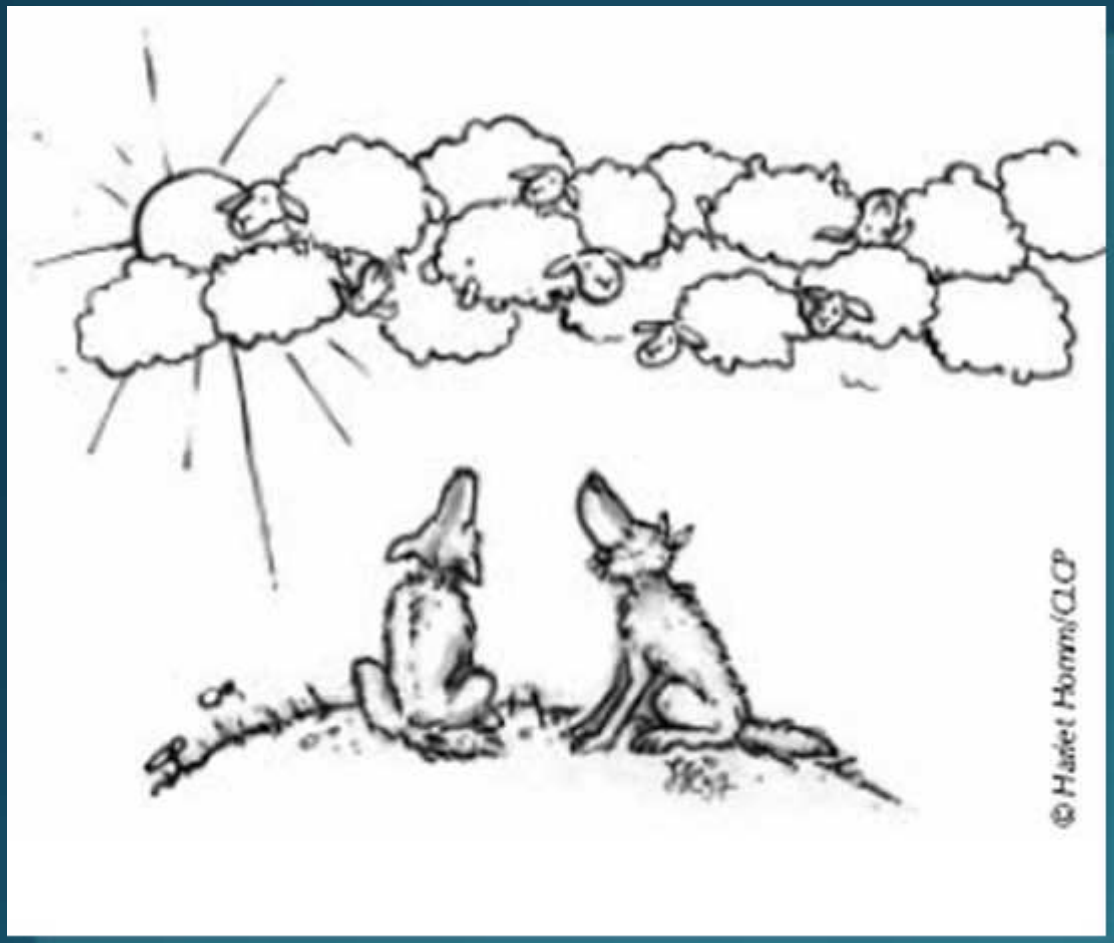
Wolves satiated and all sheep on count?



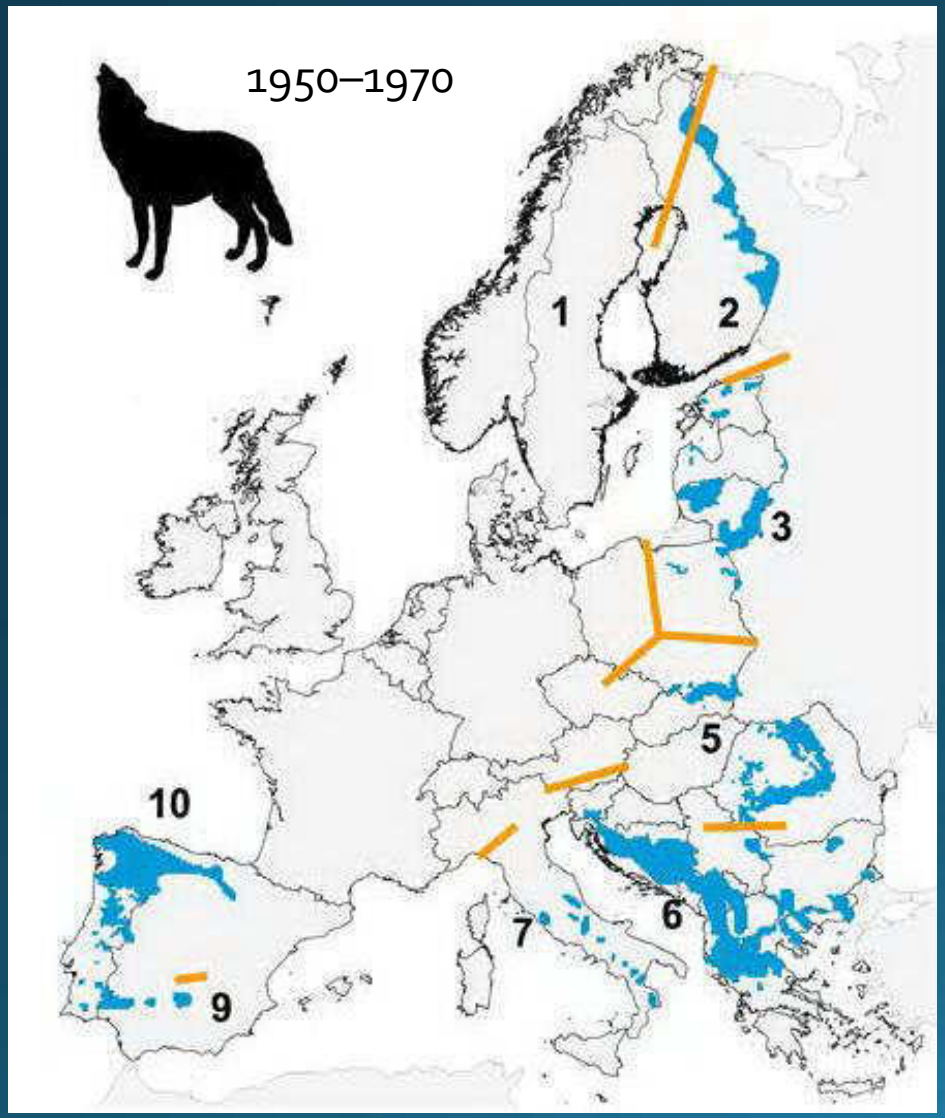
Josip Kusak

Biology department, Veterinary faculty, University of Zagreb


7.000 DINARA NAGRADE
ZA SVAKOG UNIŠTENOG VUKA
Sve informacije i stručne upute
daje nadležna šumarija

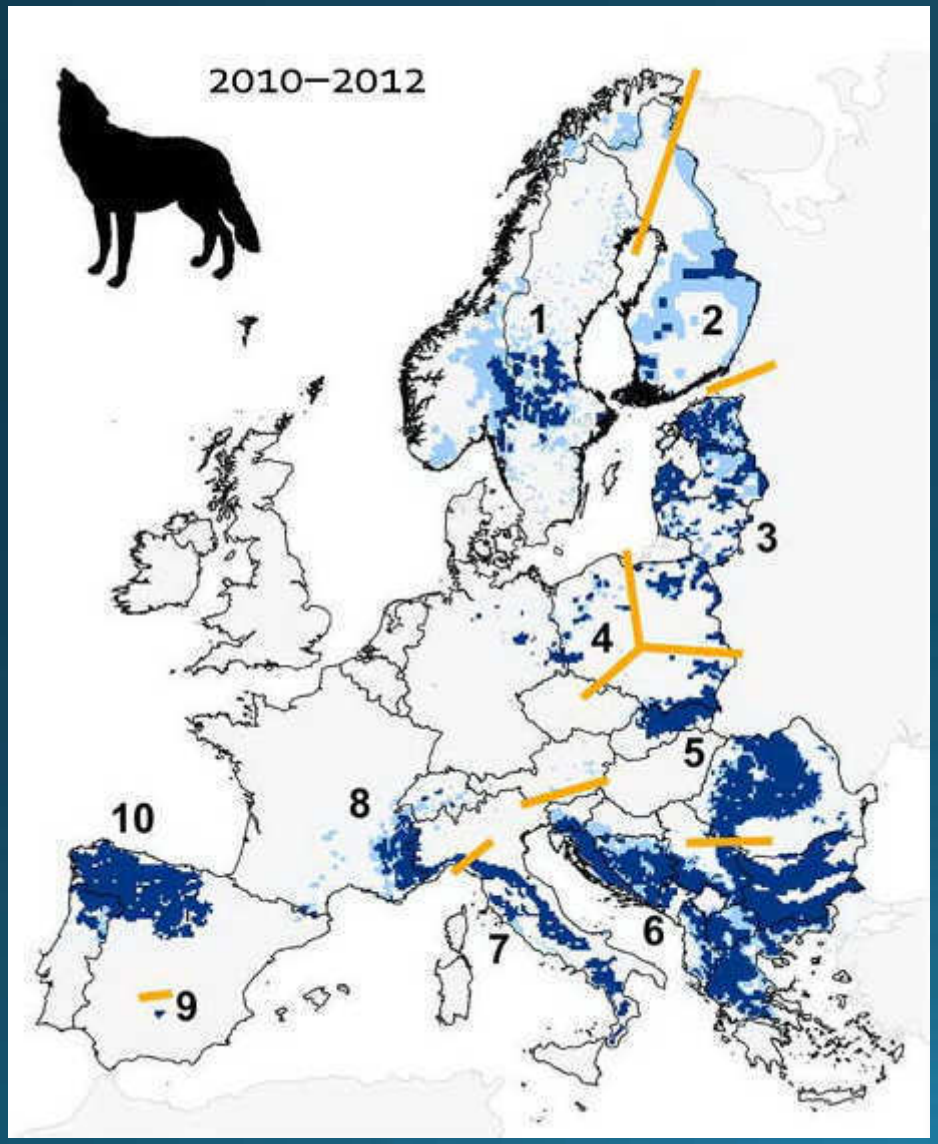
Historic low wolf distribution

from Chapron et. all, Science 2014



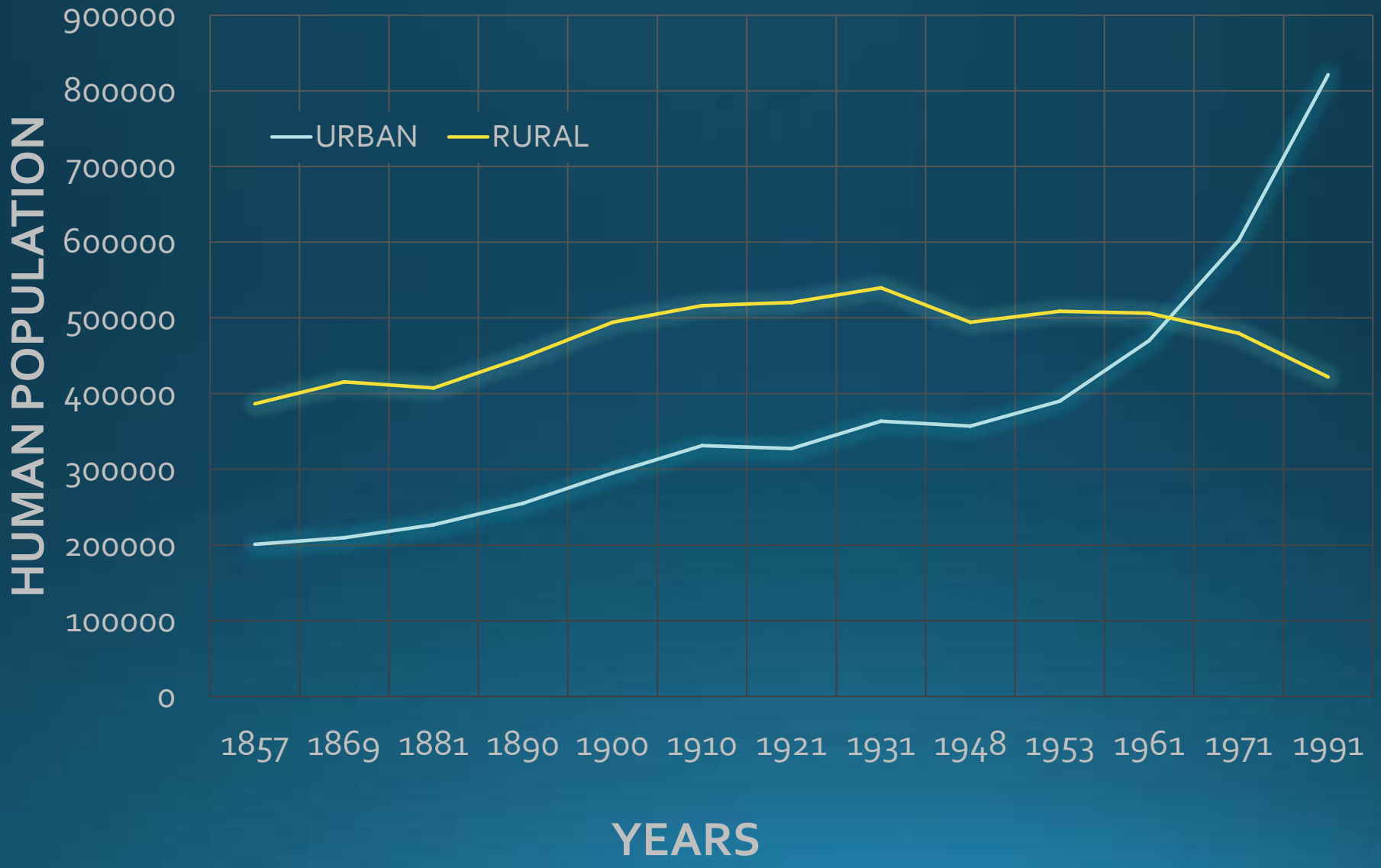
Present wolf distribution

from Chapron et. all, Science 2014



- Causes of wolf recovery in Europe
  - Human abandonment of rural areas
  - Succession of forest
  - Less negative attitude toward wolves (less wolves)
  - Conservation efforts

HUMAN POPULATION DINAMIC IN WOLF RANGE IN CROATIA DURING 134 YEARS



Gorski kotar region of Croatia

The level of conflict with livestock farming does not necessary correspond with the density of wolves and with the density of livestock,

but depends on the degree of alienation from wolf-safe livestock husbandry and on the presence of alternative food sources for wolves.

Comparing five different regions…

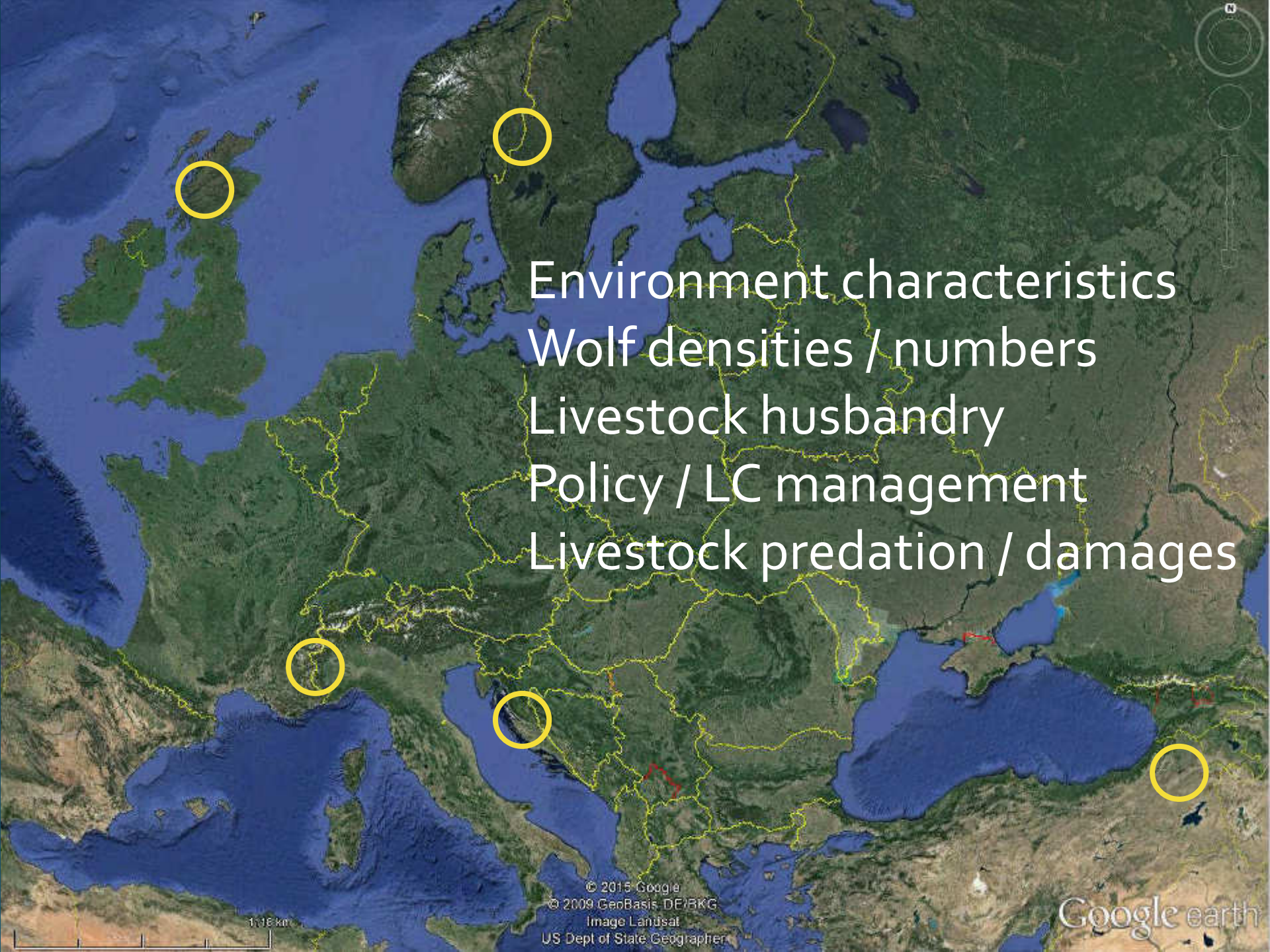

Environment characteristics
Wolf densities / numbers
Livestock husbandry
Policy / LC management
Livestock predation / damages
© 2015 Google
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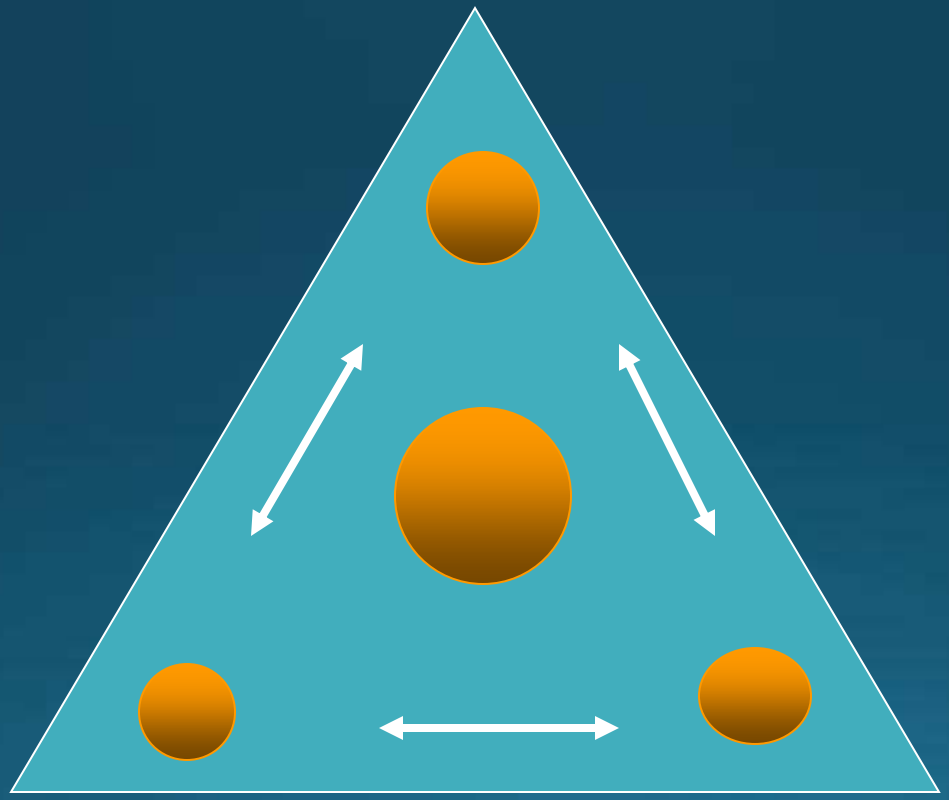
Image Landsat
US Dept of State Geographer
Google earth

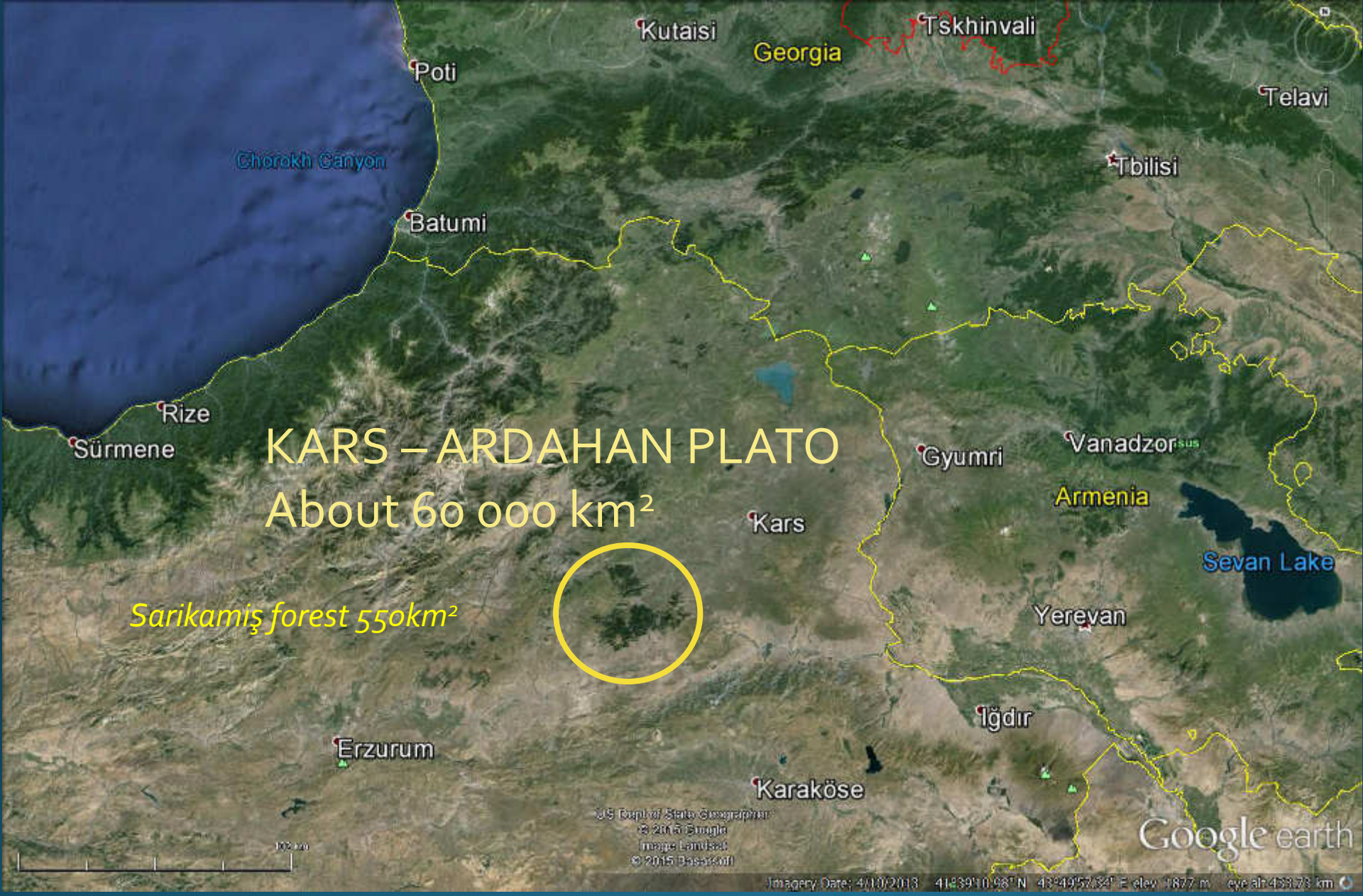
LC damages handling

Prevention



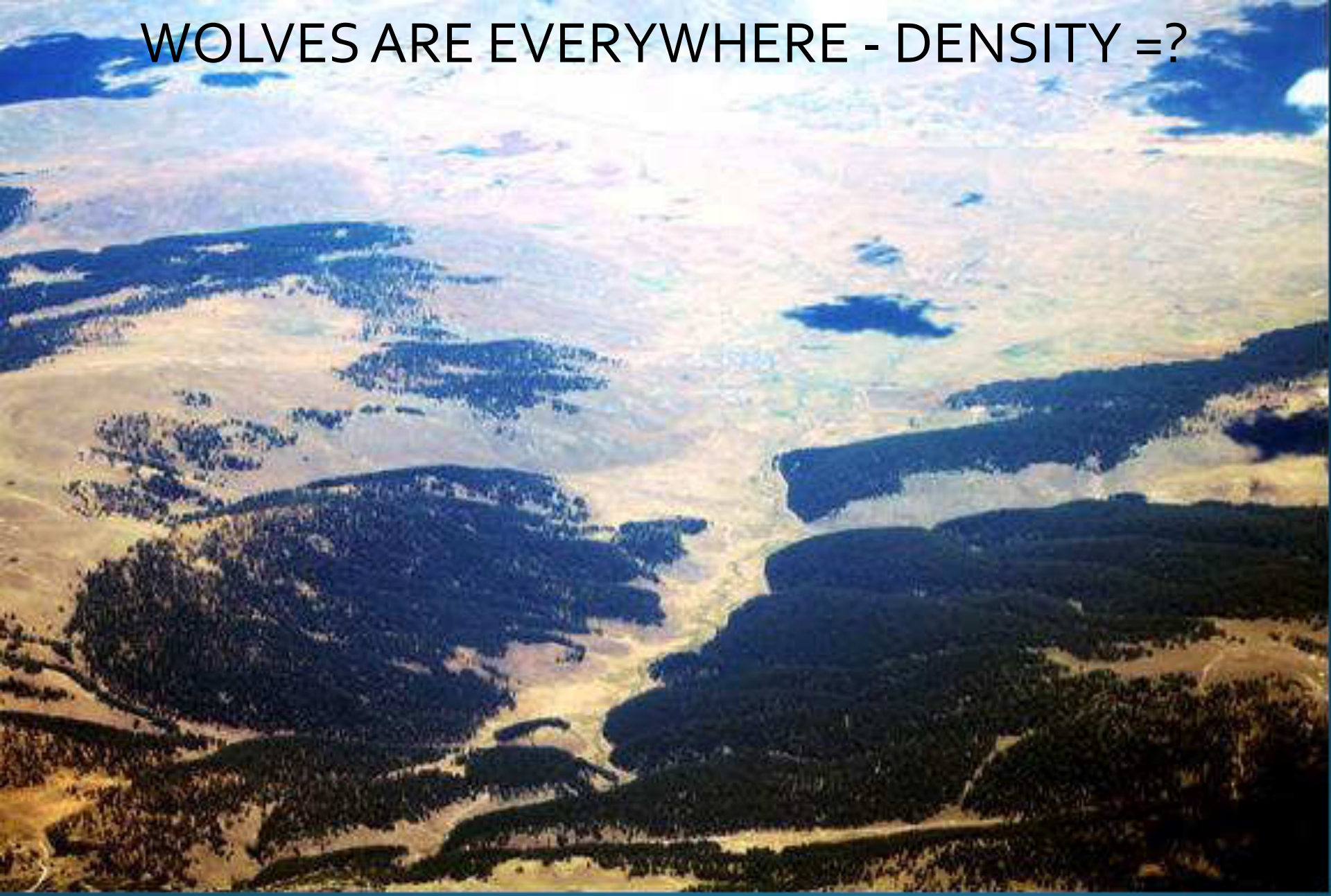
Lethal control of predators

Compensations



Google image of north-eastern Turkey and parts of Georgia and Armenia.
Sarikamis area is in the circle

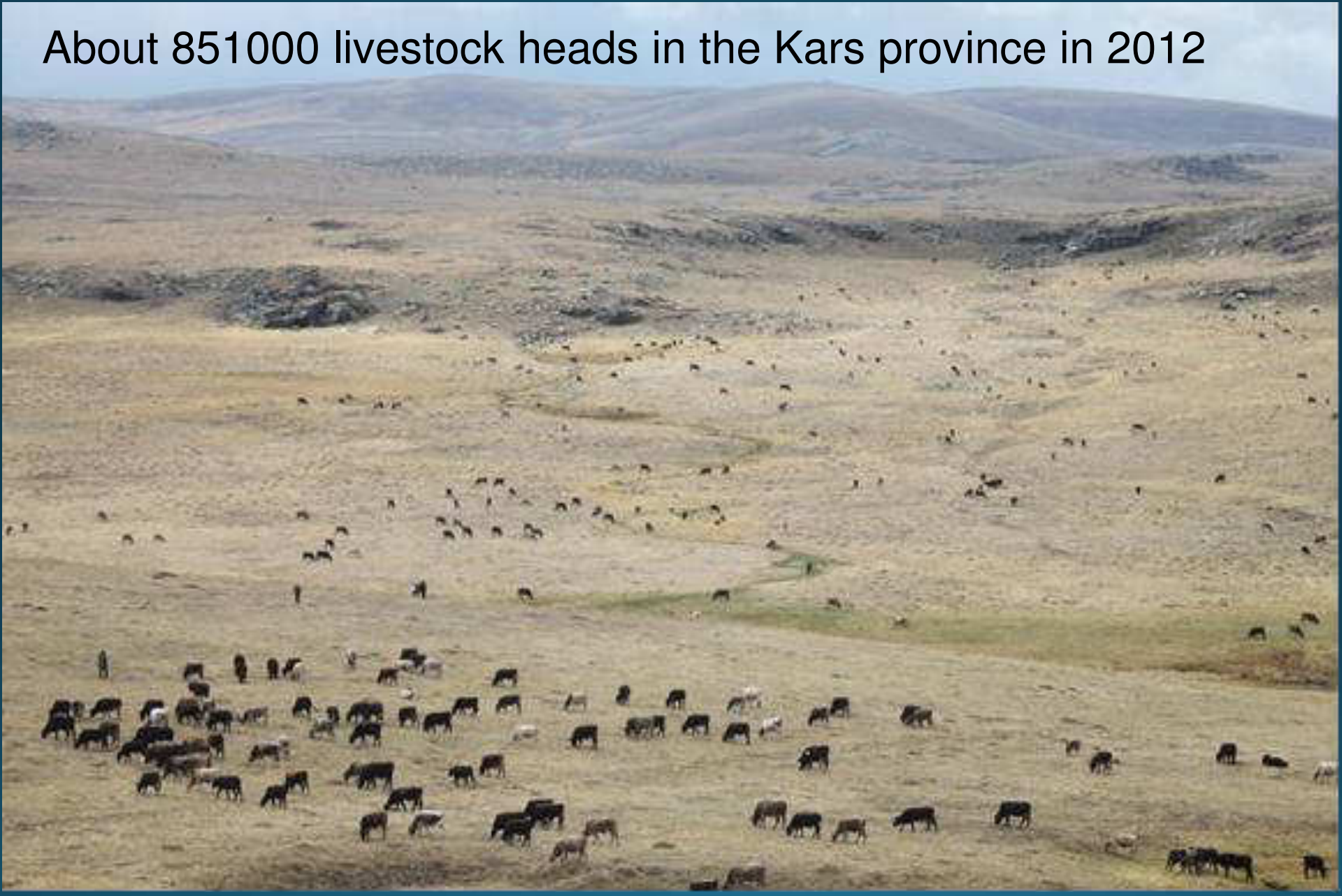
WOLVES ARE EVERYWHERE - DENSITY =?



Aerial photo of a typical forest landscape of Kars-Ardahan Plato. Fragments of forest are surrounded by agricultural land

Kaynak village – Sarikamiş area

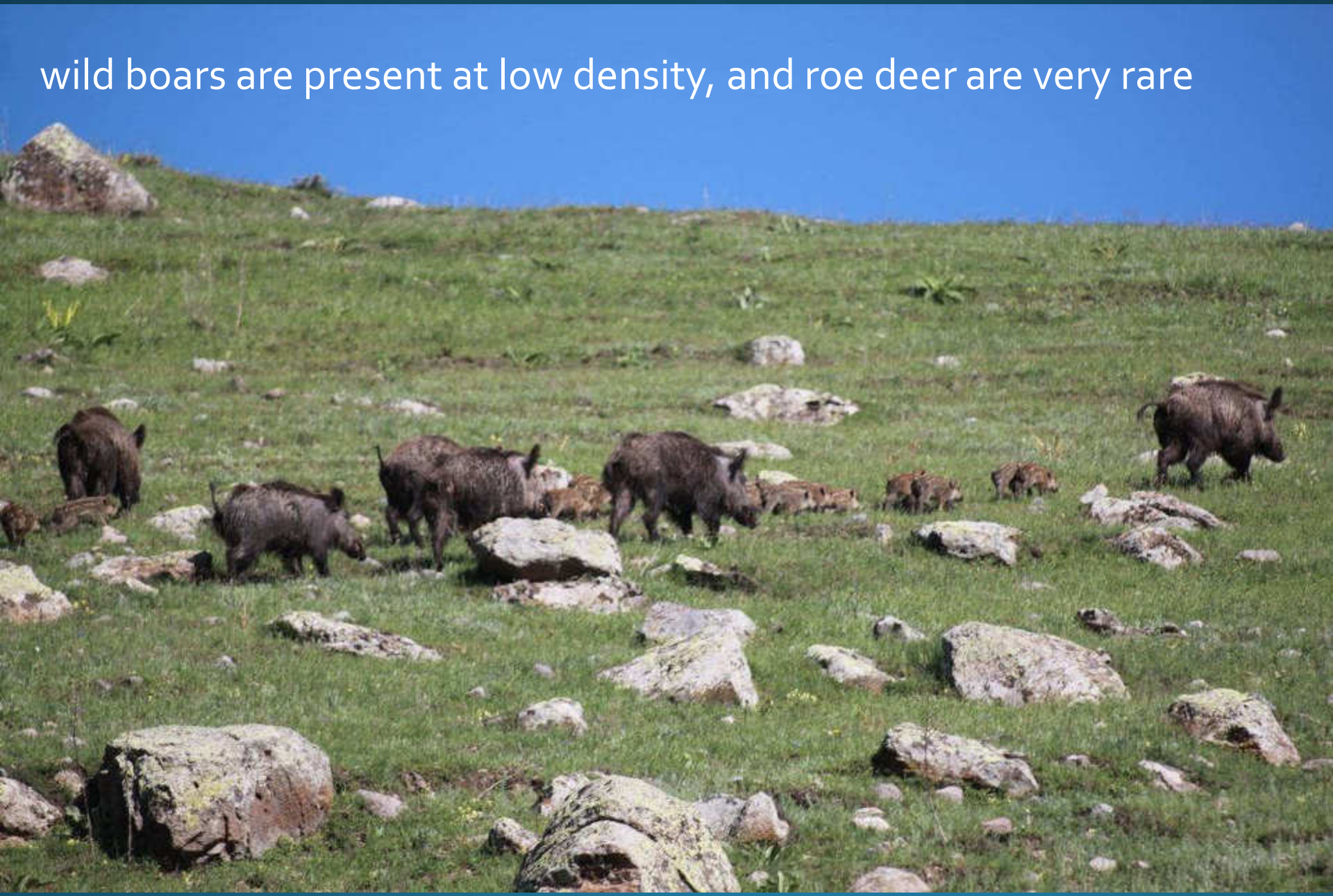
About 851000 livestock heads in the Kars province in 2012



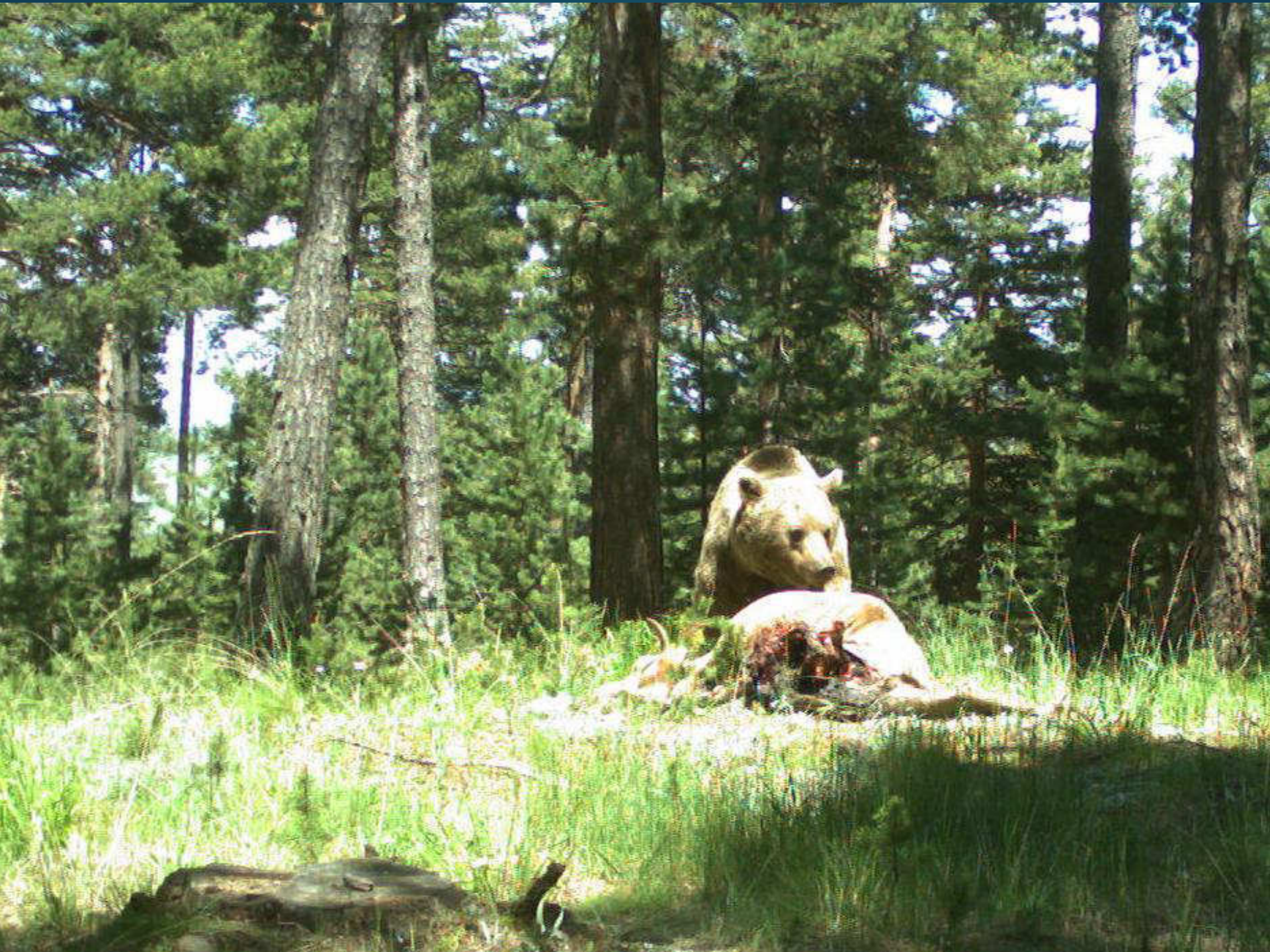
Large herd of cattle and sheep flocks can be found on the pastures all around the Sarikamiş forest, north-eastern Turkey


Sheep and cows are regularly present even in
the Sarikamiş-Allahuekber Mountains National Park

wild boars are present at low density, and roe deer are very rare



Livestock constitute most of the biomass intake for wolves (Capitani et al. 2015). However, it is not know what is the ratio of predation vs. scavenging.



Carcass disappearance - Sarikamiş

12:21

06:28

TURKEY SUMMARY

Wolves in Turkey are a species under protection from hunting according to the Article 4 of Turkey's Terrestrial Hunting Law

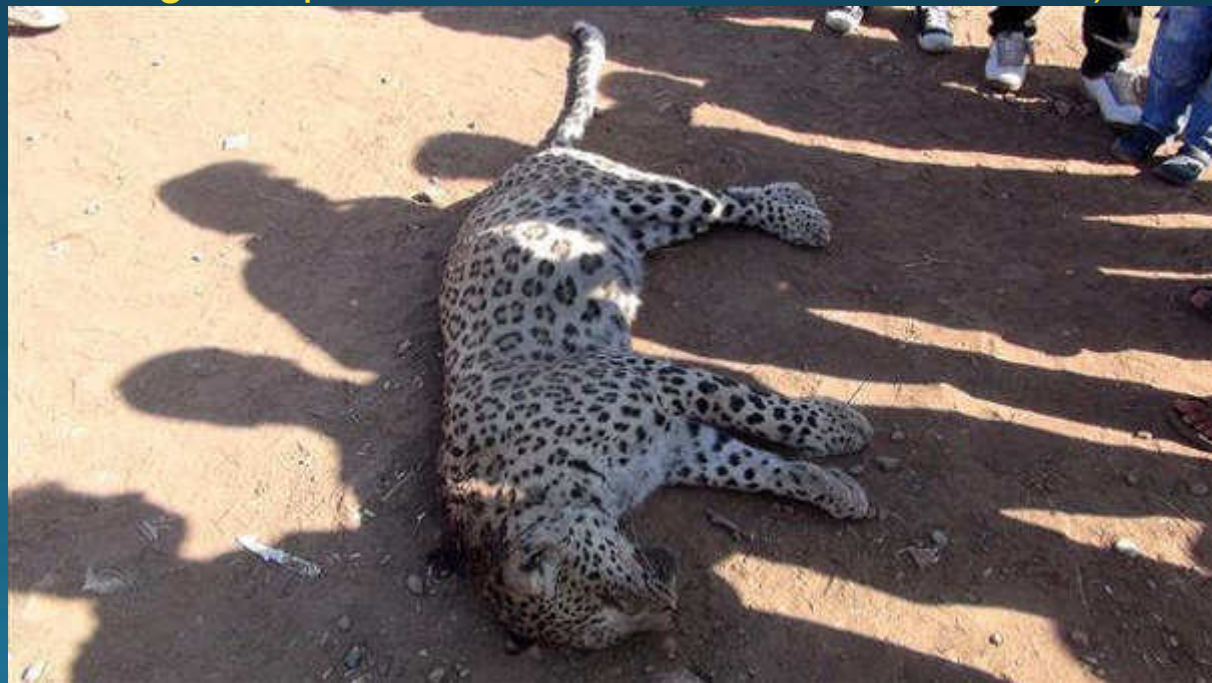
No Management plan

No damage compensation

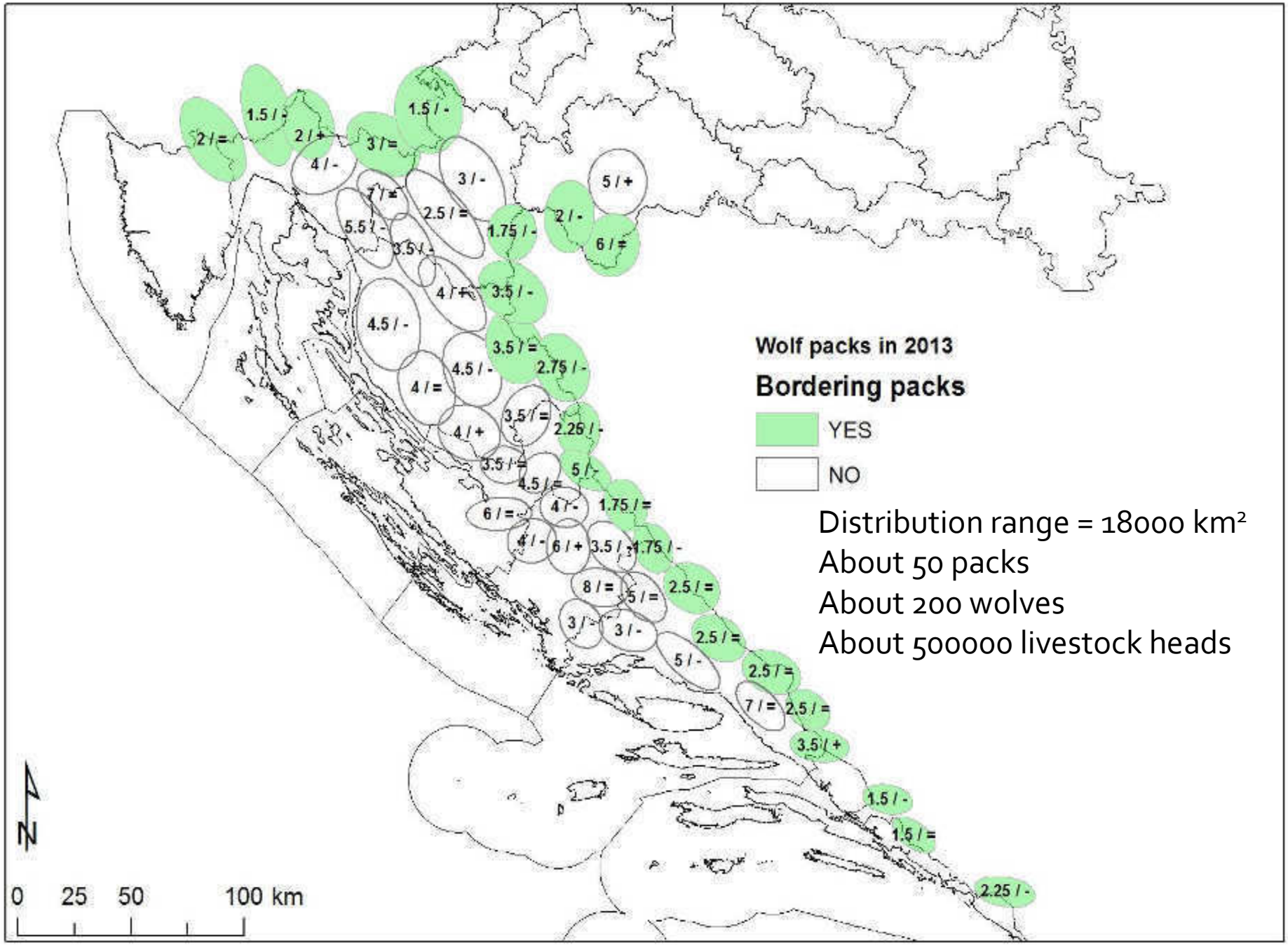
Illegal killing of wolves happens

No fine for killing a wolf (a „fine" for killing a leopard in 2013 was 300 TL or 100 USD)

„NO PROBLEM!"



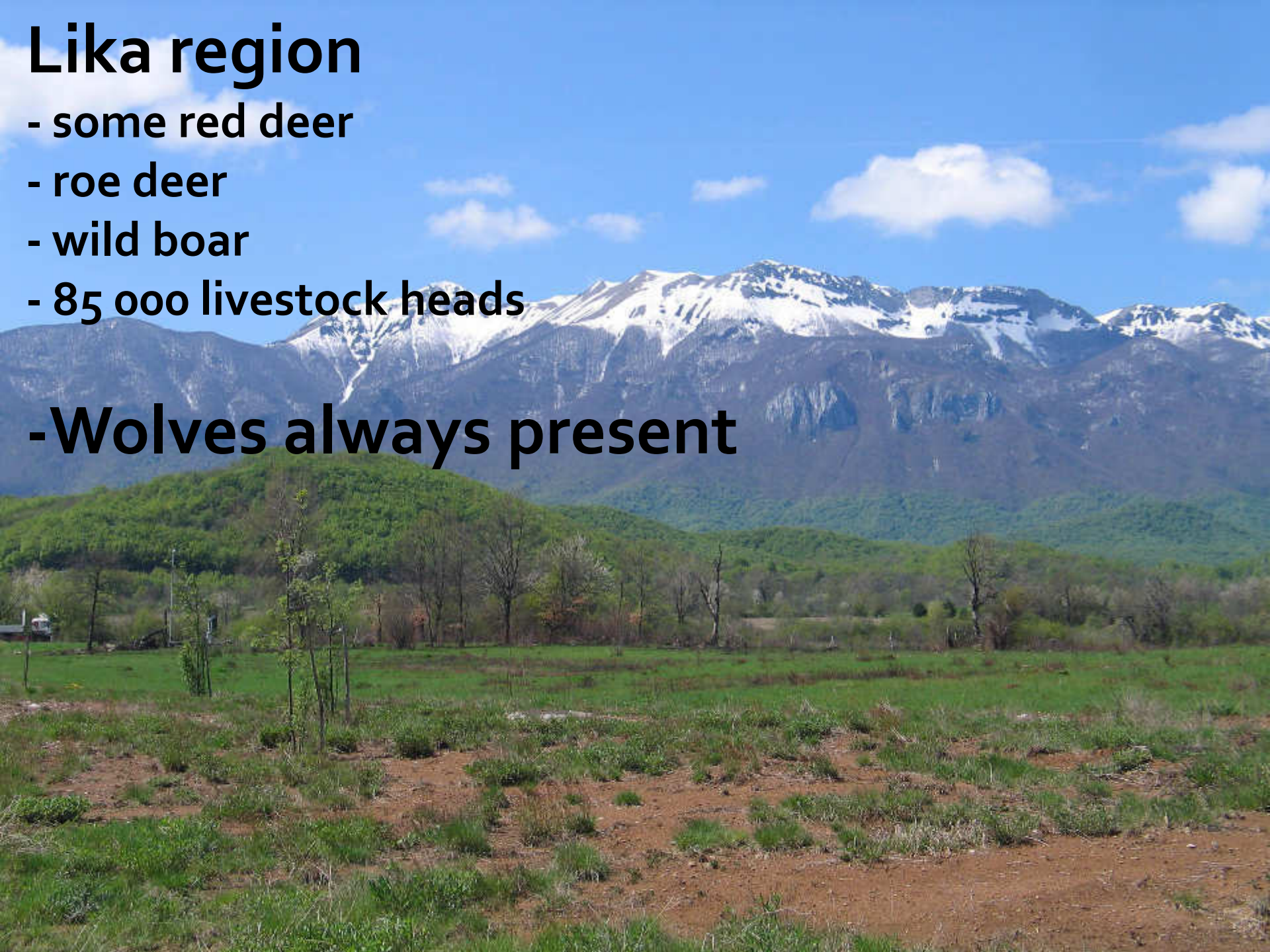

Slovenia
Croatia
Hungary
Land & islands 56608 km²
Forest 24622 km² (43.5%)
Shrubs 1733 km² (3.1%)
Other 30253 km² (53.4%)
Gorski kotar
Lika
Dalmatia
Bosnia & Herzegovina
Serbia
© 2015 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
US Dept of State Geographer
Google earth
Imagery Date: 4/10/2013 46°02'30.93" N 18°06'27.21" E elev 127 m eye alt 467.55 km


Wolf packs in 2013
Bordering packs
YES
NO
Distribution range = 18000 km²
About 50 packs
About 200 wolves
About 500000 livestock heads
N
0 25 50 100 km

Gorski kotar region

- red deer
- roe deer
- wild boar
- 37000 livestock heads mostly along the coast

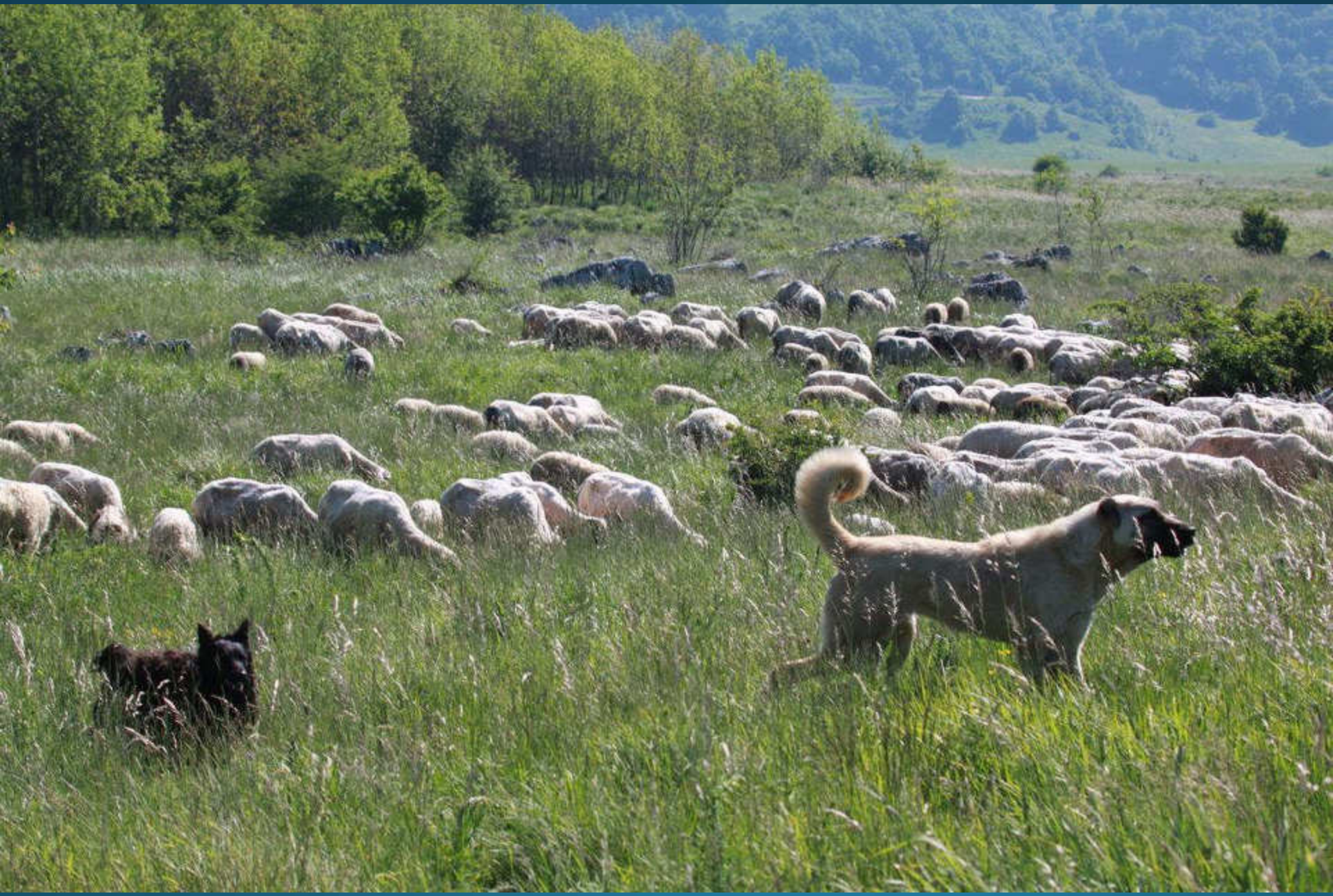
-Wolves always present



Lika region

- some red deer
- roe deer
- wild boar
- 85 000 livestock heads

-Wolves always present



Dalmatia region

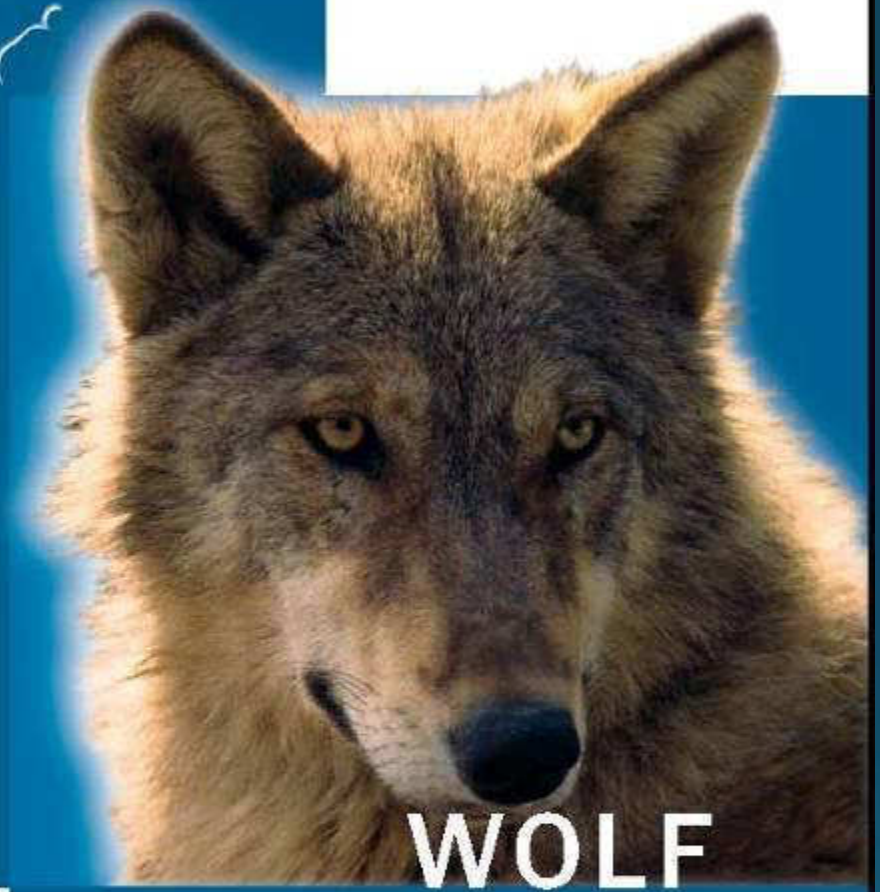
- no red deer
- no roe deer
- some wild boars
- 260000 livestock heads

Wolves exterminated in 1950-es but recolonized the area in 1990-es

Wolf protection since 1995 -> a need for the management plan

The process of making Wolf management plan

STATE INSTITUTE FOR NATURE PROTECTION
REPUBLIC OF CROATIA



WOLF

Management Plan for Croatia

Towards understanding and addressing key issues in wolf management planning in Croatia


Life

Compensations – training field inspectors

Animals killed by wolves per single wolf attack

YEAR	N OF REPORTED WOLF ATTACKS	N OF KILLED LIVESTOCK	AVERAGE
2010	1373	2963	2.2
2011	1671	3105	1.9
2012	1635	2928	1.8
2013	1535	2608	1.7
2014. (until 15.09.2014)	776	1632	2.1
TOTAL/AVERAGE	6990	13236	1.94

CROATIA SUMMARY

Wolves, (brown bears and lynx) are strictly protected by the Habitats Directive's Annex IV

Management plan (the second revision) in place and in use

Damage compensation

Limited quota shooting can be approved

Illegal killing of wolves happens

Fine for killing a wolf is 5200 EUR, but in 20 years of wolf protection, nobody was fined

Images and data courtesy by
Prof. dr. Jon Swenson

WOLF

Norway

30

Norway+Sweden

50

Sweden

320

Total: 400

Google earth

Sheep husbandry and compensation rules

(data and slide courtesy by Jon Swenson)

Norway

>2,000,000 sheep graze unguarded on mountain and forest ranges

Compensation for sheep documented killed or probably killed by large carnivores

No requirement for use of effective protective measures

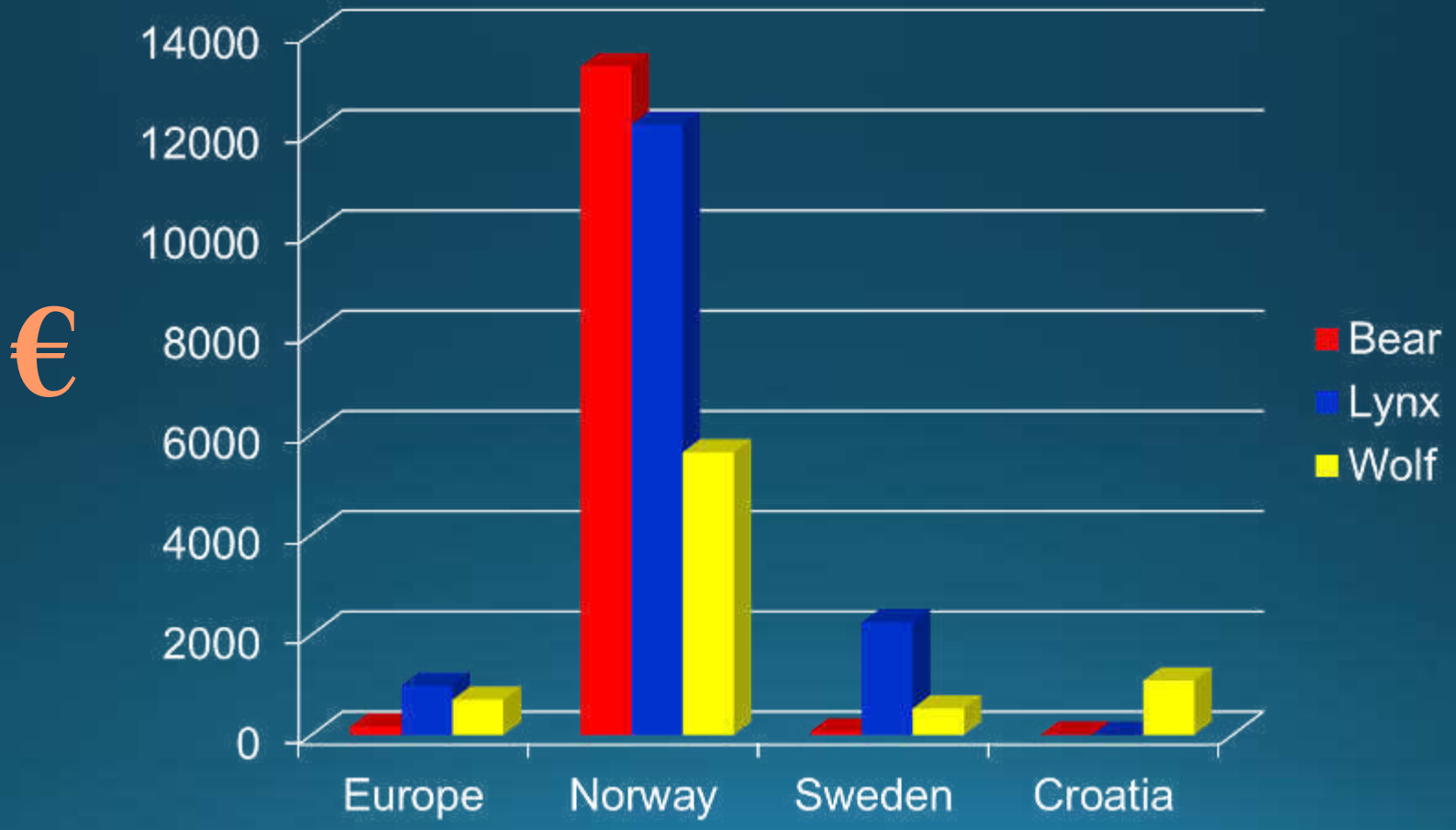
Sweden

450,000 sheep graze mostly in fenced pastures near farms

Compensation for sheep documented killed or probably killed by large carnivores

Use of approved protective measures is required for compensation

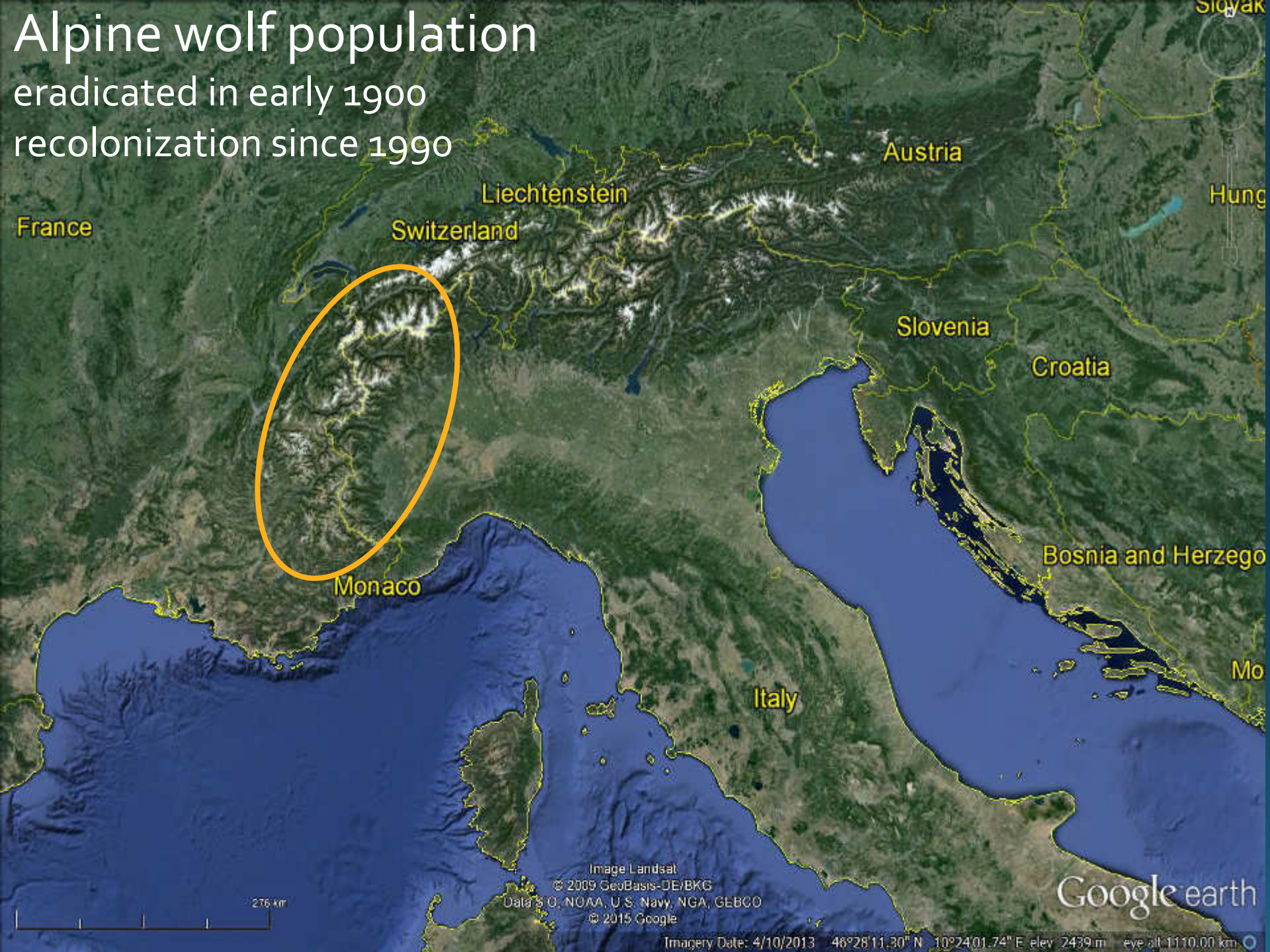
What does it cost society to have large carnivores? (compensation/individual/year, (data and slide courtesy by Jon Swenson)



Alpine wolf population

eradicated in early 1900

recolonization since 1990



Sheep herd on a summer pasture in the Mercantour Mountains (photography by D. Faure).

Mercantour mountains (southeastern France)

- It's estimated that there are around 250-300 wolves in France
- They are thought to have killed more than 6000 animals in 2013, (Ministry for Ecology)
- predation on domestic and game species causes a strong opposition from part of the local residents

Rediscovering forgotten truth(s)

- when prevention methods are lacking, the predation on domestic ungulates is not necessarily rare in areas characterized by a rich and diverse wild ungulate guild (Poulle, M. L., B. Lequette, et al. (1997)

Rediscovering forgotten truth(s)

confining sheep in the presence of several livestock-guarding dogs can prevent a large majority of livestock losses to wolves in the southern French Alps (Espuno, Lequette et al. 2004).


Scotland:
Wolves absent for at least 250 years
© 2015 Google
© 2009 GeoBasis-DE/BKG
Image Landsat
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Google earth
Imagery Date: 4/10/2013 55°08'27.92" N 2°17'51.55" W elev 280 m eye alt 1408.35 km

Ideas about wolf or lynx reintroduction in UK (Scotland)

Gorman, M. L. (2007). **Restoring ecological balance** to the British mammal fauna. Mammal Review, 37(4), 316–325.

Manning, A., Gordon, I., & Ripple, W. (2009). **Restoring landscapes of fear with wolves** in the Scottish Highlands. Biological Conservation, 142(10), 2314–2321.

Nilsen, E. B., Milner-Gulland, E. J., Schofield, L., Mysterud, A., Stenseth, N. C., & Coulson, T. (2007). **Wolf reintroduction to Scotland**: public attitudes and consequences for red deer management. Proceedings. Biological Sciences / The Royal Society, 274, 995–1002. doi:10.1098/rspb.2006.0369

Wilson, C. J. (2004). **Could we live with reintroduced large carnivores in the UK**? Mammal Review, 34(3), 211–232. doi:10.1111/j.1365-2907.2004.00038.x

Hetherington, D. A., & Gorman, M. L. (2007). Using prey densities to estimate the **potential size** of **reintroduced populations of Eurasian lynx.** Biological Conservation, 137(1), 37–44.

Hetherington, D., Miller, D., Macleod, C., & Gorman, M. (2008). A potential habitat network for **the Eurasian lynx Lynx lynx in Scotland**. Mammal Review, 38(4), 285–303.


When there are no wolves,
even sheep can be dangerous!

THANK YOU!