

# MANAGEMENT OF THE TAIMYR WILD REINDEER POPULATION: PAST, PRESENT AND FUTURE

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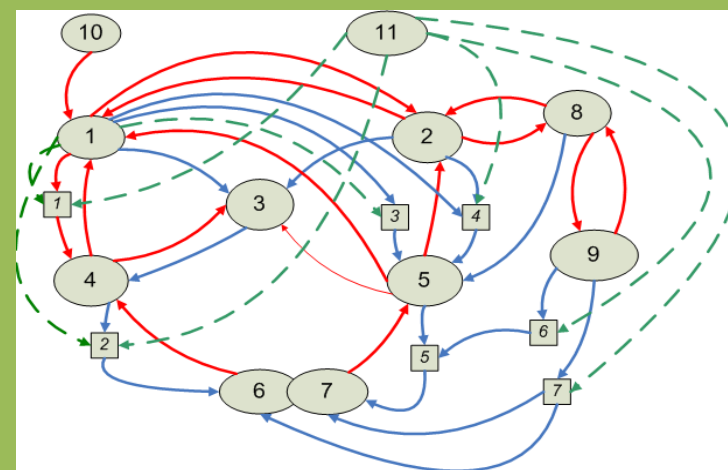
## ABSTRACT

The Taimyr Wild Reindeer Herd (TRH) is the largest wild reindeer herd in Eurasia. Its current population is approximately 700,000. The TRH population has been steadily increasing for the last several decades until the 1990. At that time, the complex Human-Rangifer system in Taimyr has been affected by the Soviet management system based on centralized science-based planning and punitive enforcement. The deterioration of this system in the 1990s led to the abandonment of sustainable management practices and extreme population growth in the TRH. Amid the lack of regulation in the 2000s the trend has reverted, and the TRH is rapidly losing its population due primarily to unregulated hunting and increase impacts of industrial activity on forage grounds. In this context it is necessary to rebuild the regulatory framework that would allow sustainable management of the wild reindeer population in Taimyr. Analyzing benefits and shortcomings of the Soviet system and state of the knowledge in the TRH dynamics we propose a new co-management framework based on bottom-up, community based system that is founded on the principles of shared responsibility and social justice.

## OBJECTIVES

- Improve understanding of the structure and internal relationships within the *Human-Rangifer-Pasture* system
- Use system approach to analyze Taimyr wild reindeer management framework
- Develop principles of TRH co-management system

## HUMAN-RANGIFER-PASTURE ECO-SYSTEM



Circles:

- (1) Aboriginal population (2) rural non-Aboriginal population, (3) Urban population, (4) domestic reindeer, (5) wild reindeer, (6) predators, (7) domestic reindeer pastures (8) wild reindeer pastures, (9) transportation and industrial infrastructure, (10) state funds, (11) science support

Squares:

- (1) Reindeer herding methods, (2) pasturing, (3-4) hunting technologies, (5) wild reindeer migration routes, (6) methods of migration control, (7) forage grounds

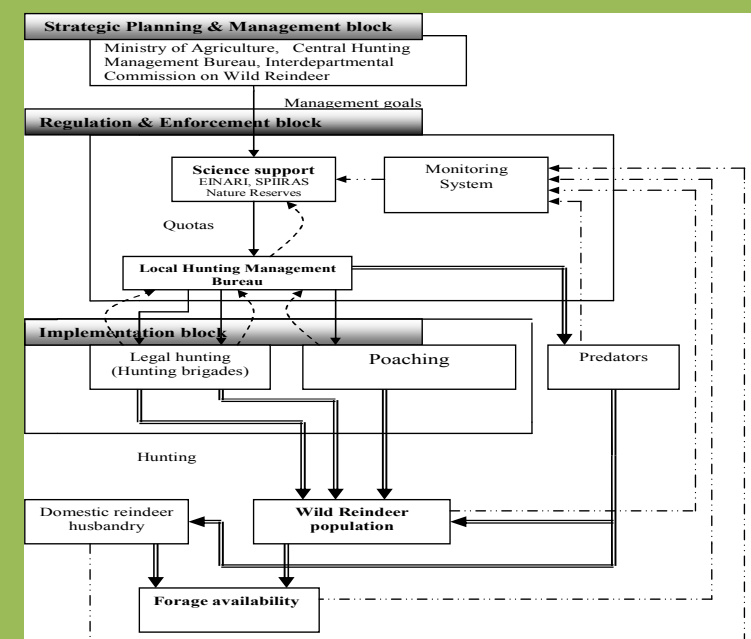
- positive impacts
- negative impacts
- - - information flows



## THE SOVIET WILD REINDEER MANAGEMENT SYSTEM

### General characteristics

- Top-down, highly centralized
- Driven by scientific planning, little local input
- Oriented towards maximizing production; wild reindeer is a natural resource
- Regulation is based on quotas;
- Punitive enforcement system
- Included four blocks:
  - Strategic Planning and Management
  - Regulation and Enforcement
  - Implementation
  - Ecosystem management



### Wild Reindeer Management System in Taimyr

**Subject of management:** Taimyr Reindeer Herd (TRH)

**Region/case study:** "Taimyrskiy" State Farm

**Strategic Planning & Management block:** maintain abundance and structure at the optimal level (maximization of production at sustainable levels; annual hunting = annual growth of population)

**Regulation and Enforcement block:**

*Local Hunting Management Bureau (Northern Detachment):*

**Management objectives and mechanisms:**

- enforcement of quotas
- implementation of punitive measures for overhunting and poaching (fines, revocation of licenses, criminal charges)

**Science support:**

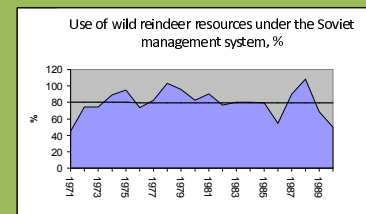
- population estimates and forecast
- determination of hunting quota

**Implementation block:** *Hunting brigades* (Taimyrskiy State Farm and NPO "Arctic"), Aboriginal households, independent hunters.

**Ecosystem-level regulation:** wild reindeer, competitors, predators, forage base.

**Management objectives and mechanisms:**

- conservation and protection of forage grounds
- minimization of anthropogenic impacts (fences, gaps in pipelines, etc.)



## POST-SOVIET PERIOD

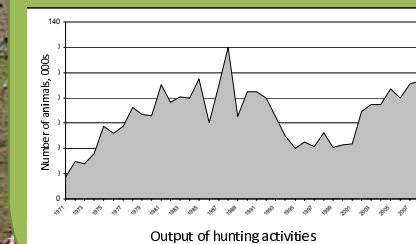
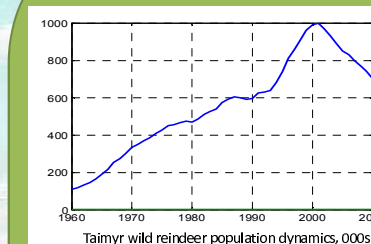
### The 1990s

With the move to the market economy the management structure and management institutions disappeared. The average production declined to 40,000 animals. Aerial surveys stopped due to the lack of necessary funding. The effectiveness of quota enforcement by the Hunting Management Bureau deteriorated. As a result, blocks 2 and 3 of the management system were dismantled.

Rapid deterioration of management led to a drastic increase in wild reindeer abundance in Taimyr. The population reached 1,000,000 animals in 2000. This population explosion triggered ecosystem mechanisms of abundance control.

### The 2000s

In the beginning of the 21st century, the situation deteriorated further. The number of hunting enterprises and individual hunters increased, while control and enforcement are virtually absent. Consequently, poaching reached 80,000-90,000 reindeer per year. In addition, anthropogenic impacts on forage grounds intensified. Deterioration of forage grounds is accompanied by a growing population of predators. Existing forecast indicates that at the present level of anthropogenic pressure the TRH population can decline to 150,000-200,000 by 2012.



## TOWARDS A NEW (CO)-MANAGEMENT SYSTEM

### General characteristics

- Bottom-up, decentralized, based on cooperation of farms and Aboriginal communes
- Oriented towards rational use of reindeer and just distribution of products and revenues
- Regulation based on the shared responsibility (co-management). Hunters directly participate in monitoring, conservation, determination of quotas and enforcement
- Co-management may be institutionalized through creating cooperatives (Inter-enterprise consortia).

### New structure

**Strategic Planning & Management block:** Department of natural Resources

**Regulation and Enforcement block:** *Local Hunting Management Bureau*

**Implementation block:**

*Cooperatives (Inter-enterprise consortia)*

- coordinate hunting activities
- collect hunting statistics
- determine quotas for members
- control hunting methods and timing
- conduct monitoring based on traditional knowledge
- interact with outside actors (oil companies, government, etc).

