The Taimyr herd of central Russia: the role of harvest in controlling populations

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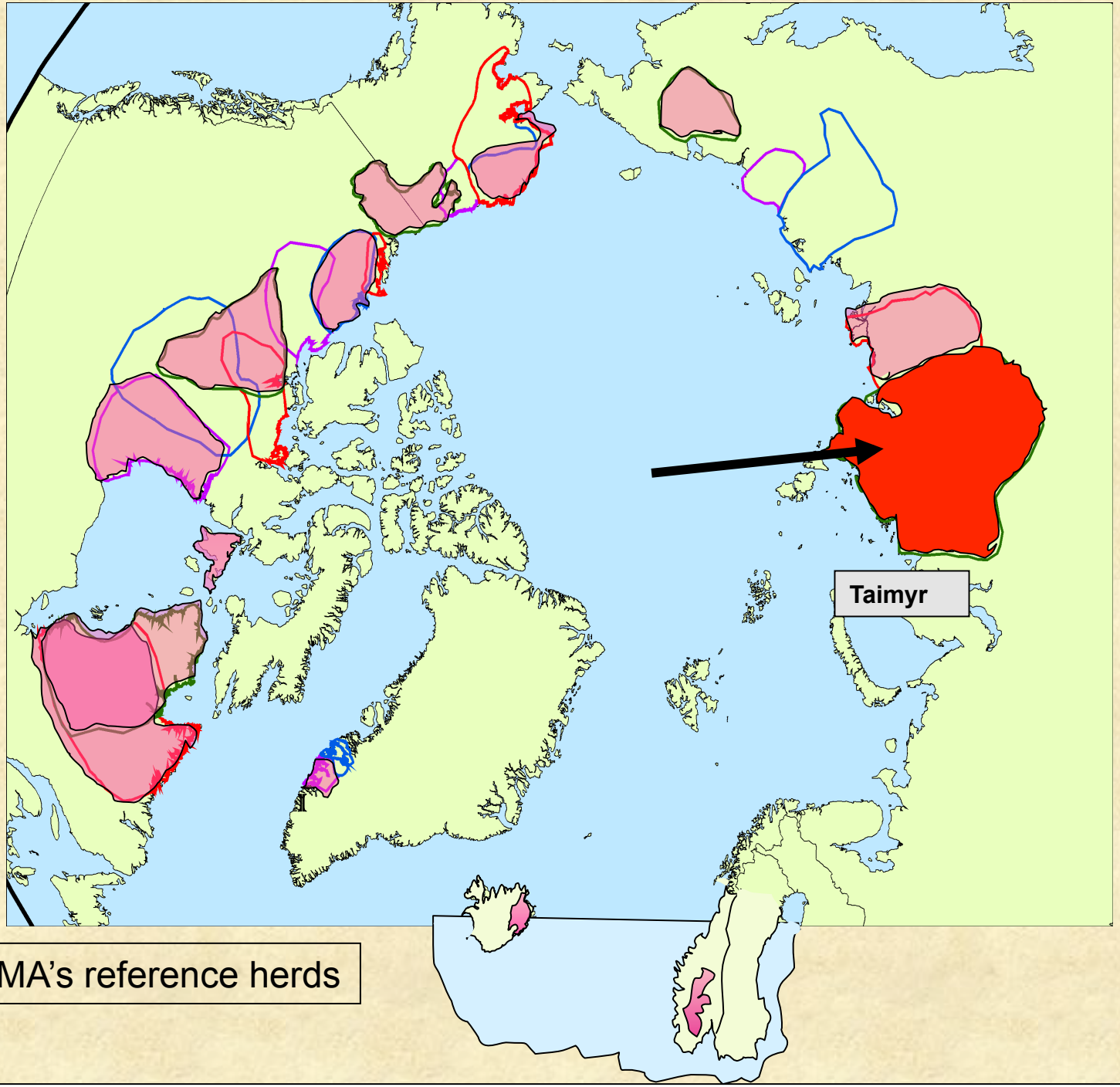
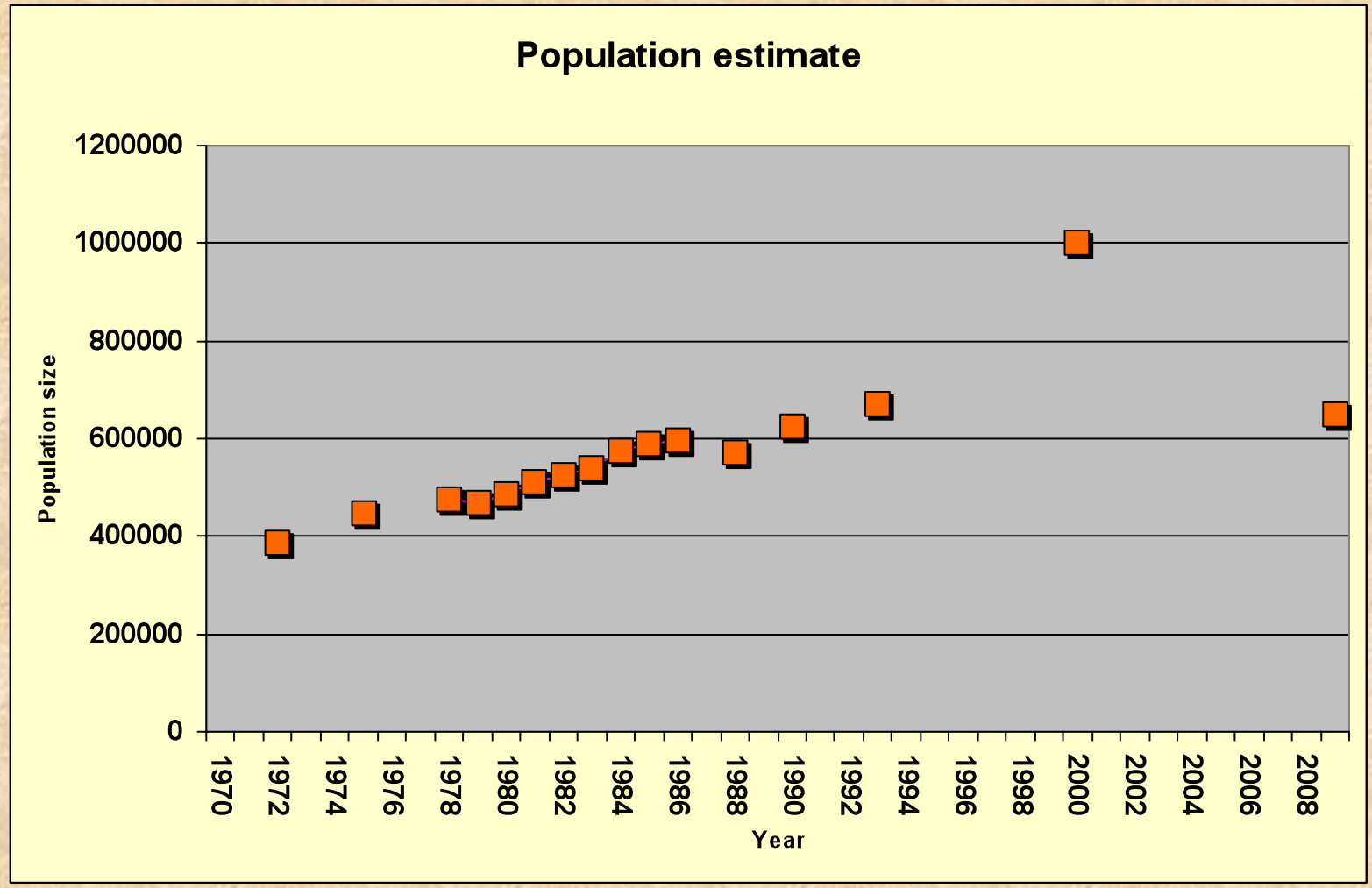


CARMA's reference herds

Population estimates for Taimyr Herd, 1970 - 2009

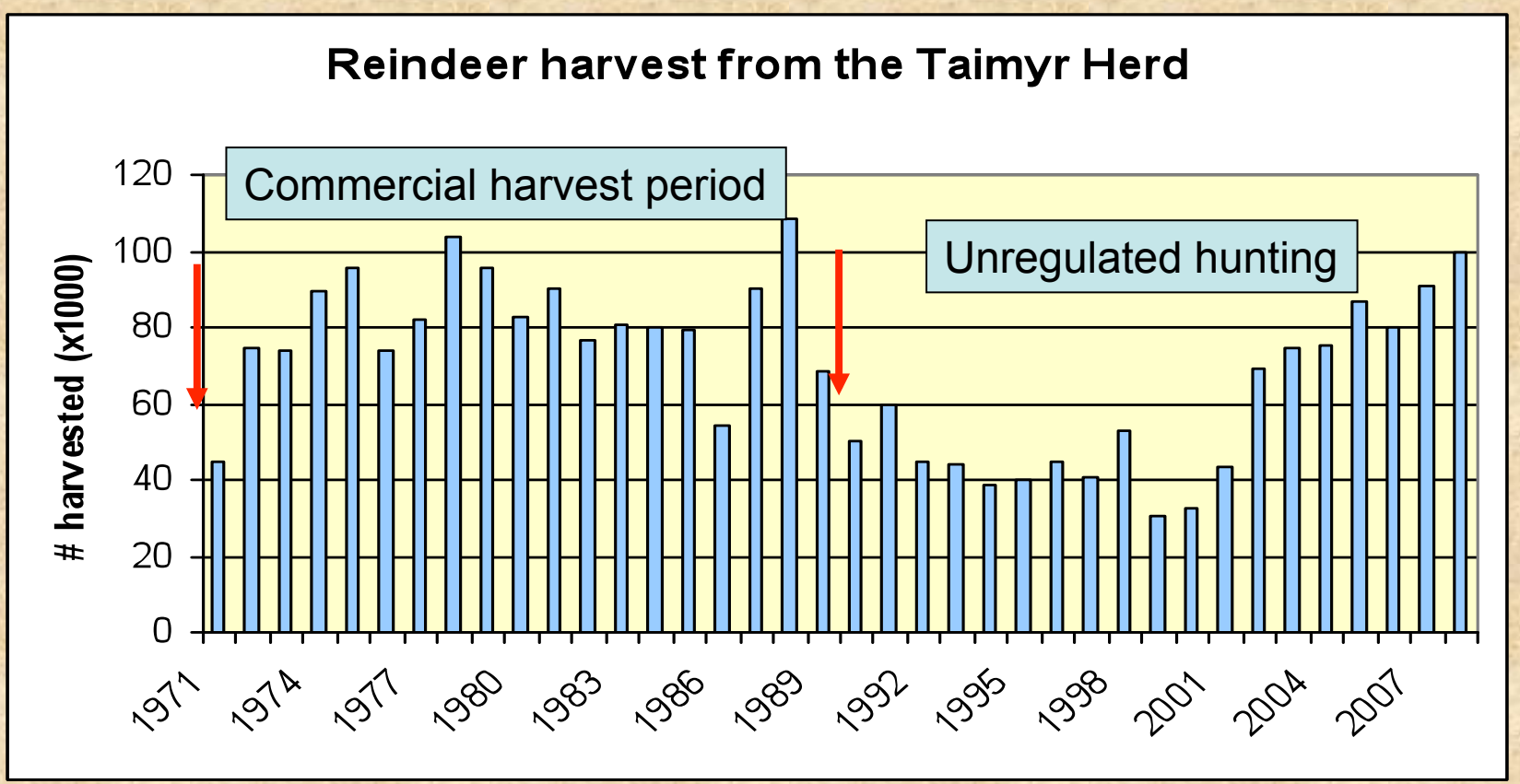


Taimyr management History?

Russian scientists divide the last 6 decades into:

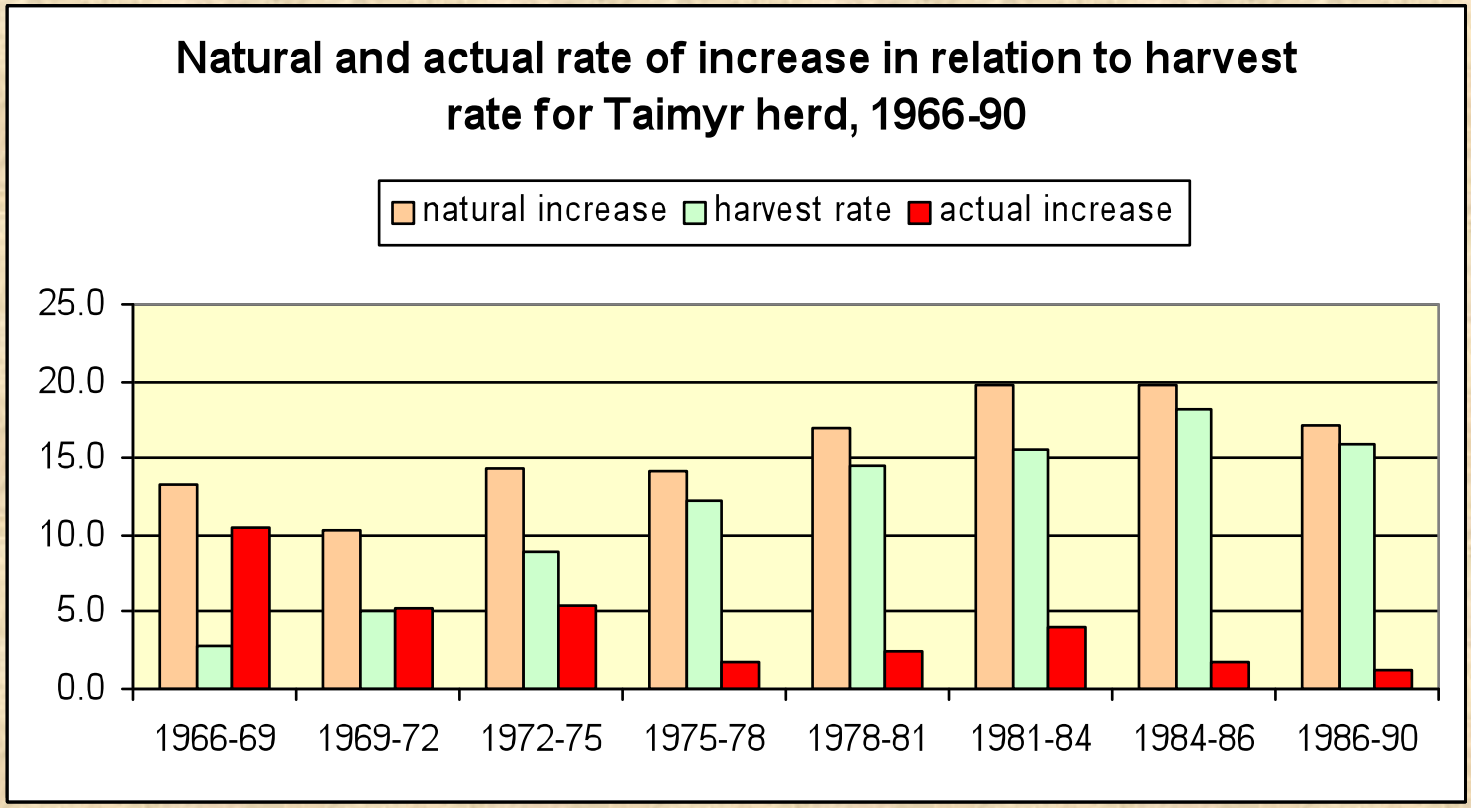
- ***Pre-commercial period (1950-1970)***: population grew from a low (110,000) in the 1950s to over 300,000 in 1970; harvest low; domestic stock lost to wild population
- ***Commercial hunting period (1970-1990)***: intensive, controlled “farming” of wild population to stabilize population and promote social and economic progress. Herd “stabilized” at ~ 600,000 by end of period
- ***Uncontrolled period (1990-present):*** subsidies removed, not economical to “farm” wild reindeer; drastically reduced harvest, population grew rapidly to 2000 to 1 million.

What is the role of harvest?

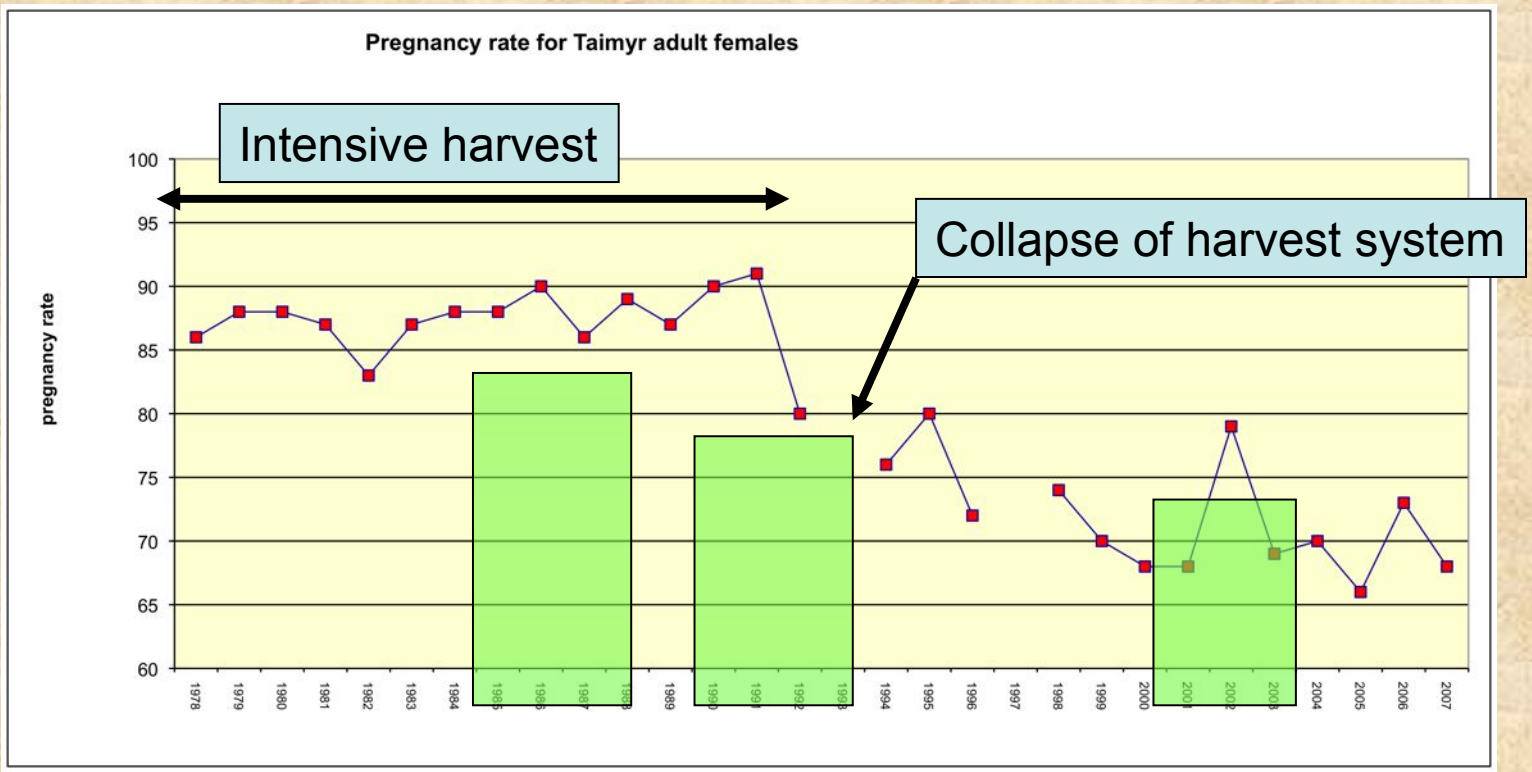


Impact of harvest on productivity of Taimyr herd

- **the commercial harvest industry, 1970-1990, became the major factor determining the numbers, sex, age, migration patterns and genetic diversity of the herd**



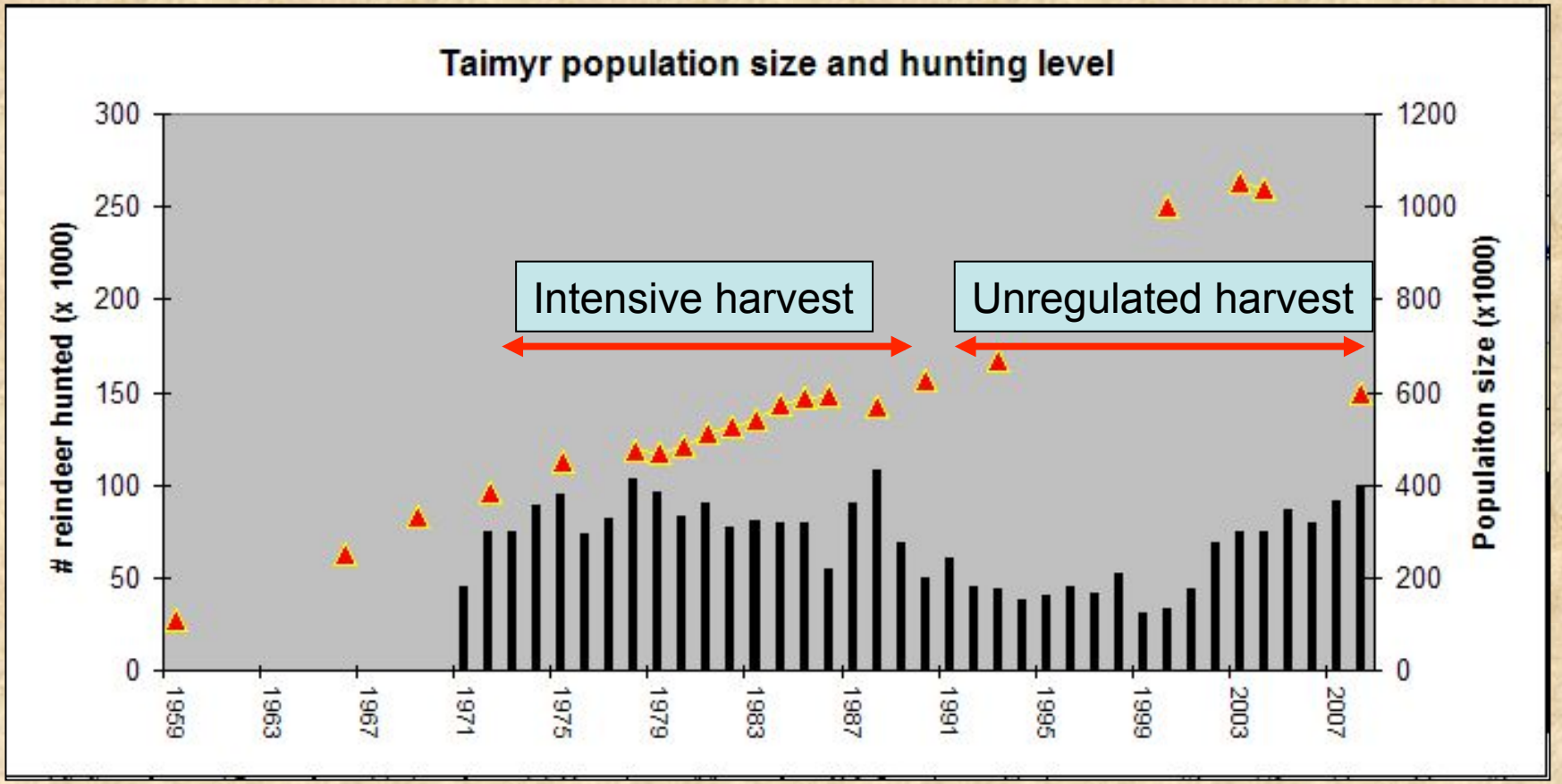
Taimyr pregnancy rates and body weight of pregnant reindeer



Wolf management also changed during this period

- 1950-1971 – wolf population was controlled by hunters to protect the domesticated reindeer herds;
- 1971-1992 – period of intensive wolf hunting using aircrafts to complement high commercial harvest of wild herd;
- 1993- to present – regular wolf hunting was stopped and that resulted in dramatic increase of wolf population

Population size and harvest policy



The present situation of the herd

- The last intensive monitoring and census of the herd was in 2000
- There is currently little monitoring of the distribution and calving ground locations
- However there is a evidence:
  - of depleted lichen resources,
  - lower body weights,
  - low fat reserves,
  - decline in the bull component,
  - drop in pregnancy rates,
  - increase in wolf predation,
  - increased illegal kill, and
  - increase spread of disease (30% brucellosis incidence)
- Current projection is that the herd has declined to 650,000 by 2009

Conclusions

- Over the last 6 decades harvesting (sometimes up to 22% of the herd) has controlled population size in the Taimyr herd
- Once harvest was drastically lowered, the herd growth rate increased dramatically despite lower body condition lower pregnancy rates and increasing wolf populations
- The result was a 15 year delay in the population peak
- It is believed that natural regulation halted the increase
- All indicators point to a rapidly declining herd, dropping by over 350,000 reindeer in the last decade
- monitoring, regular research and impact assessment are needed to make improve the management of Taimyr wild reindeer herd.

Comparing with North American “systems”

- Natural cycles are part of the ecology of these large migratory herds
- Each herd has evolved to best exploit their unique environment
- Harvest plays an important but different role which is a reflection of the institutional setting and management control
- What can we learn from each other?