

# Participatory planning of anti- dispersal fence for wild reindeer conservation

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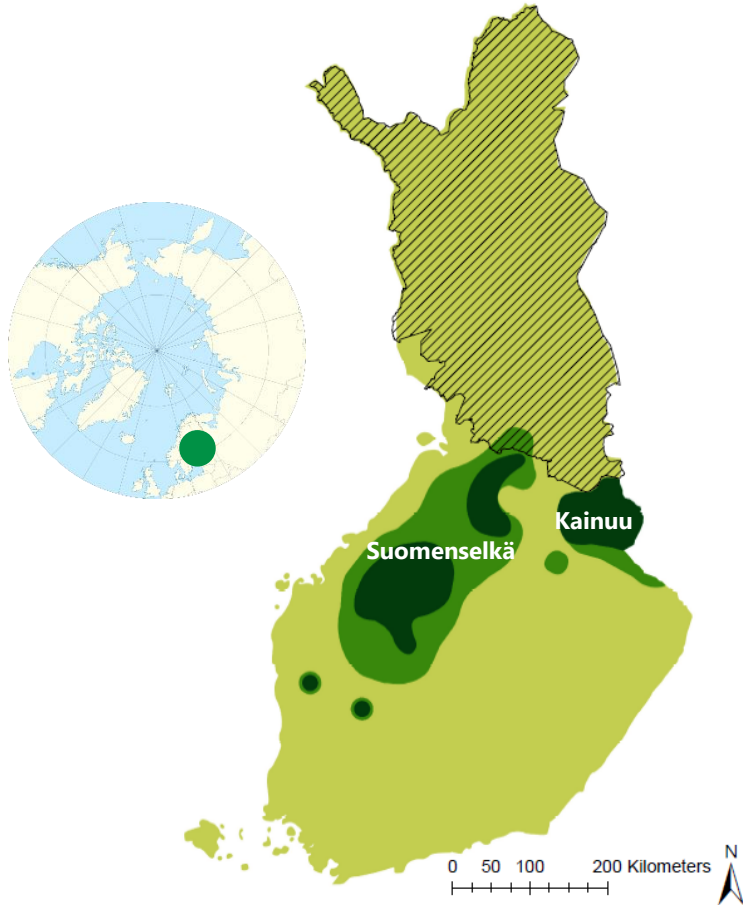
# Finnish forest reindeer


## *Rangifer tarandus fennicus*

World population 5000 animals: 2800 in Finland


Population status Near Threatened (NT)


Major threats include land use changes, predation and crossbreeding with semi-domestic reindeer



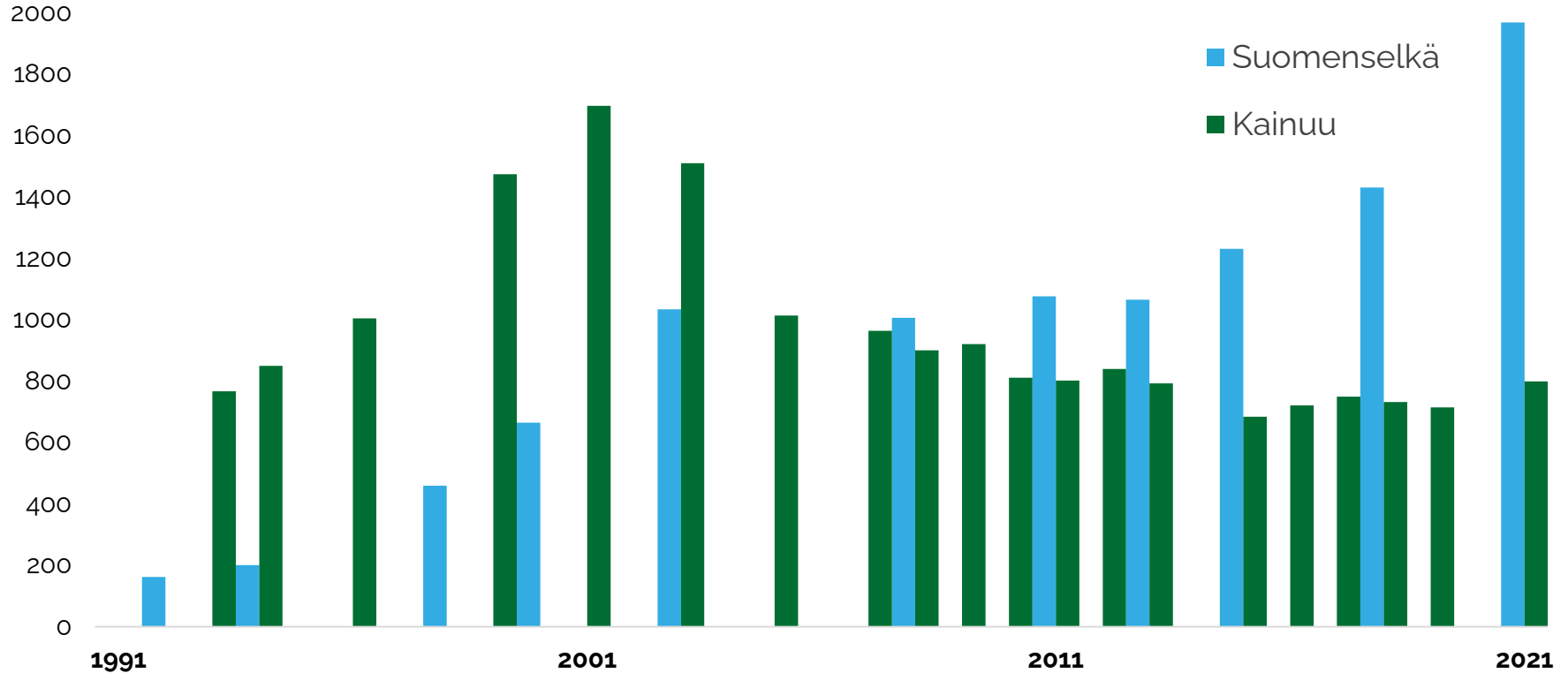
 Semi-domestic reindeer husbandry area

 Finland

 Finnish forest reindeer range

 Finnish forest reindeer migration range

# Finnish forest reindeer population 1991-2021





# Preserving the wild Finnish forest reindeer genome

The responsibility of Parks & Wildlife Finland since 2016

- Continuing work with project based funding
- Long history in Kainuu region, including a 90-kilometer anti-dispersal fence built in 1990s, more recently increasing work in Suomenselkä

## Current project (2020-2022)

- Practical field work and development of field protocols
- Preliminary assessment of the effects of a reindeer fence in Northern Ostrobothnia
- Stakeholder cooperation and management
- Budget: 665 000 CAD, funded by Ministry of Agriculture and Forestry of Finland



# Preliminary assessment of the effects of a reindeer fence in Northern Ostrobothnia

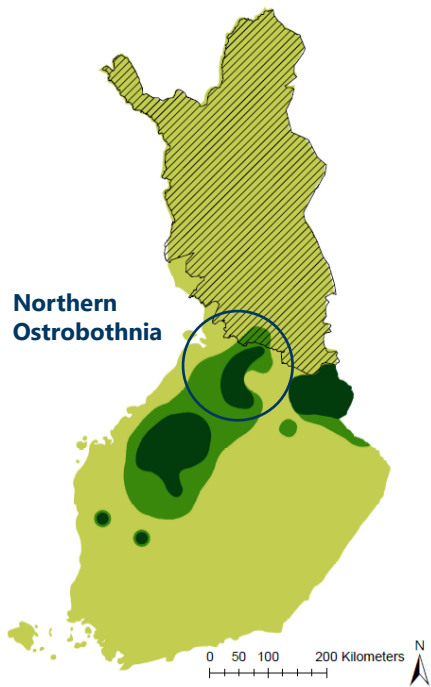
***Is the fence possible to build?  
...How and where?***

Assessment providing information for the Ministry of Agriculture and Forestry of Finland for decisionmaking

Complex situation with multiple stakeholders' viewpoints

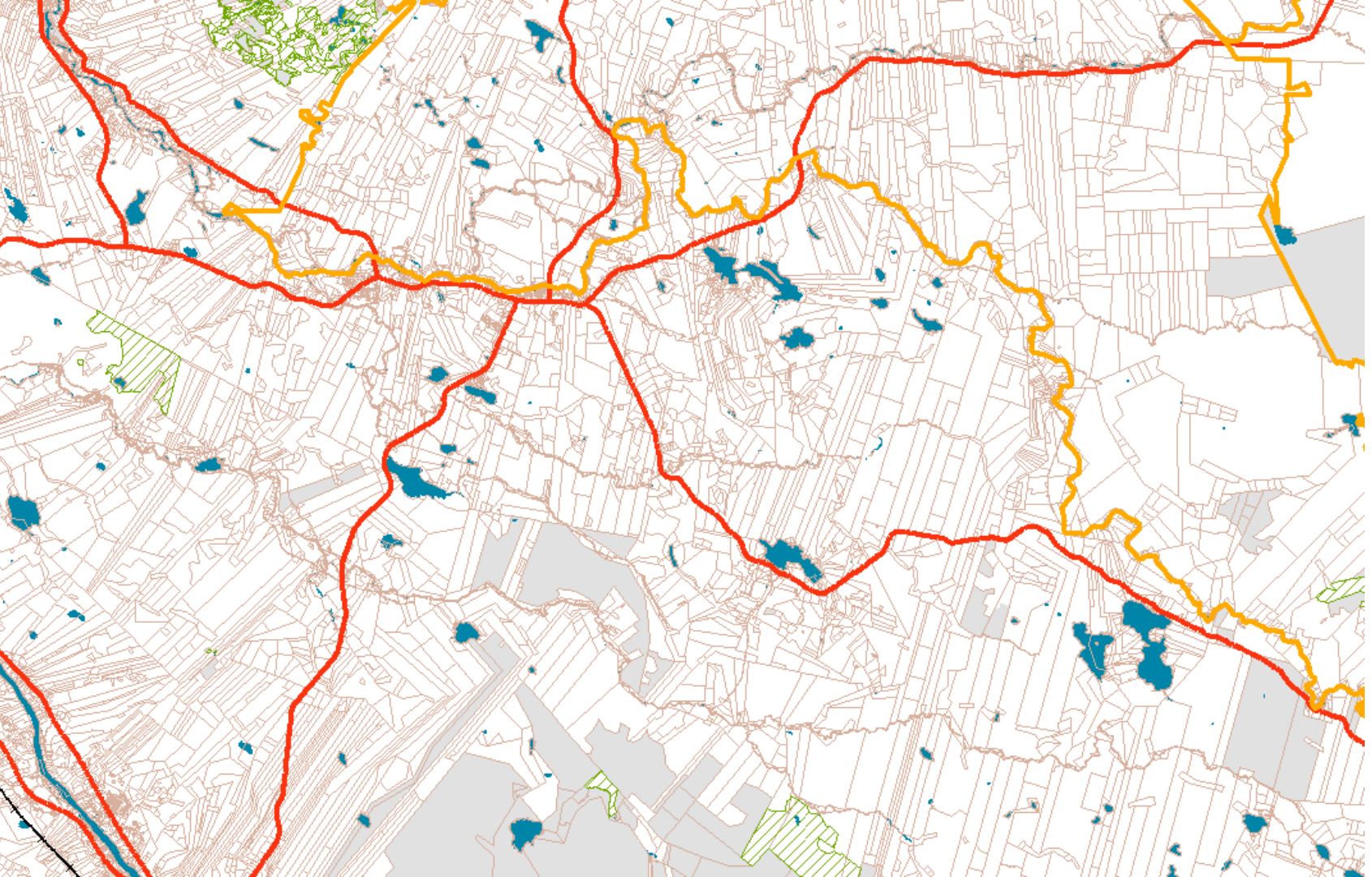
Main objective is preserving the wild Finnish forest reindeer genome by preventing crossbreeding with semi domestic reindeer

- Reindeer Herding Cooperatives
- Main roads
- Railways
- Conservation areas
- Rivers, lakes, sea
- Government owned land



25 12,5 0 25 kilometers





5 kilometers

# Methods

## Social impact assessment

## Ecological impact assessment

## Habitat analysis

## Technical GIS analysis

## Property analysis

**SPRING 2021**

**PART 1**

### Interviews

Stakeholder interviews with representatives from each group

### Literature review

Based on peer-reviewed literature and relevant project reports

### Calving areas

Analysis of summer pastures

### Road network

Is the road network possible to utilize?

### Landowner analysis

Who are the biggest landowners in the area?

**SUMMER 2021**

**PART 2**

### Questionnaire

Local questionnaires in project area and Kainuu with Maptionnaire software

### Expert interviews

Experts of different species and fence effects

### Terrain analysis

Physical restrictions for fence building

**AUTUMN 2021**

**PART 3**

### Workshops

Participants selected from people answering the questionnaire

### Visual map analysis

Spatial data from GPS-tagged animals

### Wintering areas

Visual map analysis

### Possible fence lines

Where the fence would be possible to build?

### Landowner analysis

**WINTER 2021-21**

**Report to the Ministry of Agriculture and Forestry of Finland**



# Methods

		Social impact assessment	Ecological impact assessment	Habitat analysis	Technical GIS analysis	Property analysis
<b>SPRING 2021</b>	<b>PART 1</b>	<b>Interviews</b> Stakeholder interviews with representatives from each group	<b>Literature review</b> Based on peer-reviewed literature and relevant project reports	<b>Calving areas</b> Analysis of summer pastures	<b>Road network</b> Is the road network possible to utilize?	<b>Landowner analysis</b> Who are the biggest landowners in the area?
<b>SUMMER 2021</b>	<b>PART 2</b>	<b>Questionnaire</b> Local questionnaires in project area and Kainuu with Maptionnaire software	<b>Expert interviews</b> Experts of different species and fence effects		<b>Terrain analysis</b> Physical restrictions for fence building	
<b>AUTUMN 2021</b>	<b>PART 3</b>	<b>Workshops</b> Participants selected from people answering the questionnaire	<b>Visual map analysis</b> Spatial data from GPS-tagged animals	<b>Wintering areas</b> Visual map analysis	<b>Possible fence lines</b> Where the fence would be possible to build?	<b>Landowner analysis</b>

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# Methods

		<b>Social impact assessment</b>	<b>Ecological impact assessment</b>	<b>Habitat analysis</b>	<b>Technical GIS analysis</b>	<b>Property analysis</b>
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**WINTER 2021-21**

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## Pros

- Preventing the crossbreeding of the reindeer subspecies
- Reducing the semi-domestic reindeer wandering off from the reindeer husbandry area
- Positive side effects to non-target species

### Ecological impact assessment

#### Literature review

Based on peer-reviewed literature and relevant project reports

#### Expert interviews

Experts of different species and fence effects

#### Visual map analysis

Spatial data from GPS-tagged animals

## Cons

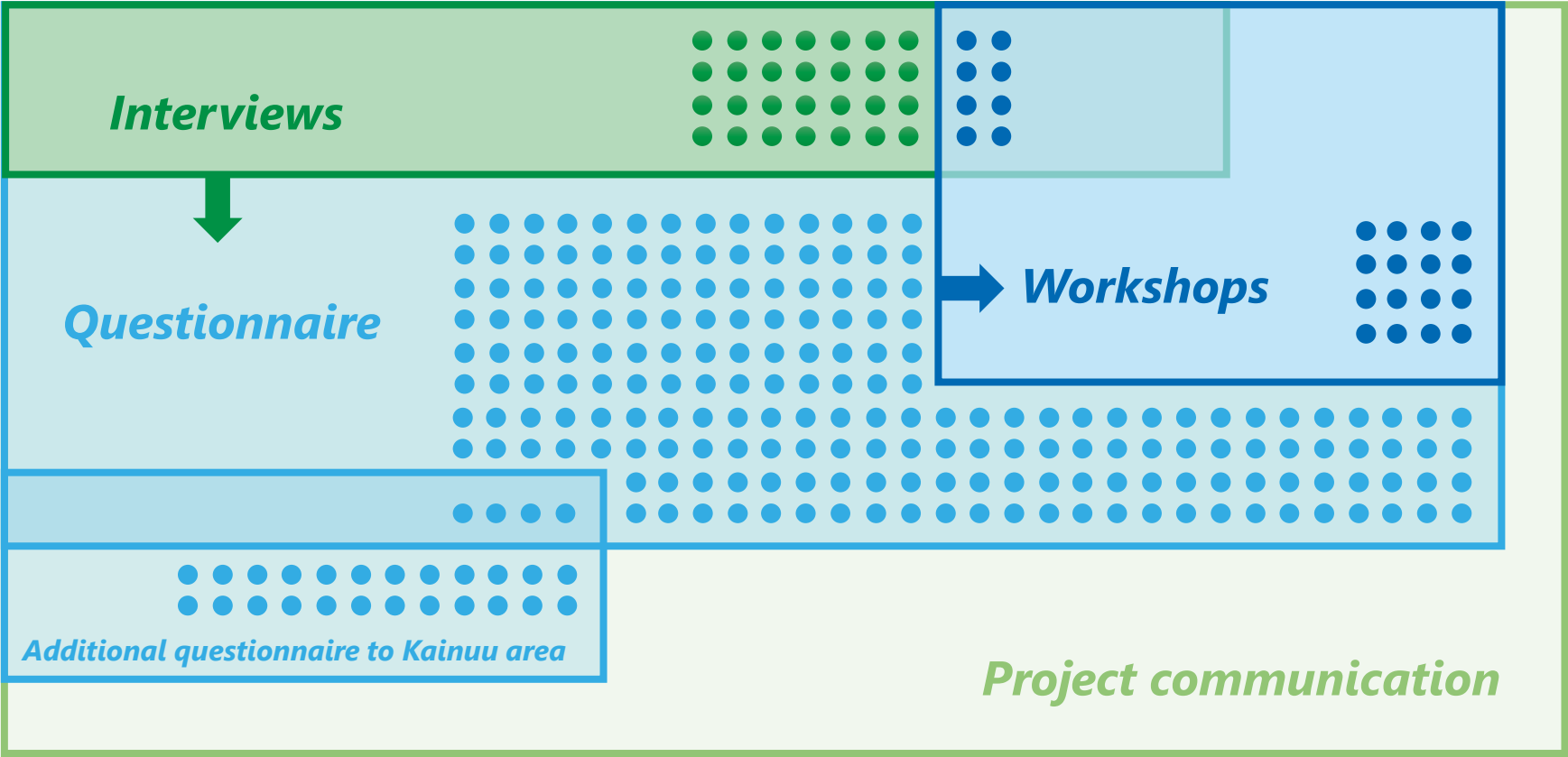
- **Animal collisions resulting in mortality or injuries**
  - Grouses
  - Reindeer
  - Other animals
- **Disrupting migration and other movement**
  - Moose
  - Wolves
  - Some birds
  - (Seed dispersal)
- **Effect in behaviour**
  - Predation
  - Activity budget
- **Other negative side effects**
- **Cumulative effects to ecosystems**

# Methods

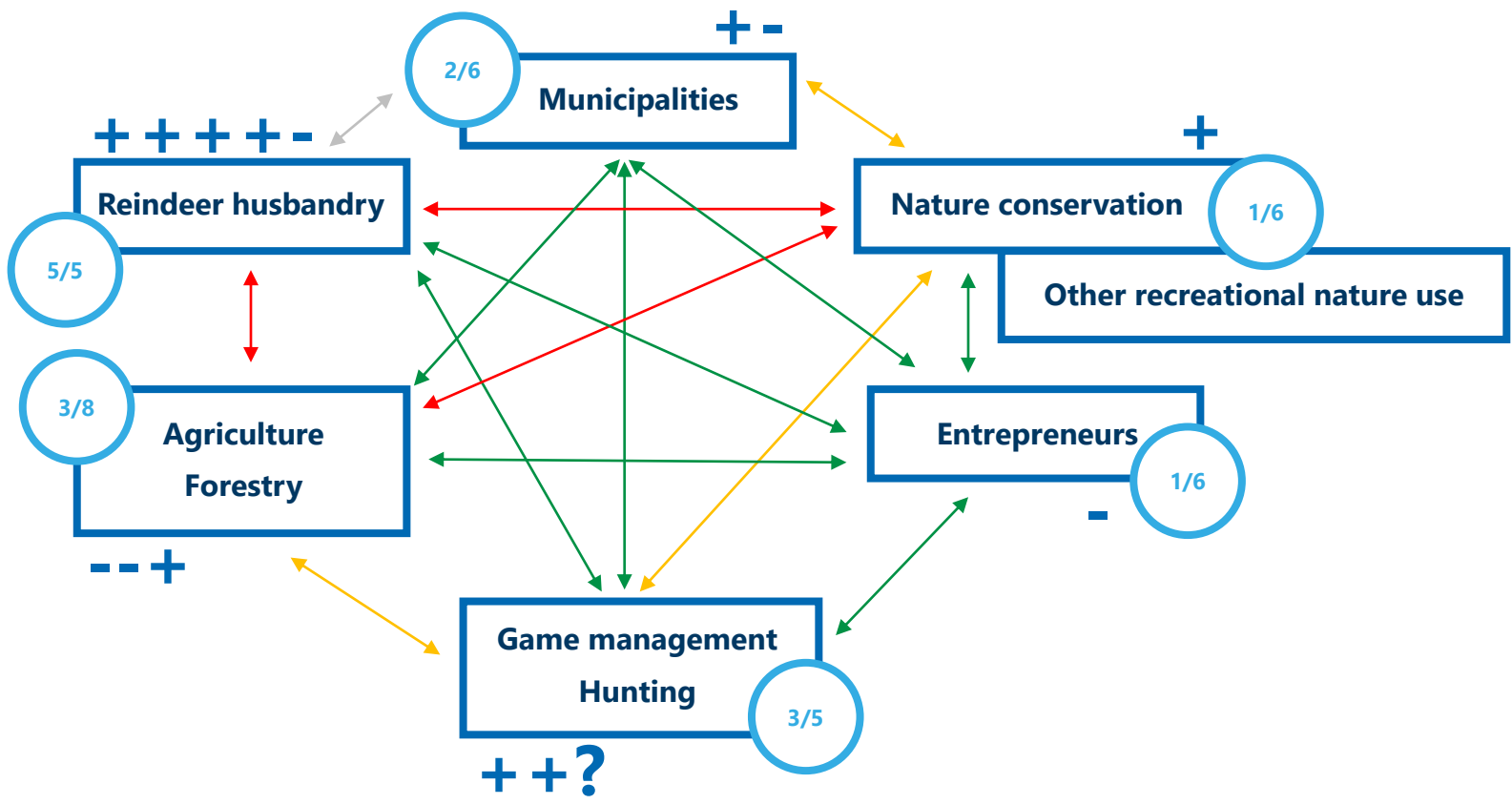
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Social impact assessment: Interviews





## Exchanging knowledge

→ *We would like to hear experiences on the ecosystem level effects of fences*

← *We can share and discuss methods in participatory planning in conservation*

Feel free to contact me!

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