Human Dimensions in Wildlife Management

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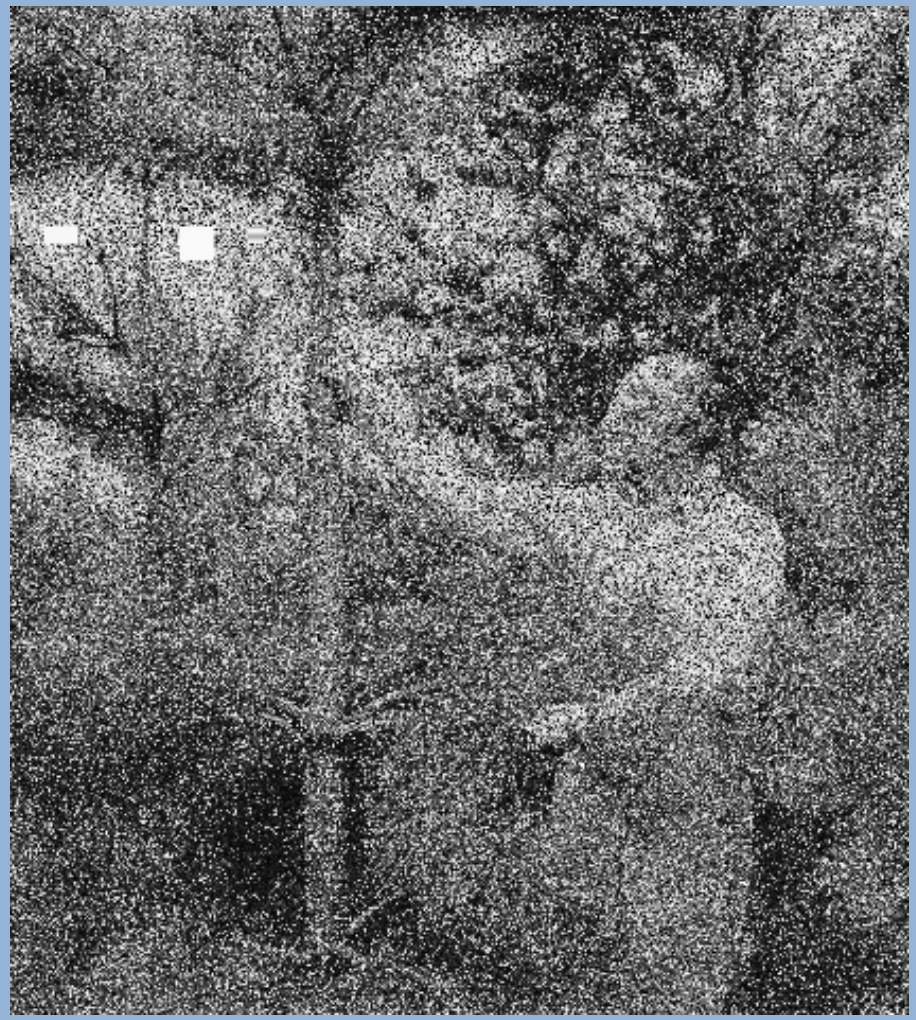
What is the “human dimension”?



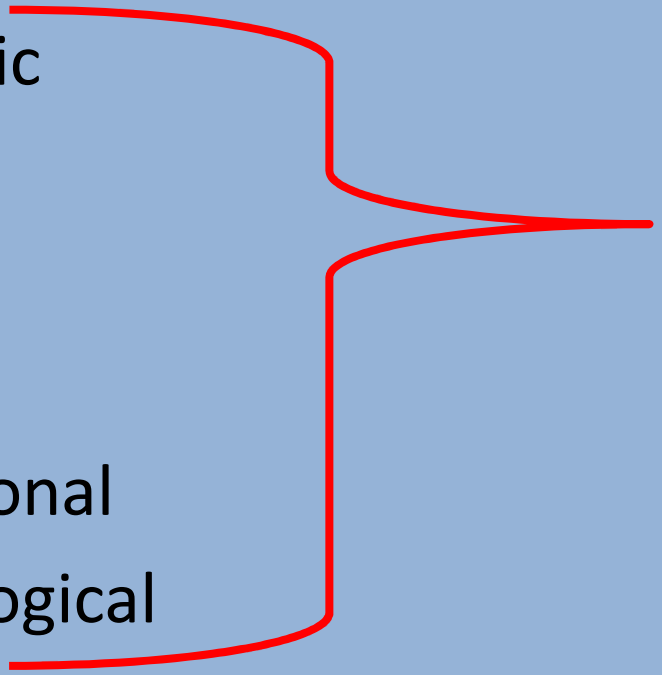
Aldo Leopold 1887 - 1948

*The problem of game management is not how we should handle **the deer** but how we should handle **the people***

Seven dimensions of natural resources management

after Mitchell (1989)

- Biophysical
- Economic
- Social
- Political
- Legal
- Institutional
- Technological



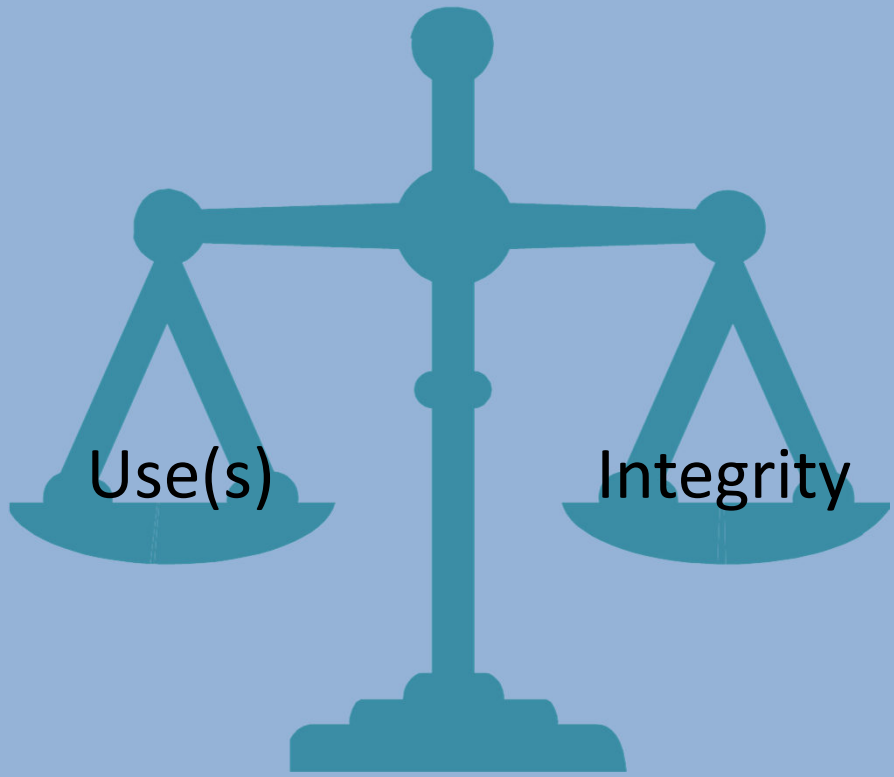
Human dimensions

What is the “human dimension”?

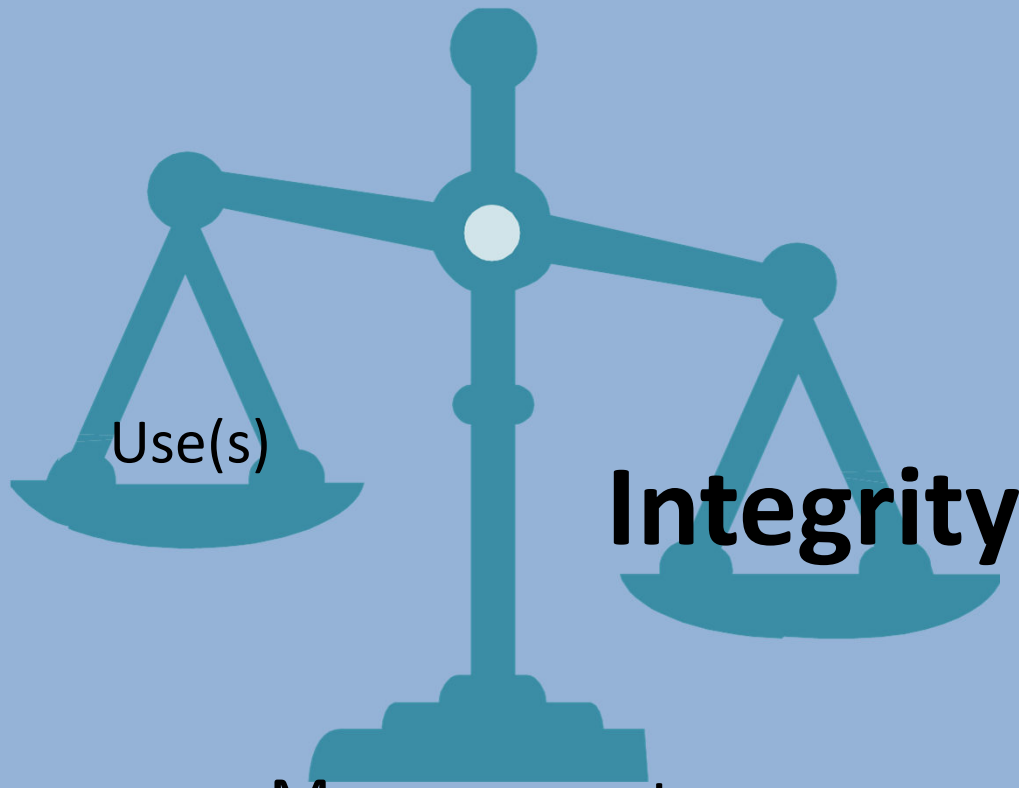
The challenge of understanding and clarifying stakeholders’ perspectives on [resource] management programs and issues, and systematically incorporating such insight into decision making.”

Decker and Enck 1996

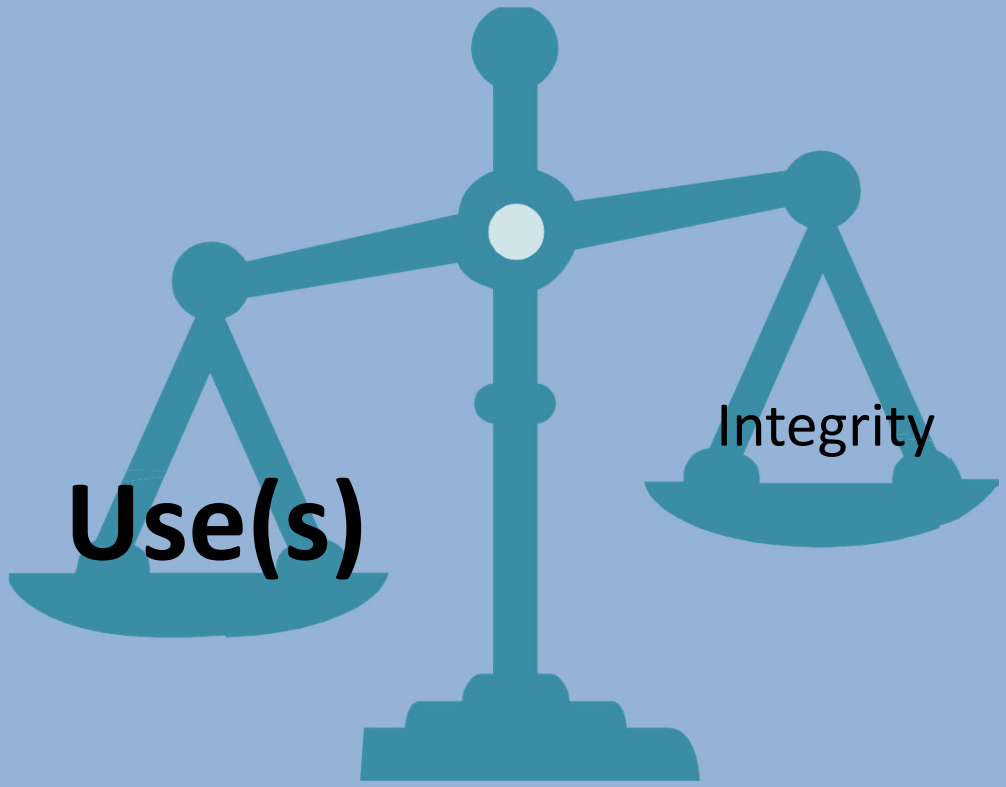
Management of natural resources



Eco-centric management



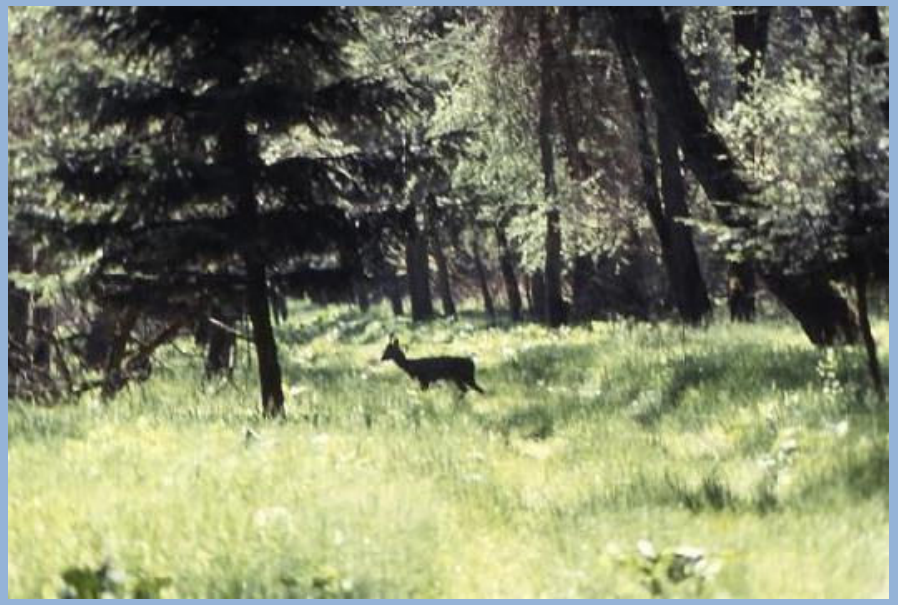
Anthropocentric management



Human dimensions as a ‘discipline’?

The entirety of studies that aim to capture peoples’ stand over issues of wildlife management (Manfredo, 1996)

In practice, quantitative surveys with fairly standardised theoretical and practical framework (Bath, 1991)



‘Popularity’ of HD surveys

(i) They are easy to conduct, interpret and understand

(ii) They help managers to predict and influence behaviour

(iii) Express the awareness of the public over a topic

(iv) Can provide lead into other complex issues of human-nature relationships

Manfredo & Bright, 2008

Not only attitudes...

(i) baseline assessment for attitudes

(ii) educational role for filling gaps in knowledge that can affect attitudes

(iii) partnership building among different groups

(iv) identification of support or disagreement over different management options

(v) identification of different types of conflict in order to properly address them

Bath (2000)

How to do it?

How to do it? – Quantitative approach

- Representative sample of the population
- Questionnaire framework (... ours after Bath, 1991 & Fowler, 1993)
- Targeted at residents 18y and older
- Sampled population should be enough to be considered statistically significant (ca. 400 interviews according to Sheskin 1985)

Human dimension research in Europe

- HD in Europe can still be considered as ‘nascent’ – compared to North America
- Traditionally wildlife management decisions are taken considering “expert” decisions
- High regional variations – HD research far more popular in Fennoscandia than the rest of Europe
- Mostly focused on large carnivores – due to recent expansions and re-colonisations
- Single-species focus – wolves get the greater attention
- However a lot of data is collected but not published or available as ‘grey’ literature

Large carnivores in Europe

Large carnivores – main findings

- Conflict over large carnivores is usually described as an urban-rural one
- Livestock breeders, hunters & farmers are usually the most negative
- Age and education highly influential on people's perceptions of large carnivores
- Species-dependant?
- Attitudes vary over time – often linked with the dynamics of the population
- LC conservation brings up majorities vs minorities conflicts

Why large carnivores?

LCs are among the most challenging species to conserve

- Elusive nature
- Huge territorial requirements
- Naturally rare / low densities
- **Conflicting relationship with humans**

Gittleman et al. 2001

Conflicts with large carnivores

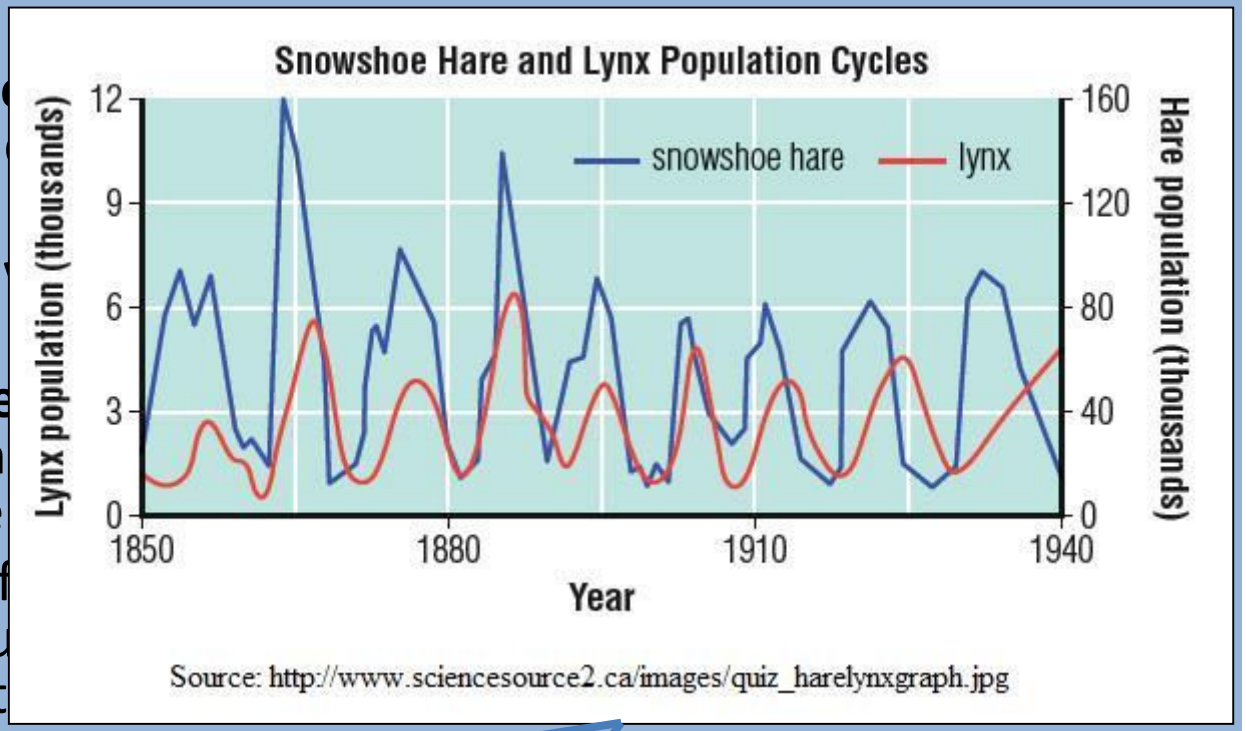
- They (rarely) kill people
- They kill game species
- They kill livestock
- They damage crops
- Fear for personal safety

‘Ecological’ vs ‘Social’ carrying capacity?

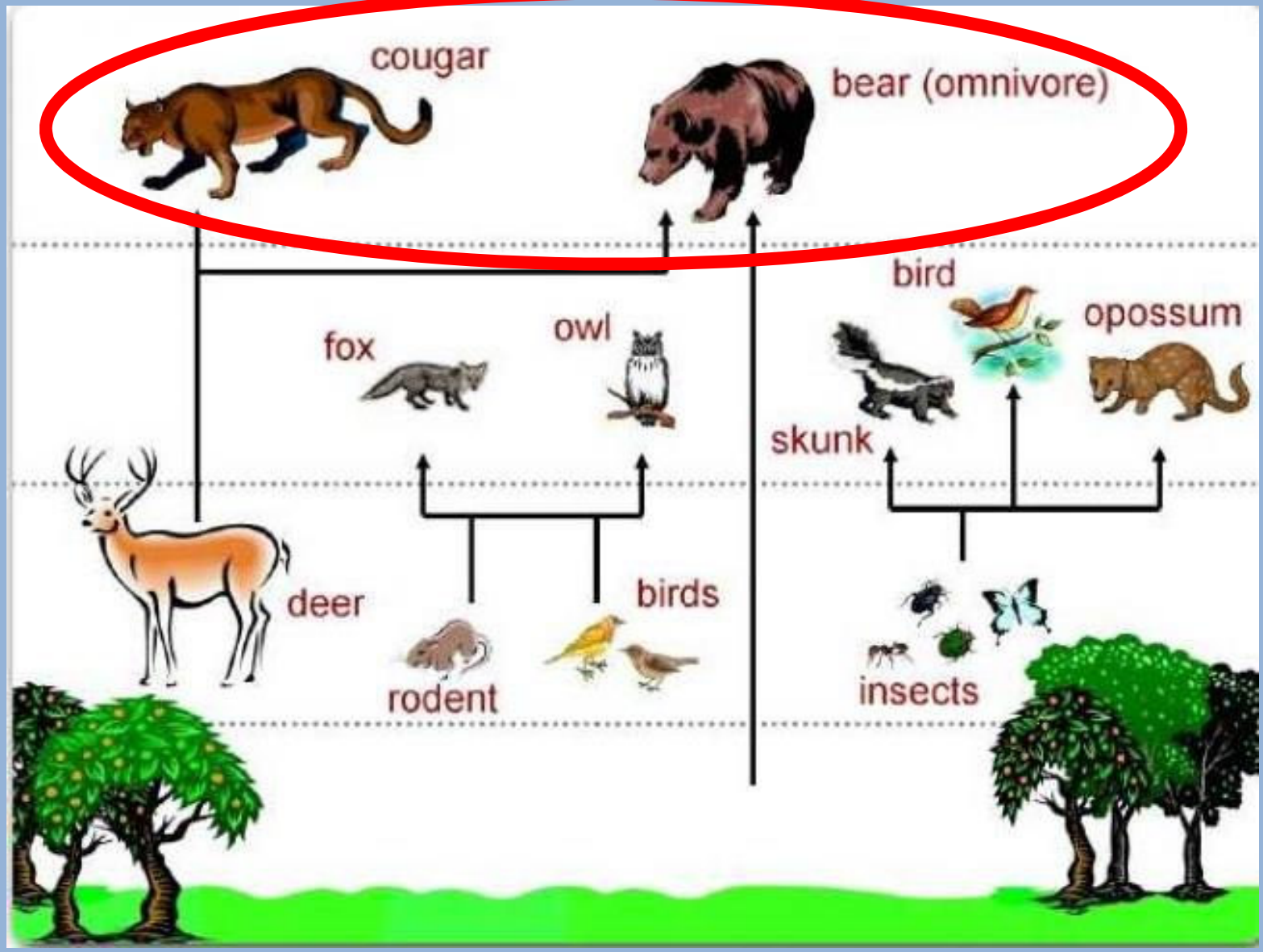
Seven levels of conservation ambitions for Large Carnivores

(Linnell et al. 2005)

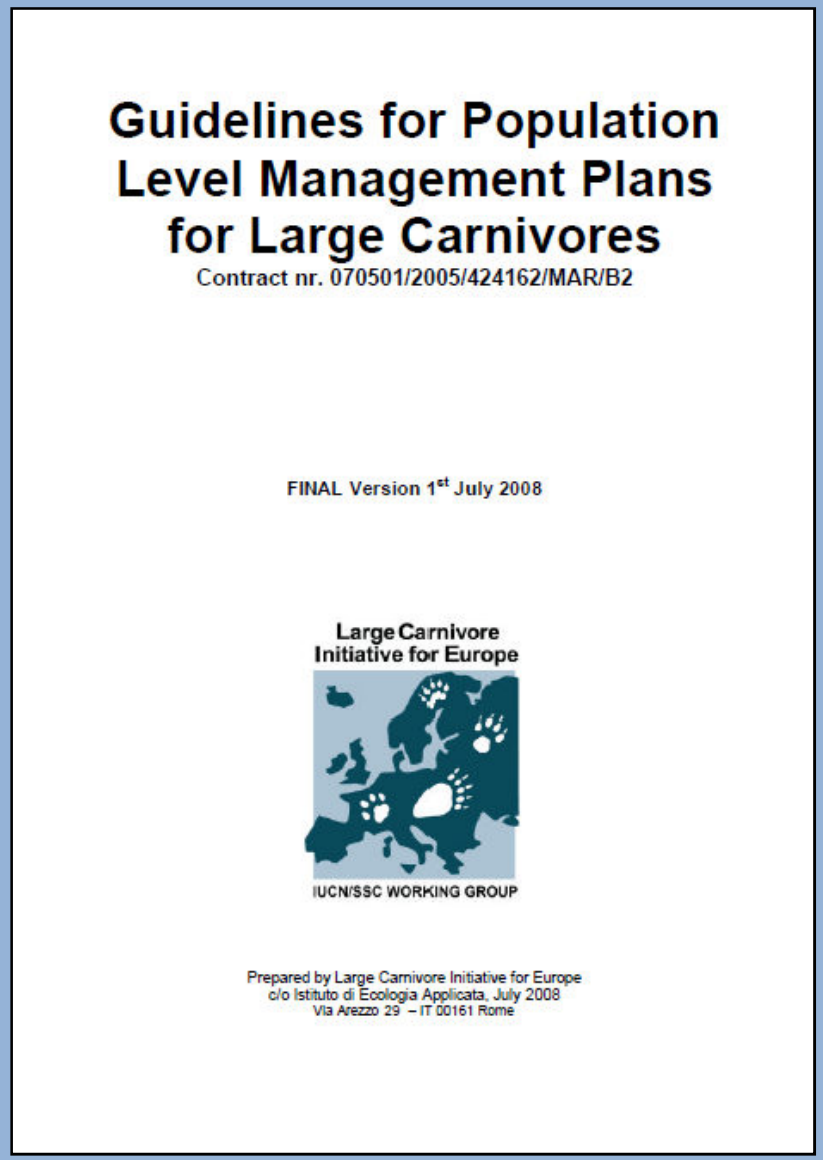
1. Species **presence** – e.g. lynx persist in an area after recolonisation or reintroduction
2. Some ecosystem **proce** kill red foxes (intraguil (secondary effects)
3. Species **demographic** increases to a level of
4. The **evolutionary pote** is maintained – e.g. th connectivity where ge
5. The **full community** of wolves and bears occu deer, moose, bison, et
6. The **limitation** and/or **regulation** of numbers of predators and prey are primarily determined by **trophic interactions** – e.g., prey density and intraguild interactions, rather than human intervention, will limit the density of lynx, wolf and bear populations
7. The system is able to exist in a **dynamic state**, fluctuating under the influence of climate, disease, and other external factors



Source: http://www.sciencesource2.ca/images/quiz_harelynxgraph.jpg

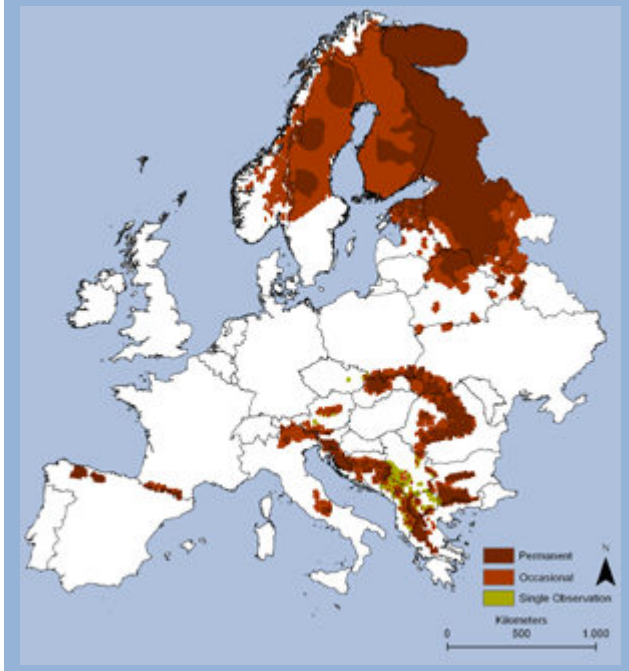

cougar
bear (omnivore)
bird
opossum
fox
owl
skunk
deer
birds
rodent
insects

Grouping Carnivores

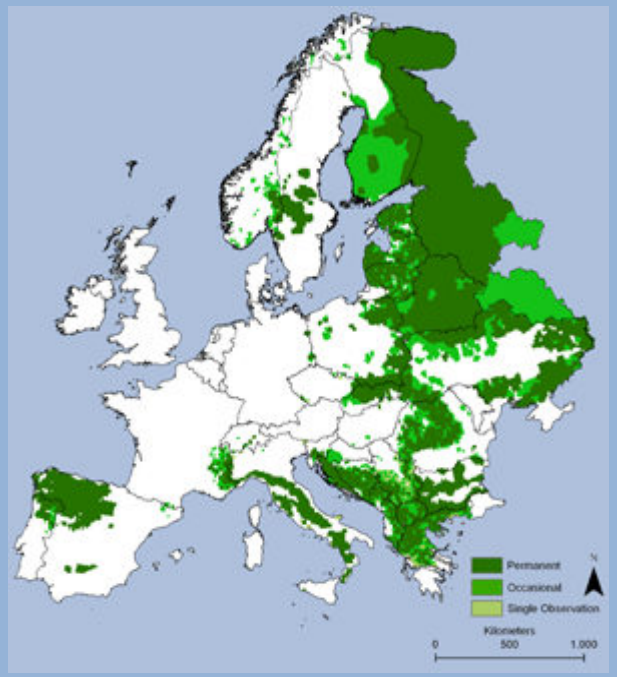


Want them all...
Want them now...

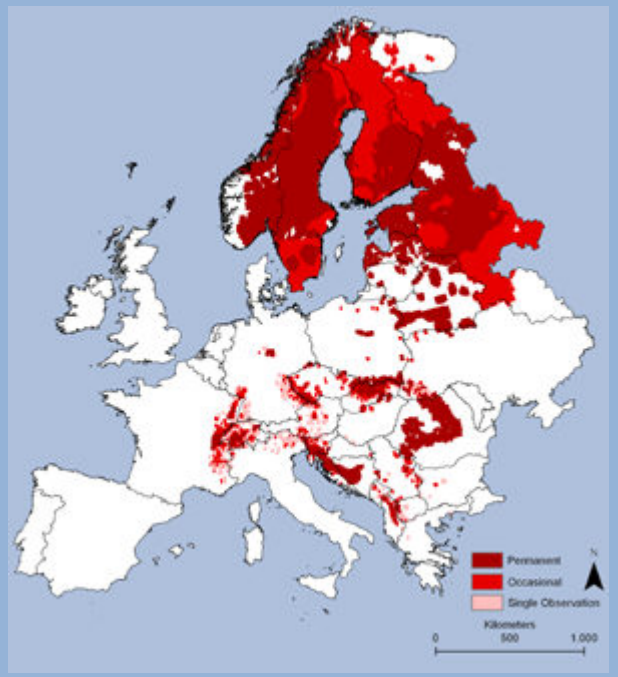
East – West debate



Bear



Wolf



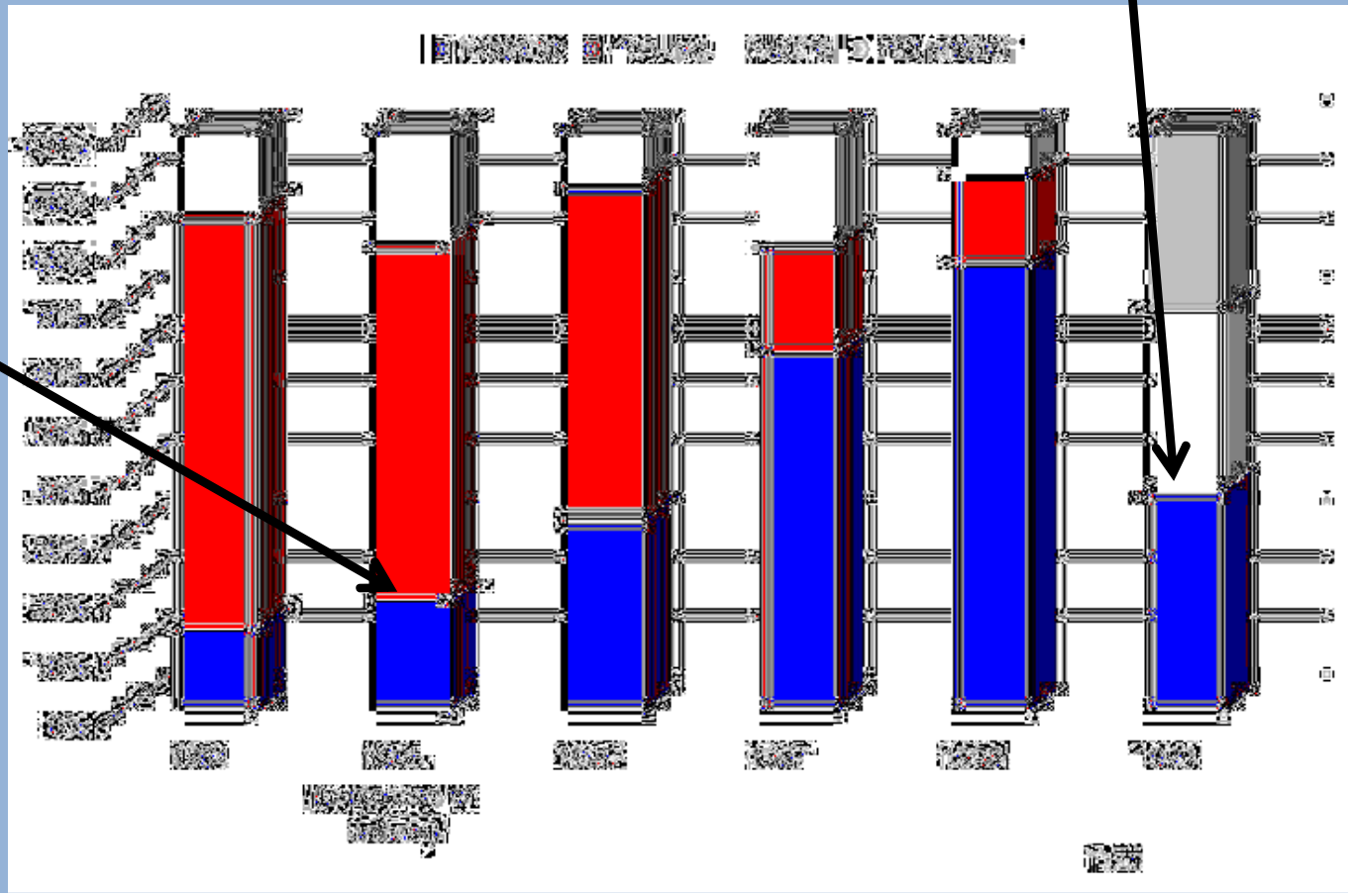
Lynx

Aiming too high? Regional examples

Wolves in Croatia (Bath & Majic 2001)

Year a human dimensions project started

Year wolves were given full protection



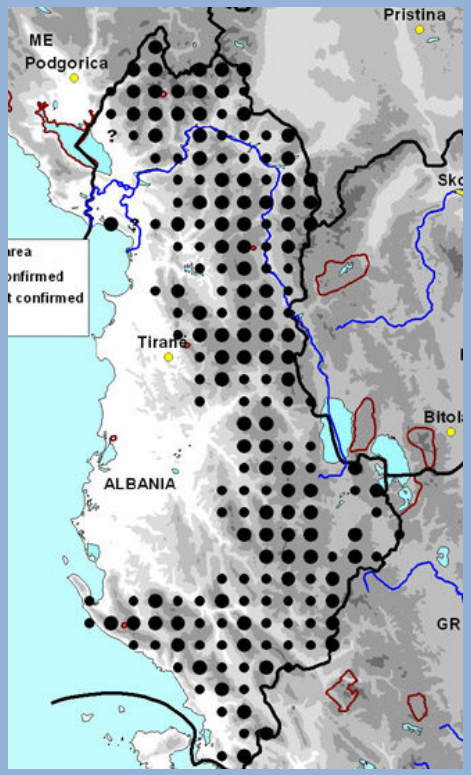
Human Dimensions of LC: Case study in Albania

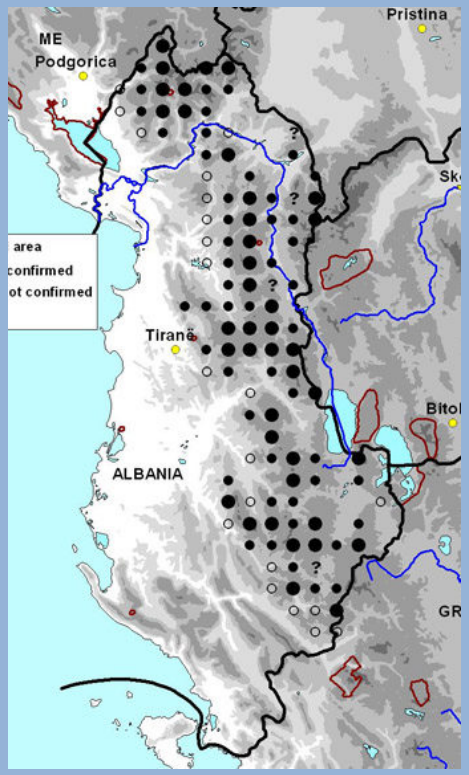
Large Carnivores in Albania (LCIE 2012)

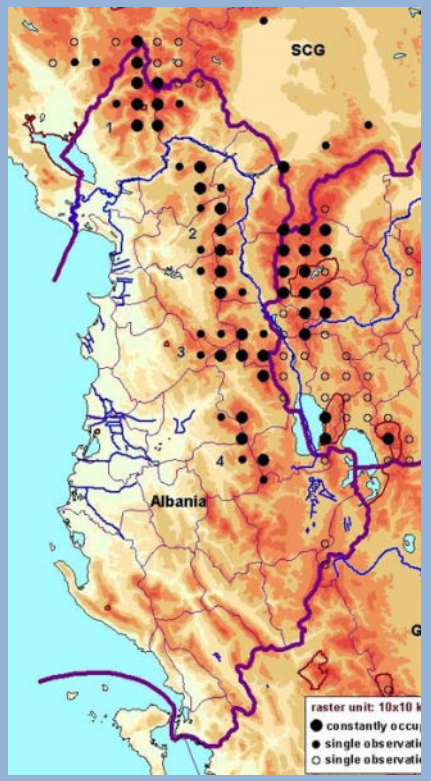
ca. 200 - 250

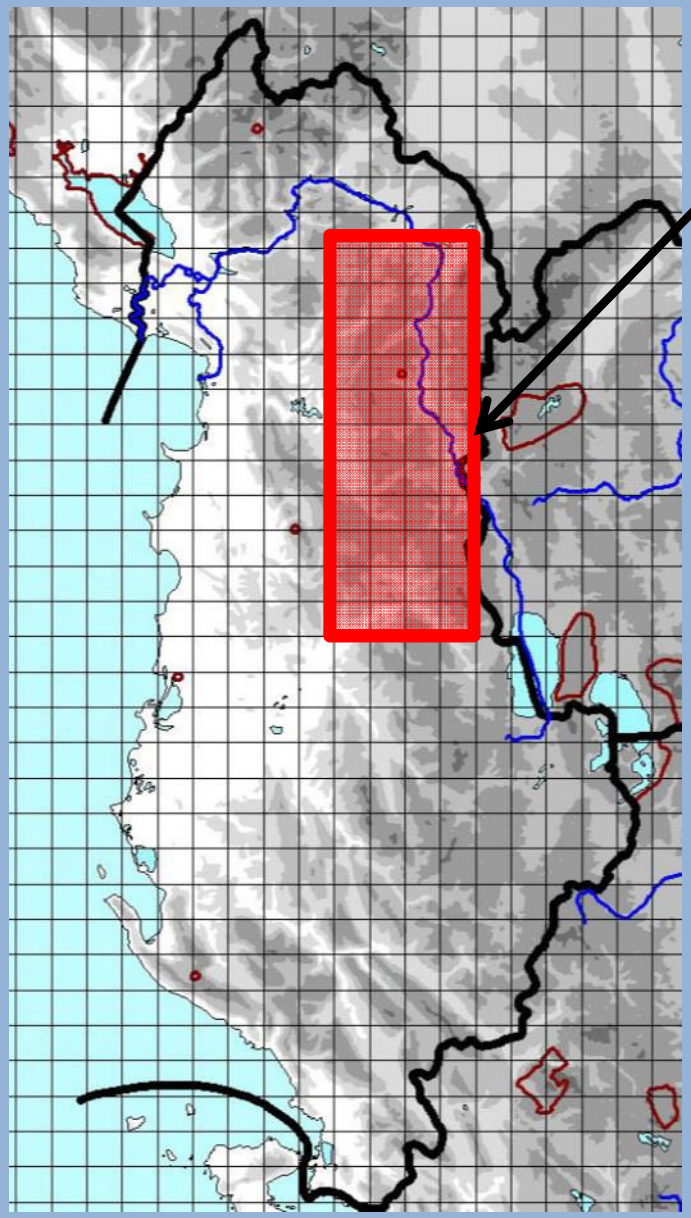
ca. 180 - 200

ca. 10 - 1









Area with presence of three LC species

400 systematic questionnaires conducted

32 communes in north & east Albania

Attitudes, perceptions of conflict, tolerance

Random cross-section of rural communities

Survey period: April 2007 – January 2009

Human attitudes questionnaire

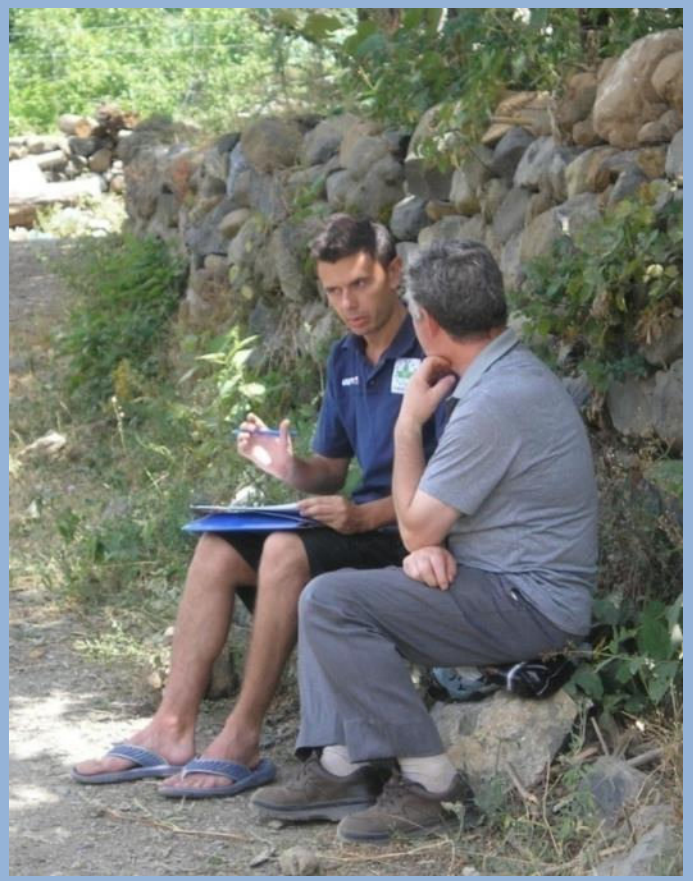
Date _____

Commune _____ GPS _____

	Strongly dislike (1)	Dislike (2)	Neutral (3)	Like (4)	Strongly like (5)
Opinion on bears					
Opinion on wolves					
Opinion on lynx					

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Bears should be protected for future generations					
Wolves should be protected for future generations					
Lynx should be protected for future generations					
Bears attract tourists					
Wolves attract tourists					
Lynx attract tourists					

Questionnaire with 48 questions repeated for each of the three species (bear, wolf, and lynx)



Carnivores in people's mind

Results

*People have different attitudes towards different species – perception of conflict/threat **vary** substantially depending on the **carnivore** concerned and the **stakeholder** involved*

Wolf

- Associated with most conflicts with the local rural population
- Highly negative attitudes
- Hunters and livestock breeders particularly against its presence

Bear

- Less conflicting nature – a generally respected species
- Admired animal and correlation to human behaviour
- Support for its conservation is high

Lynx

- Perceptions vary due to its elusive nature
- Generally an unknown species
- Not regarded as a major problem => low conflict
- Support for conservation is high

- Support for LC existence and tourism potential is somewhat similar
- Perceptions of conflicts and attitudes vary... a lot!
- Increases of lynx and bear populations might be accepted, increase of wolves is NOT
- Don’t mix wolves with lynx and bears
- Some form of active management (legal control) of wolves might help accepting them better – bears and lynx can potentially enjoy full protection

So where do we want to be?

1. Species **presence** – e.g. lynx persist in an area after recolonisation or reintroduction
2. Some ecosystem **processes** occur – e.g. lynx eat roe deer (predation), kill red foxes (intraguild predation) and leave carcasses for scavengers (secondary effects)
3. Species **demographic viability** is achieved – e.g. th increases to a level of demographic viability
4. The **evolutionary potential** of the species to adapt conditions is maintained – e.g. the population incre size or connectivity where genetic viability (evoluti ensured
5. The **full community** of carnivores (and their prey) i lynx, wolves and bears occur in the same area, toge , red deer, moose, bison, etc.
6. The **limitation** and/or **regulation** of numbers of predators and prey are primarily determined by **trophic interactions** – e.g., prey density and intraguild interactions, rather than human intervention, will limit the density of lynx, wolf and bear populations
7. The system is able to exist in a **dynamic state**, fluctuating under the influence of climate, disease, and other external factors

Balance?