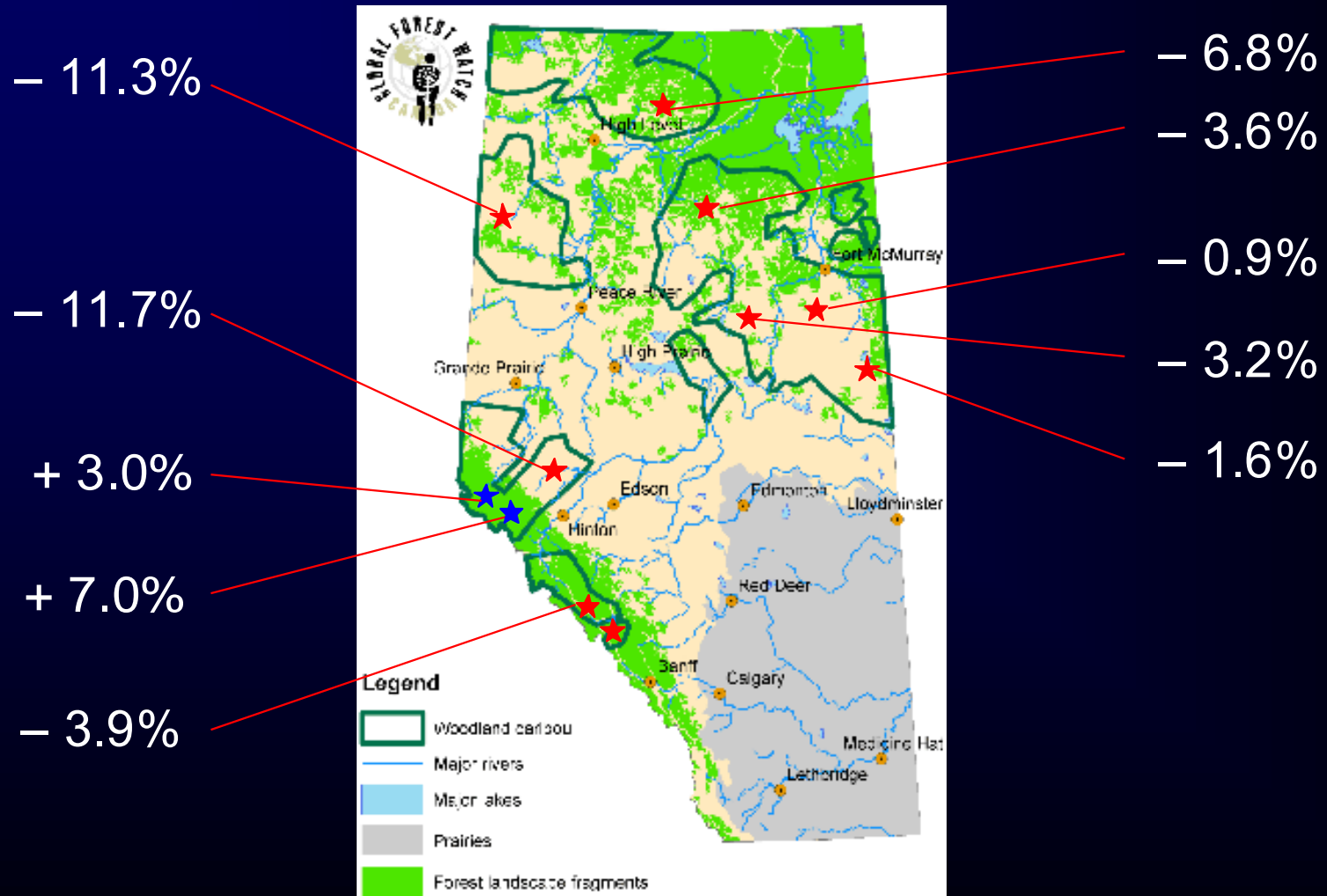
A question of survival and reproduction

Year	Recruitment (calves: 100 ♀)	Survival of adult ♀	Population growth
1999-2000	24	0.80	-10.4%
2000-2001	23	0.80	-10.8%

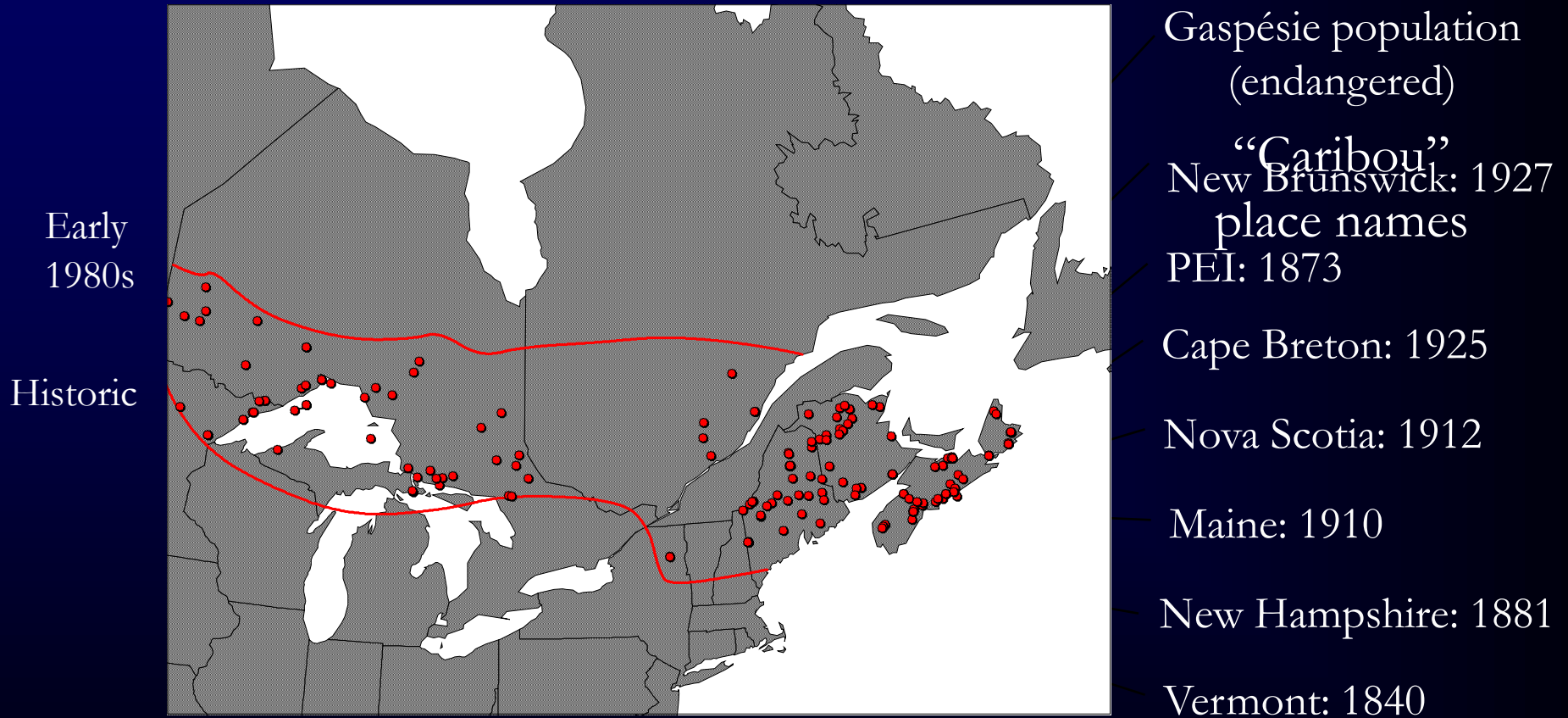


Caribou in trouble

Negative population growth

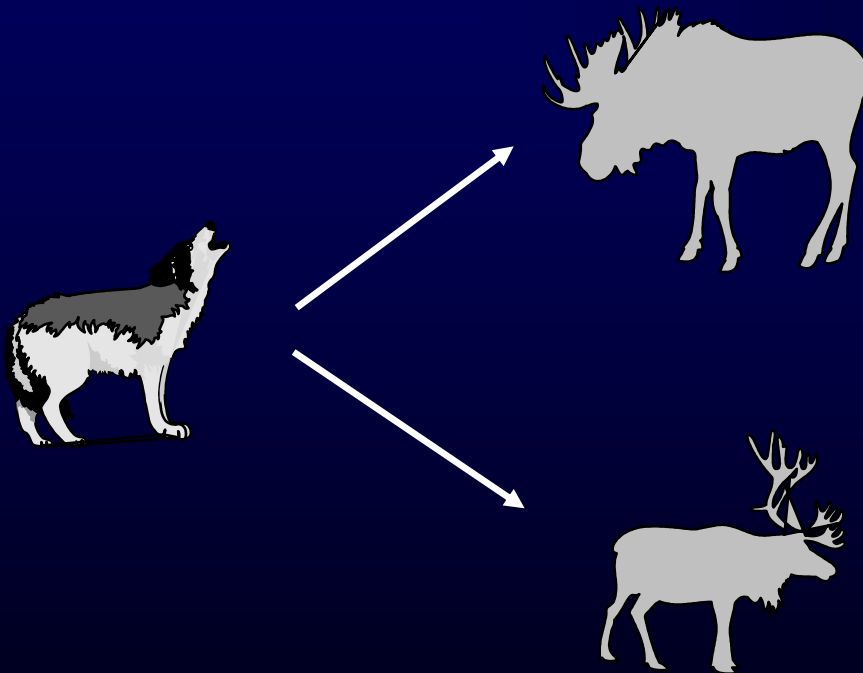


Range recession of *Caribou* in eastern North America

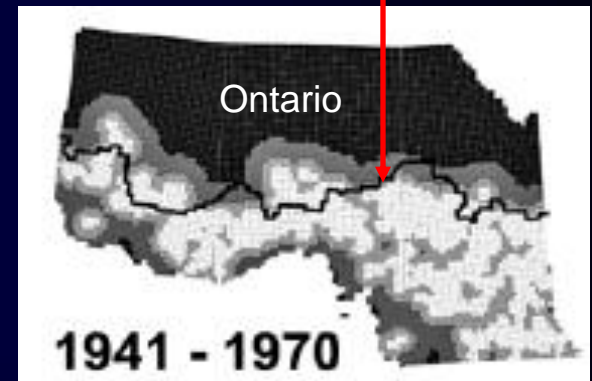


Mechanism of caribou decline

And evidence of a time lag



Caribou in 1990



Best predictor:
Forestry cuts 20 years earlier

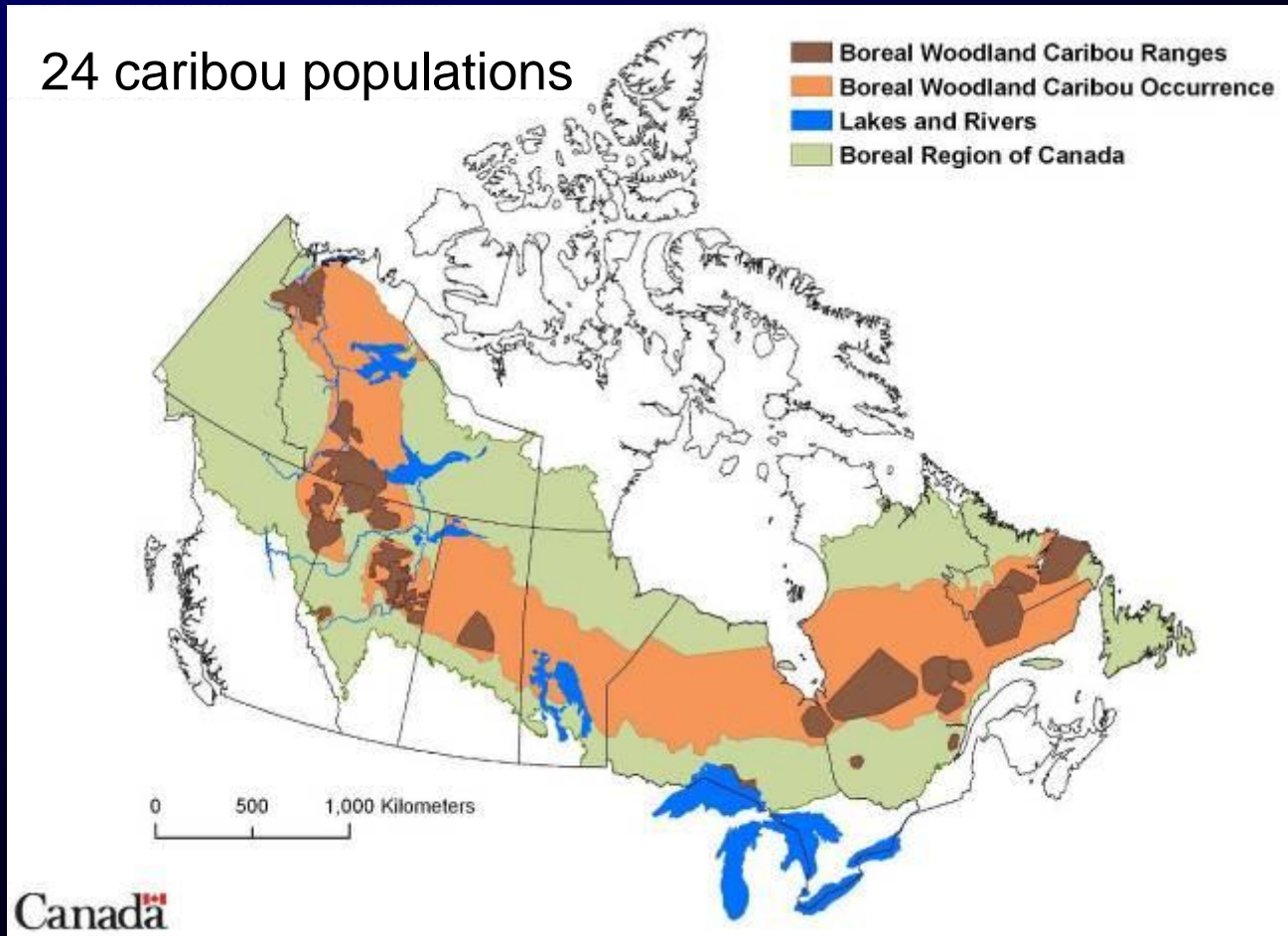
Caribou and habitat

What conditions are necessary?

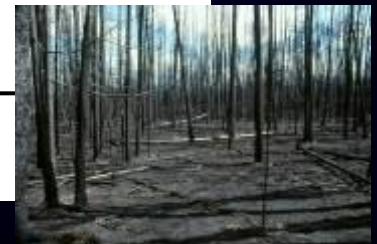
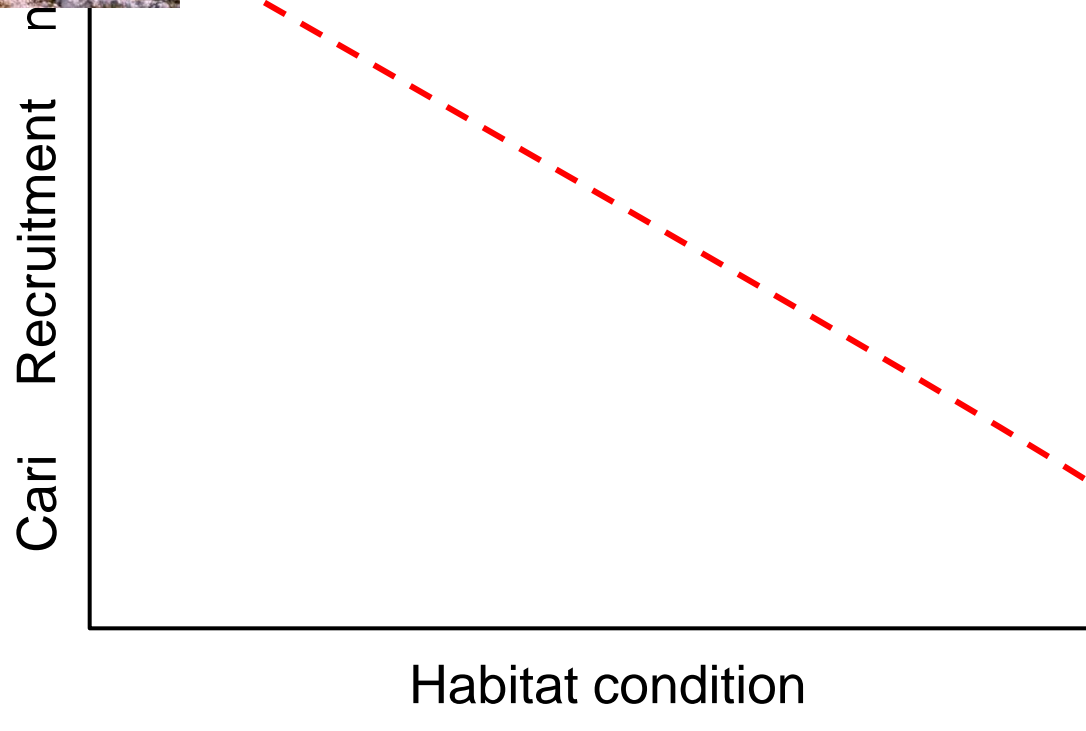


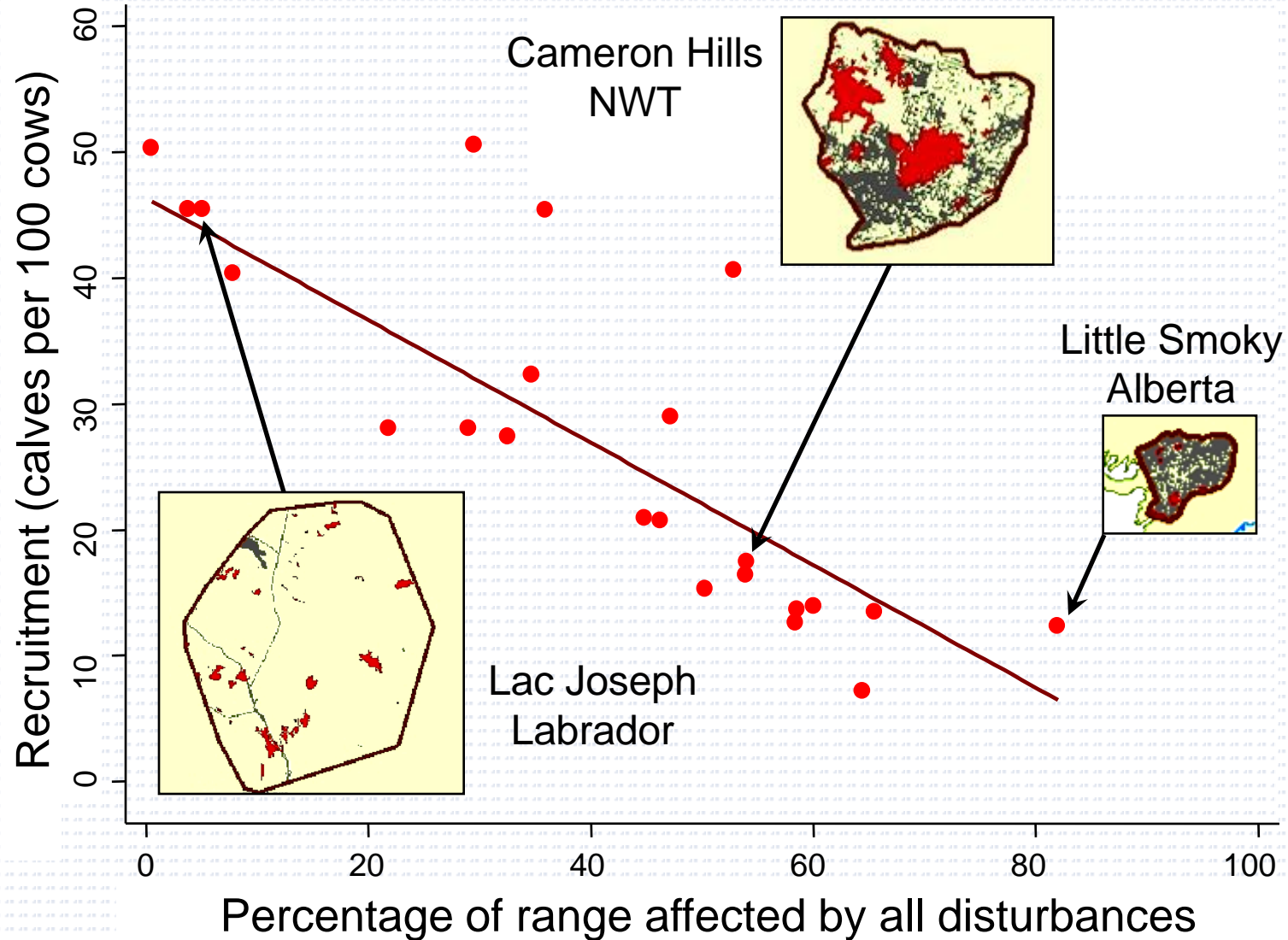
Caribou and habitat

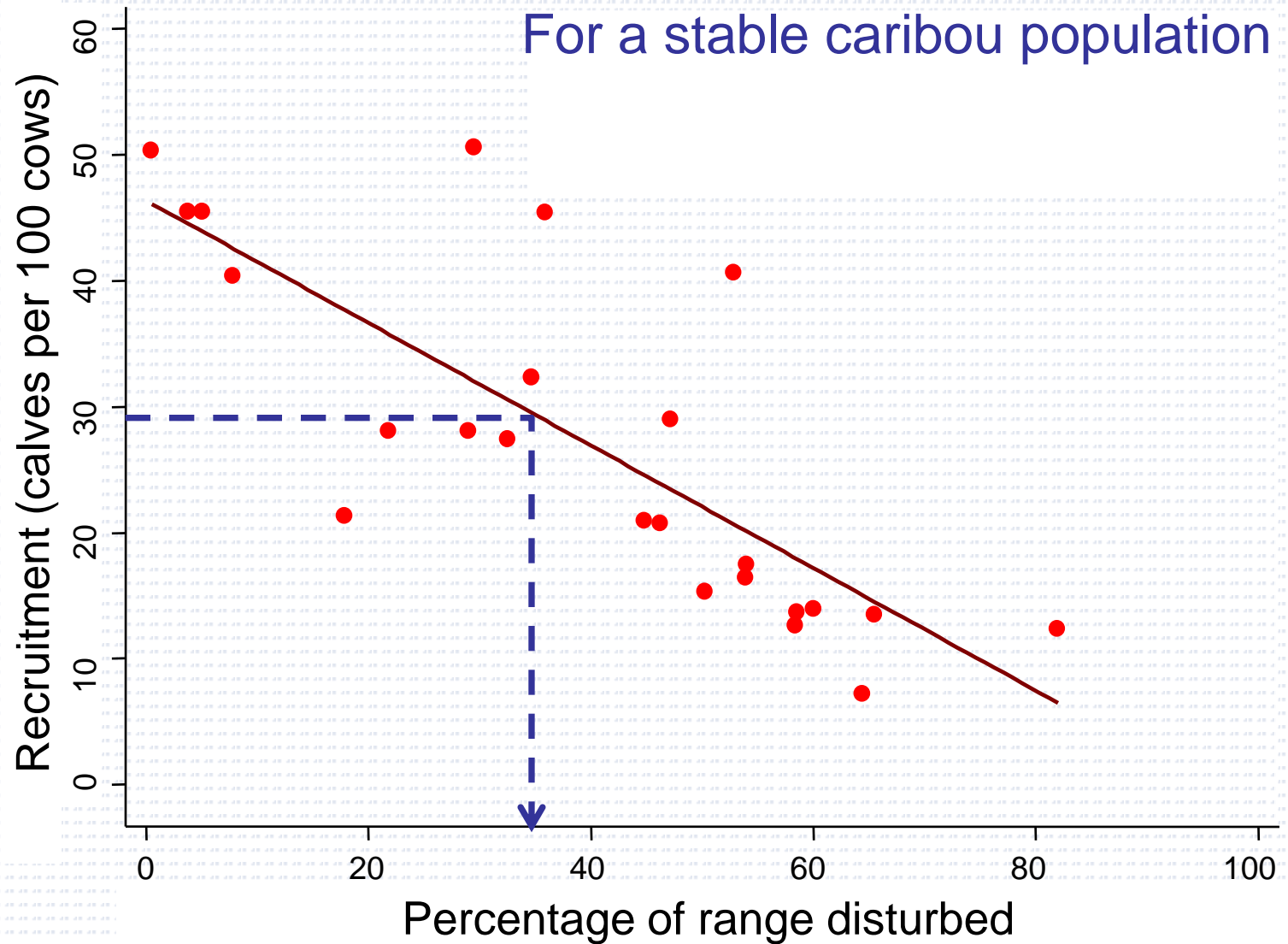
24 caribou populations



Caribou and habitat







The conservation of woodland caribou

The biological

- Caribou depend on forest habitat condition
 - Populations with high levels of disturbance face higher risk of extinction
- Caribou conservation must be done on broad scales
 - Effective habitat loss beyond developments - 1 km to 5 km
 - Population ranges - 1000s of square kilometres
 - Time delay between disturbance and caribou decline - 2 decades
 - Recovery of forests after fire - half-century

The conservation of woodland caribou

The conceptual

- We are prisoners of perspective
- Vast spaces
 - Beyond parcel perceptions of habitat
 - Whole landscapes and regions
- Long timeframes
 - Beyond multi-year plans and individual careers
 - A century plan for the boreal forest



How many woodland caribou?

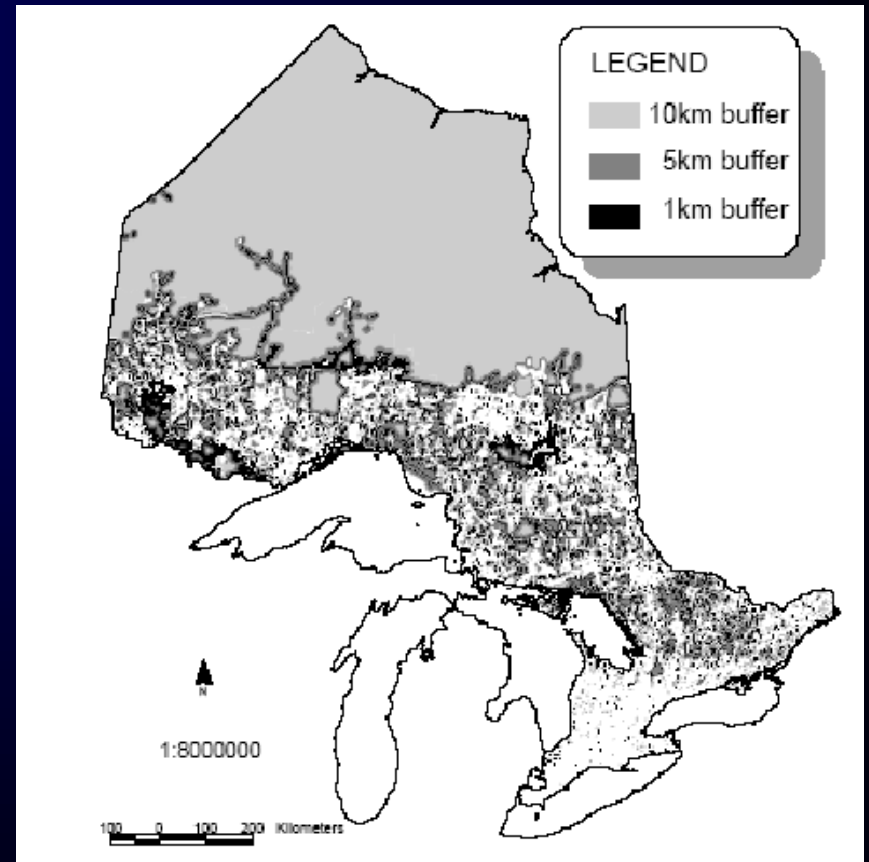
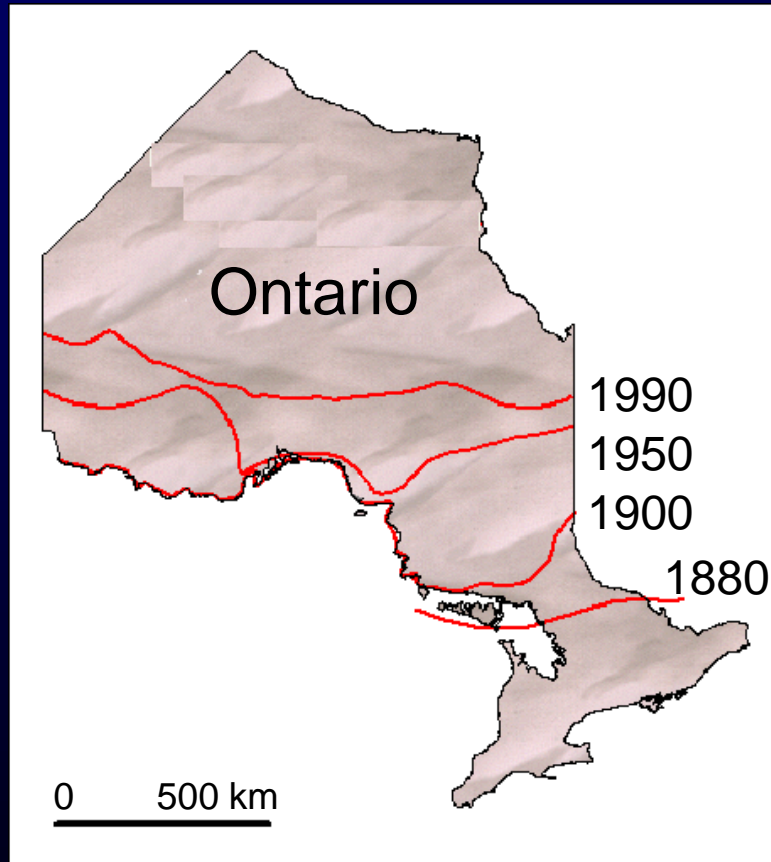


“It is to be hoped that there will never be so few caribou that it will be possible to count them.”

C.H.D. Clarke (1940)



A “wilderness frontier”



Davidson et al. (2000)

