



# Engagement in Abruzzo, Lazio and Molise National Park: a starting point process

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**Collaboration between biological  
(La Sapienza-PNALM) & Human  
Dimension (Memorial University)**

# Scope of the Project

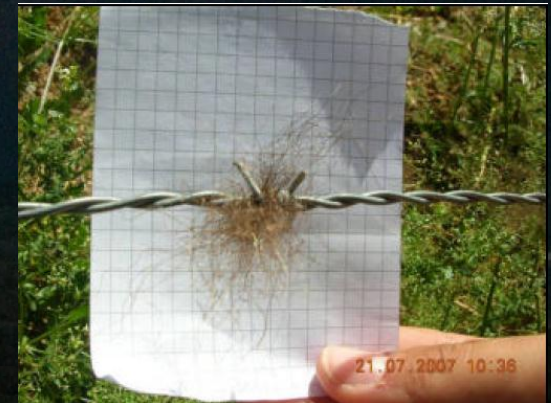
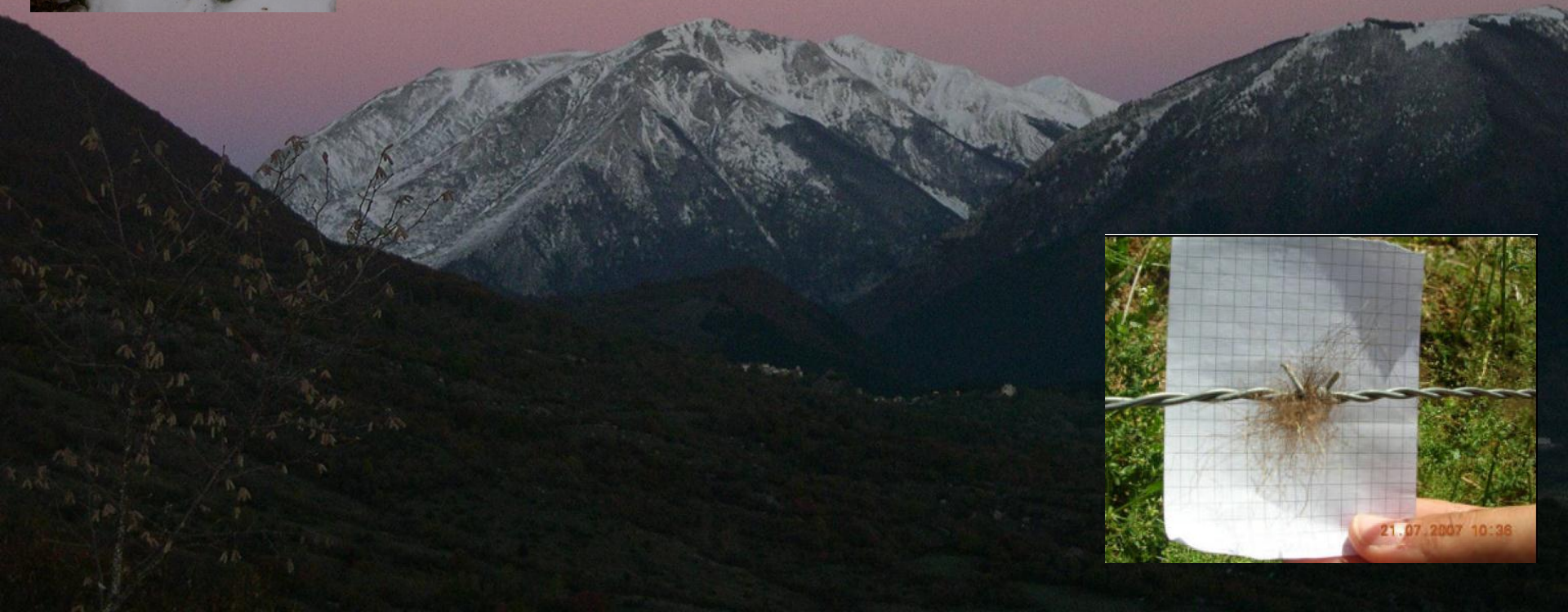
Enhance tolerance of Bears and Wolves

- Biological aspects
- Human Dimension aspects



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# Human Dimensions



Understanding those who are affected or can affect



# Research question

Understanding attitudes toward bears and wolves and the role attitudes play in conservation issues.

# N=42 QUALITATIVE INTERVIEWS

What are the key issues in your community?



HUNTER



SHEPHERD

PARK RANGER



TRUFFLER



- Carnivores-prey competition
- Limits from the park
- Poison baits



- Carnivores-prey competition
- Limits from the park
- Abandon of the agriculture
- No benefits
- Livestock damages
- No money



- Communication
- Residents do not trust us
- Limits from the park
- Illegal killing
- Poison baits



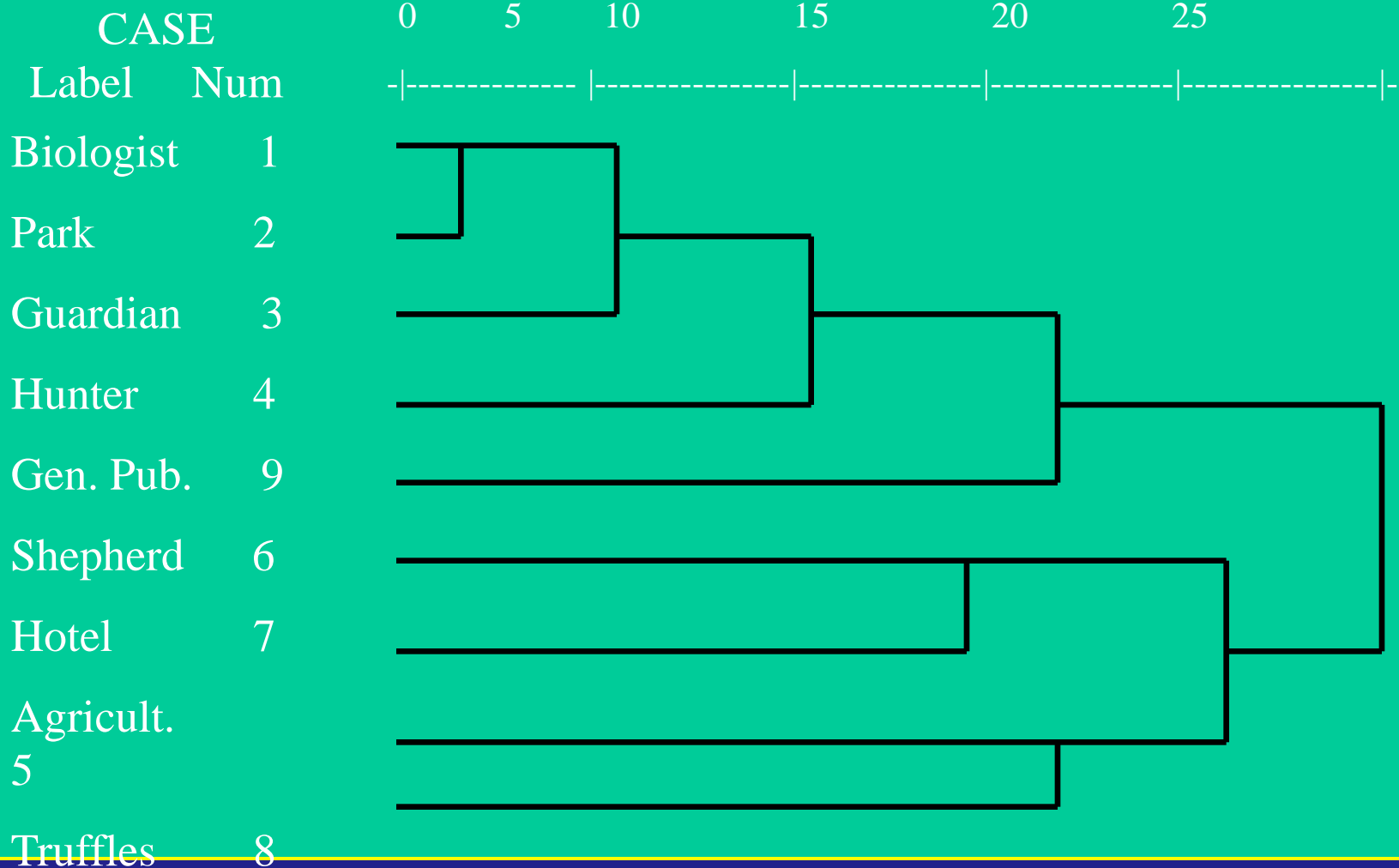
- Carnivores-prey competition
- Limits from the park
- Poison baits

Hunters	Shepherds	Park Rangers	Trufflers
X	X	X	
		X	
X	X	X	X
	X		X
			X



# Dendrogram using Average Linkage

Rescaled Distance Cluster Combine



# Study Area

*The study area was divided into four parts:*

- *Geo-political boundaries*

*Towns in Park*

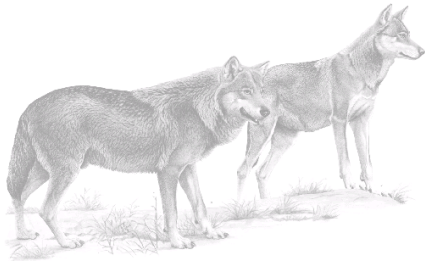
*The study covers 28 communes of the Park and buffer zone.*



Il Lupo  
The wolf

La prima parte del questionario riguarda il lupo.  
Per rispondere è sufficiente fare un segno sulla casella  
corrispondente alla risposta scelta.

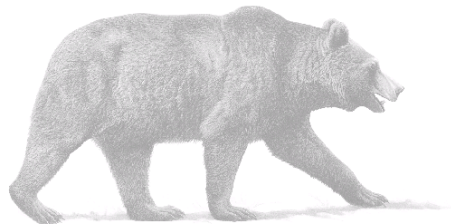
The first part of the questionnaire is regarding the wolf.  
The respondent has just to cross a box in correspondence  
to the choice



L'orso  
The bear

La seconda parte del questionario riguarda l'orso.  
Anche in questo caso per rispondere è sufficiente fare un  
segno sulla casella corrispondente alla risposta scelta.

The second part of the questionnaire regards the bear.  
Also in this case to answer is enough to cross a box  
corresponding to your choice.



# Questionnaire

- Questions on wolves and on bears about
  - Feelings
  - Biology
  - Management direct of the species: hunting-damages-
- Questions on management for both species: compensation system-reimbursement

# Sample size

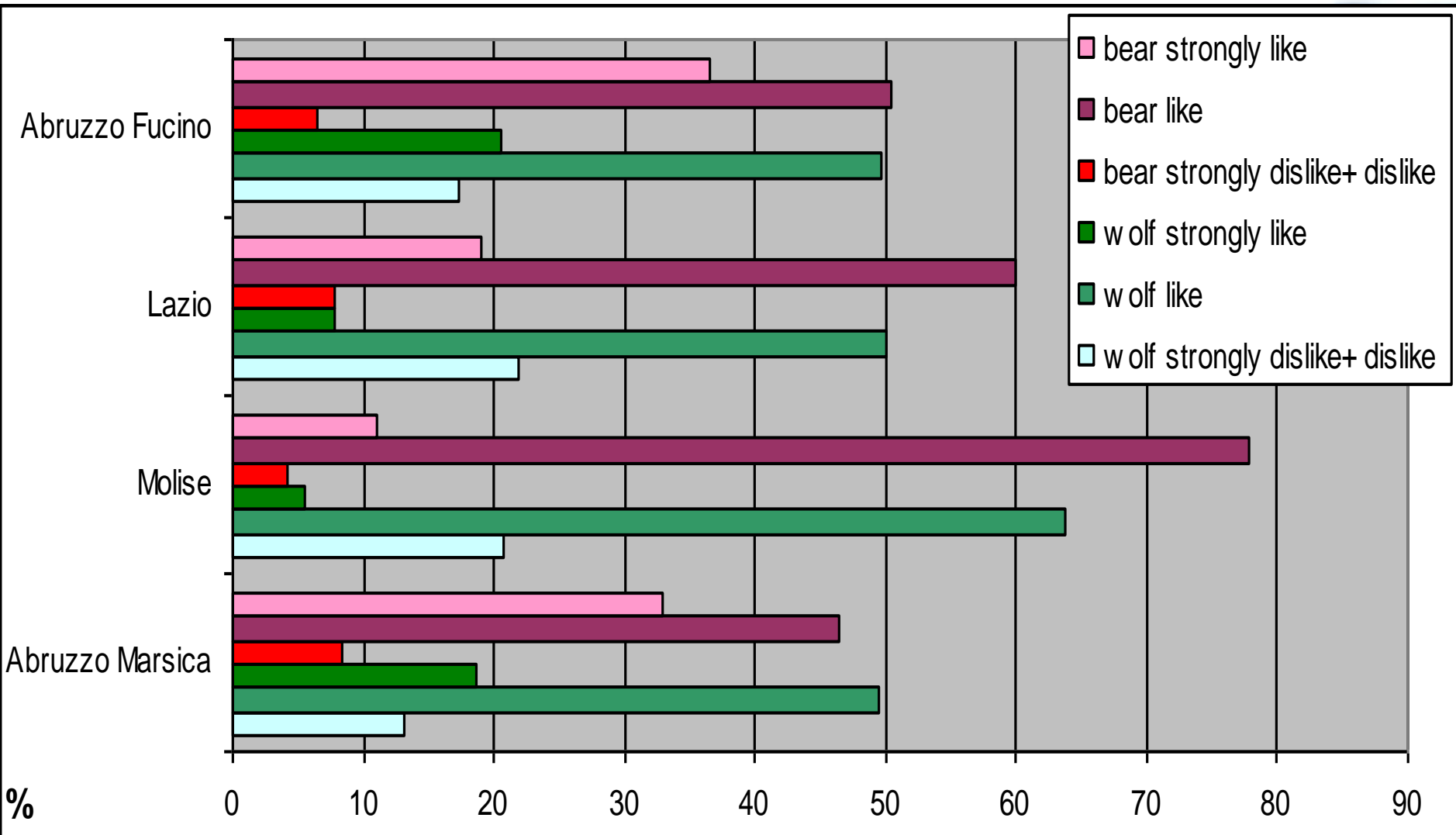
2007 – Face-to-face quantitative interviews to residents in 4 zones: 1611

2009 – Self-administered questionnaires to interest groups: 197



# Feelings toward wolves and brown bears by the four zones

N=1611



# Differences between wolves and brown bears by the four zones

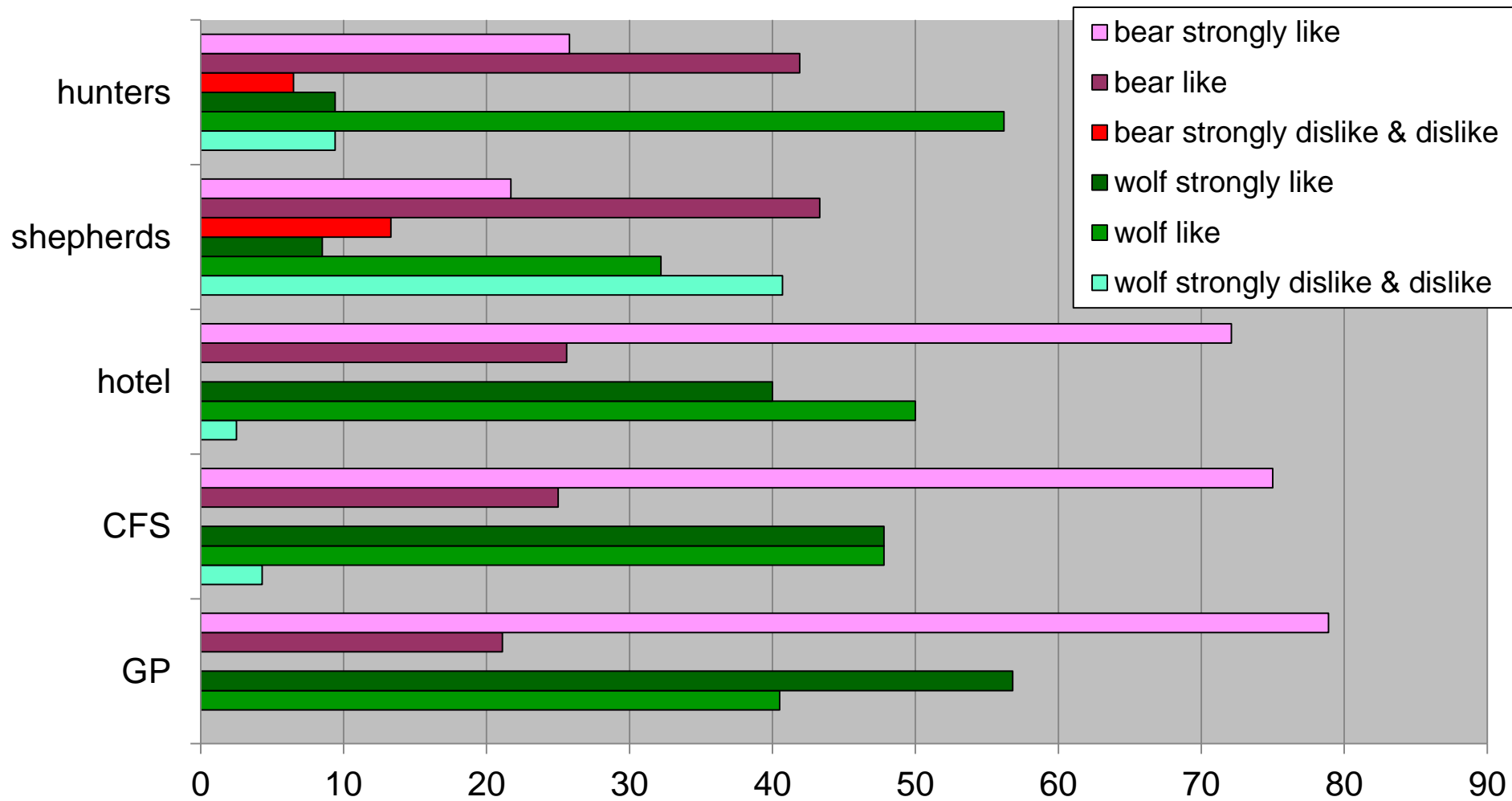
N=1611

Questions	Paired t-test values per zone							
	Marsica		Lazio		Molise		Fucino	
Wolves q1a	3.327	-8.01	3.525	-10.60	3.659	-9.72	3.699	-9.44
Bears q1d	3.880		3.948		4.148		4.027	
Wolves q2a	3.583	-6.42	3.723	-7.72	3.757	-8.04	3.759	-9.27
Bears q2d	3.905		3.995		4.183		4.002	
Wolves q3a	3.822	5.26	3.833	-5.94	3.990	-5.49	4.007	4.73
Bears q3d	4.046		4.005		4.173		4.172	

ALL p<0.001

# Feelings toward wolves and brown bears by interest groups

N=197



# Differences between interest groups

	<i>F</i> -value	<i>p</i> -value	ETA
Feeling wolf	23.318	< 0.001	.578

	<b>N</b>	<b>MEAN</b>		
Shepherds	59	2.97		
Hunters	32	3.63	3.63	
Hotel owners	40		4.28	4.28
CFS	23			4.35
GP	37			4.54

*Scheffe*  
N = 191



# Differences between interest groups

	<i>F</i> -value	<i>p</i> -value	ETA
Feeling bear	20.267	< 0.001	.546

	N	MEAN	
Shepherds	60	3.70	
Hunters	31	3.81	
Hotel owners	43		4.70
CFS	24		4.75
GP	38		4.79

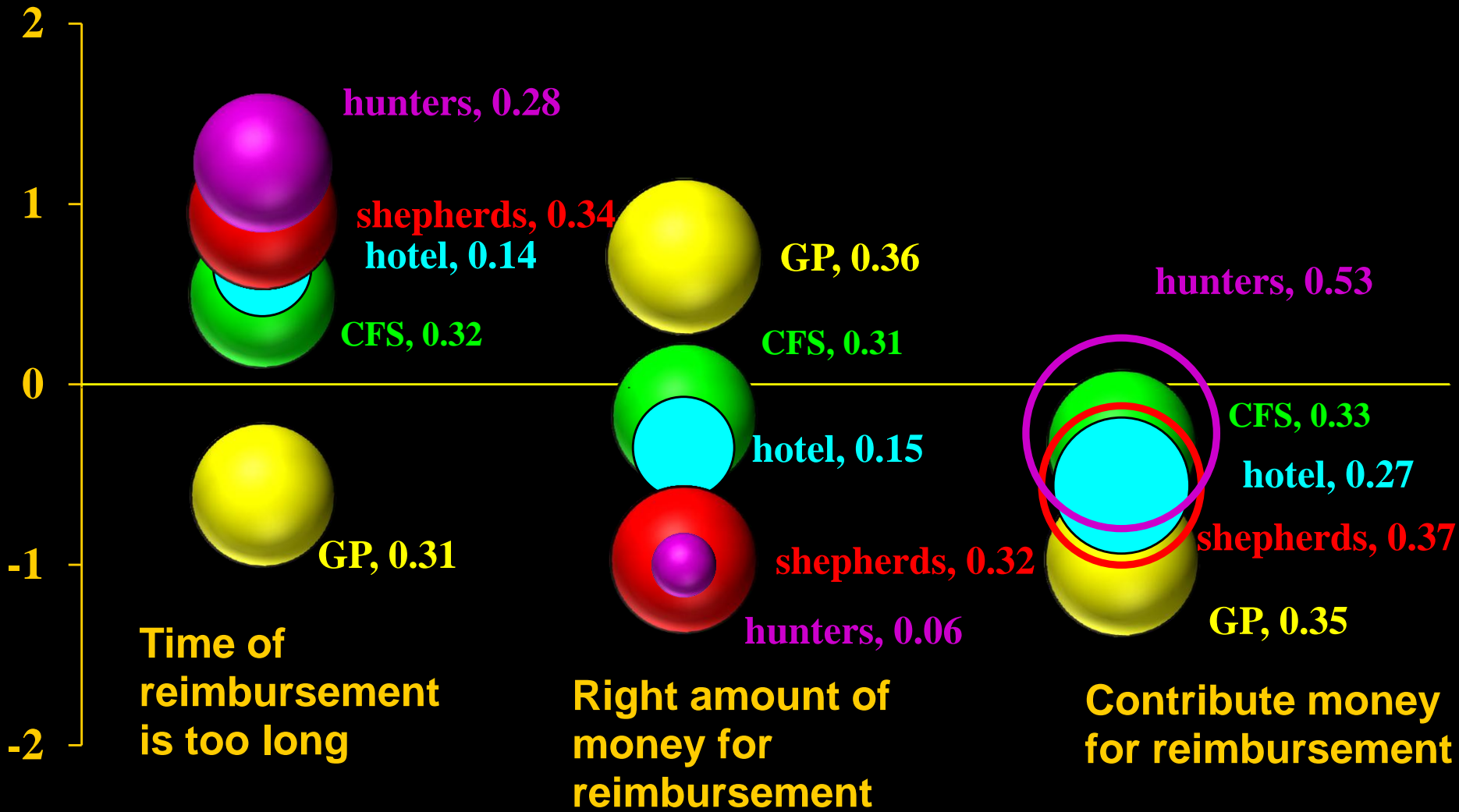
**Scheffe**  
**N = 196**

# Compensation?

- Should there be compensation?
- Should there be any conditions to receive compensation?
- How should it be implemented?
  - Time, money, animals, insurance

# PCI – 5 point scale

Strongly



# Compensation system

	<i>F</i> - value	<i>p</i> - value	ETA
<b>TIME TOO LONG</b>	19.398	< 0.001	0.226
<b>RIGHT MONEY</b>	16.511	< 0.001	0.210
<b>GIVE MONEY</b>	1.719	NS	0.069

# Compensation system

	<i>F</i> - value	<i>p</i> - value	ETA
<b>TIME TOO LONG</b>	19.398	< 0.001	0.226
<b>RIGHT MONEY</b>	16.511	< 0.001	0.210
<b>GIVE MONEY</b>	1.719	NS	0.069

	<b>N</b>	<b>MEAN</b>
<b>Park Ranger</b>	38	2.39
<b>CFS</b>	24	3.50
<b>Hotel owner</b>	43	3.65
<b>Shepherds</b>	59	3.95
<b>Hunters</b>	31	4.23

*Scheffe*  
N = 195

# Compensation system

	<i>F</i> - value	<i>p</i> - value	ETA
<b>TIME TOO LONG</b>	19.398	< 0.001	0.226
<b>RIGHT MONEY</b>	16.511	< 0.001	0.210
<b>GIVE MONEY</b>	1.719	NS	0.069

*Scheffe*  
N = 192

	N	MEAN		
<b>Hunters</b>	28	2.00		
<b>Shepherds</b>	59	2.03		
<b>Hotel owners</b>	43		2.65	
<b>CFS</b>	24		2.83	
<b>Park Rangers</b>	38			3.71

# Sum up

- Rural residents & Interest groups positive attitudes
  - Conservation importance
- Differences between LCs & zones
  - Conservation priority
- Differences between groups in compensation issues
  - Important for decision making process

# Next Steps



- **EDUCATION & OUTREACH**
  - Neutral responses
  - Bears and wolves
  - Zones
- **SHARE RESULTS**
  - Public meetings





# Next step



- **WORKSHOPS**
  - Park rangers different
  - Foresters most similar to hotel owners
  - Shepherds most similar to hunters





# THANK YOU

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