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Reciprocal relationships between humans and wolves as a way to keep wolves at distance from livestock

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As French authors, do we have anything instructive to say about wolves and livestock?

So far, France has failed miserably to protect its farm animals :

11.700+ predated by wolves in 2017

The full range of recommended livestock protection techniques have been used in the French Alps, where 90% of the national losses are still recorded

Enhanced human presence: *"Assistant Shepherd"*

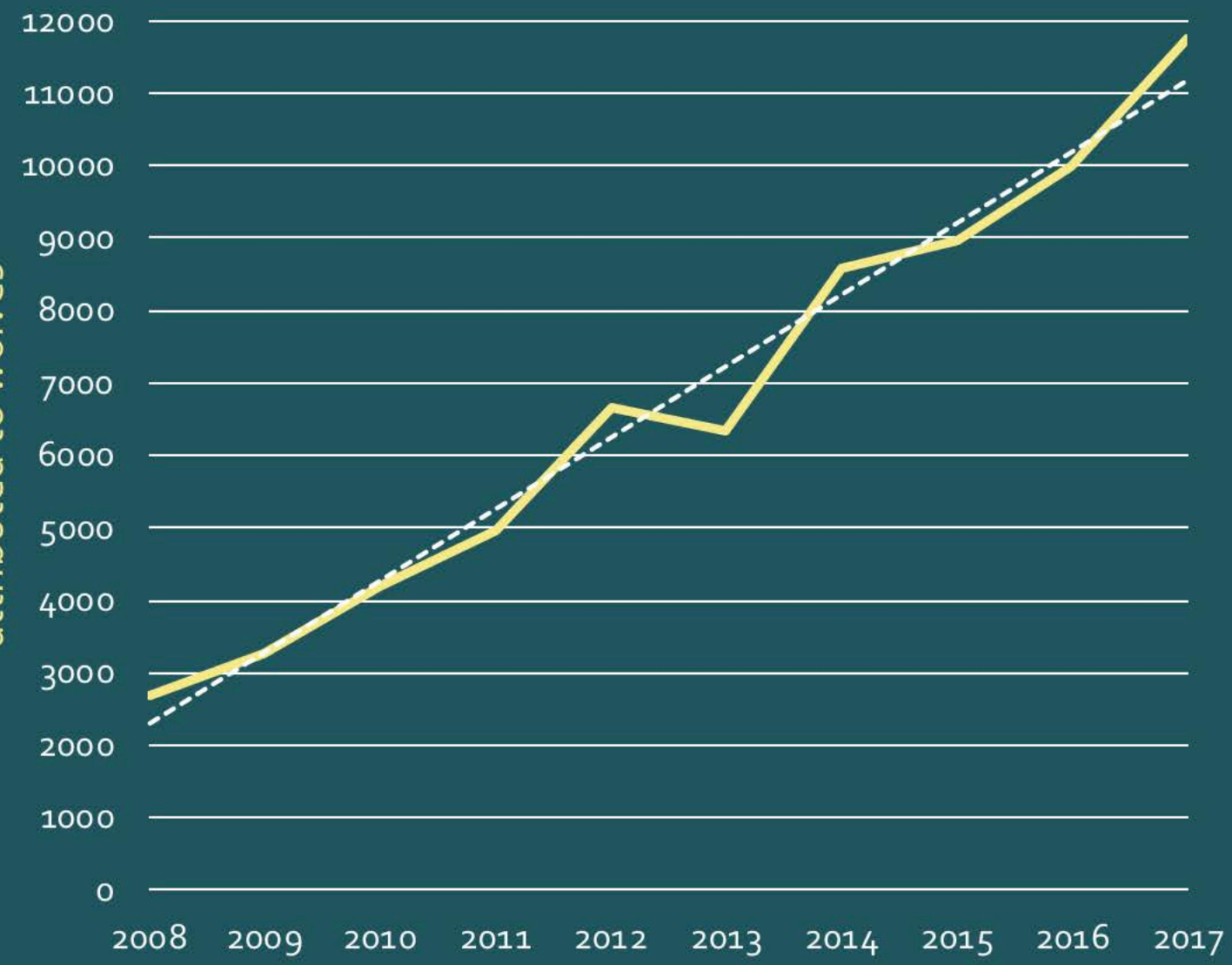
Livestock Guard Dogs

Secure fencing

Compulsory Night Pen

...for which results ?

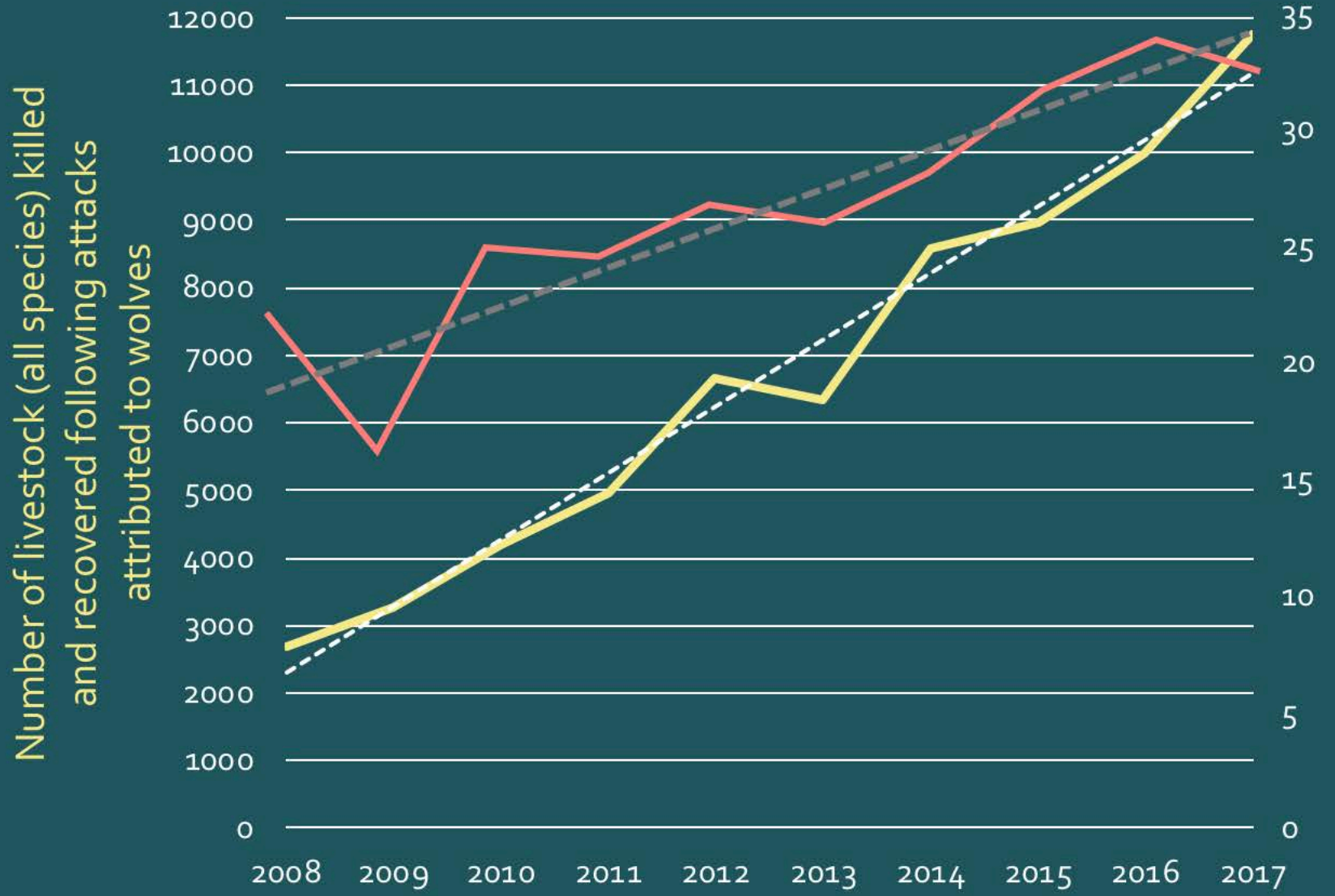
Number of livestock (all species) killed and recovered following attacks attributed to wolves



+990 killed/year

Data source: DREAL Auvergne Rhône-Alpes

...for which results ?



Data sources:
DREAL
Auvergne
Rhône- Alpes
&
ONCFS

What went wrong?

Back in time …to the fundamentals

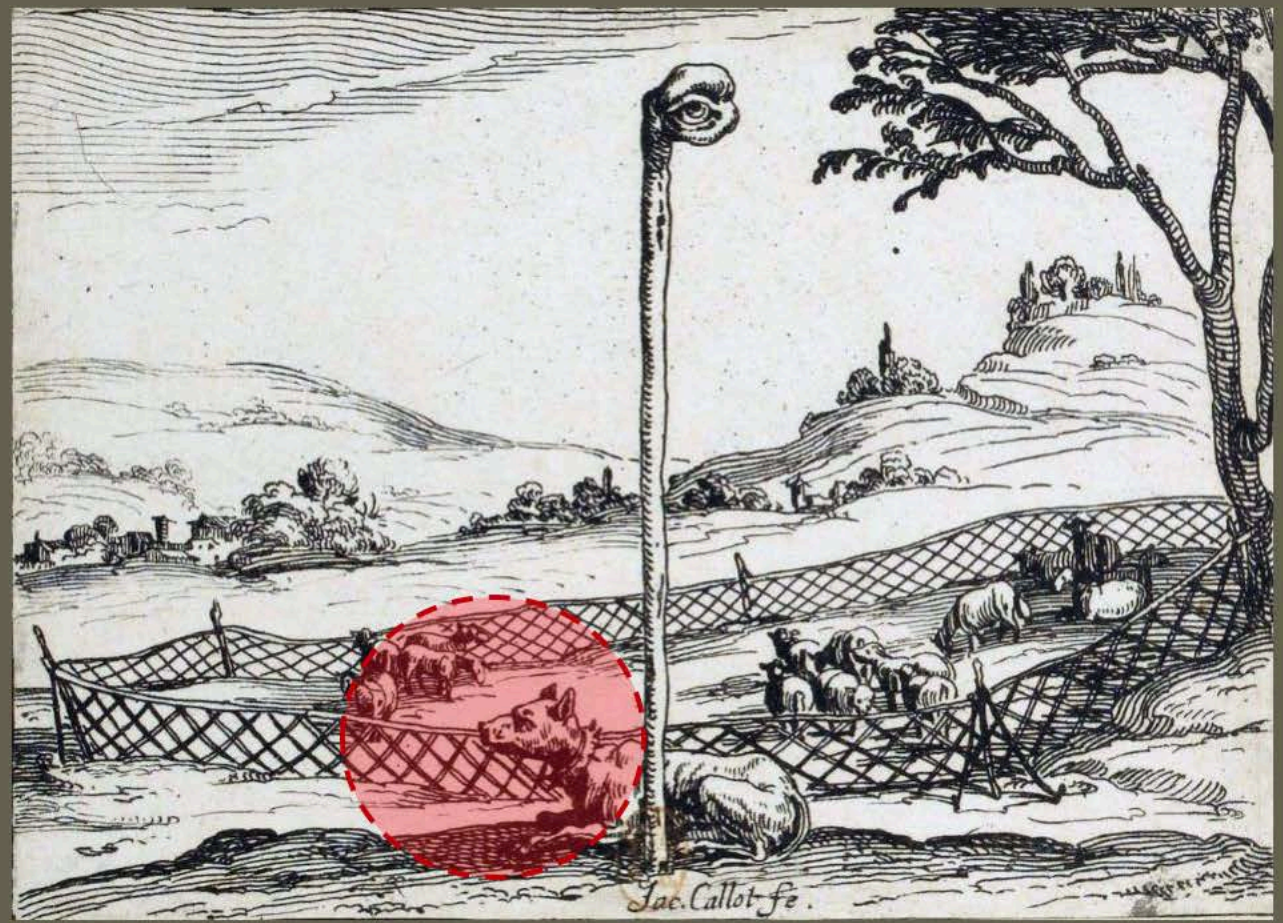
11.500 years of relations between livestock farming and wolves

11.500 years of relations between livestock farming and wolves

Since the beginning of livestock domestication, wolves have been a more or less important source of nuisance : killed or injured animals, additional work and costs for protection, risk for human safety.

11.500 years of relations between livestock farming and wolves

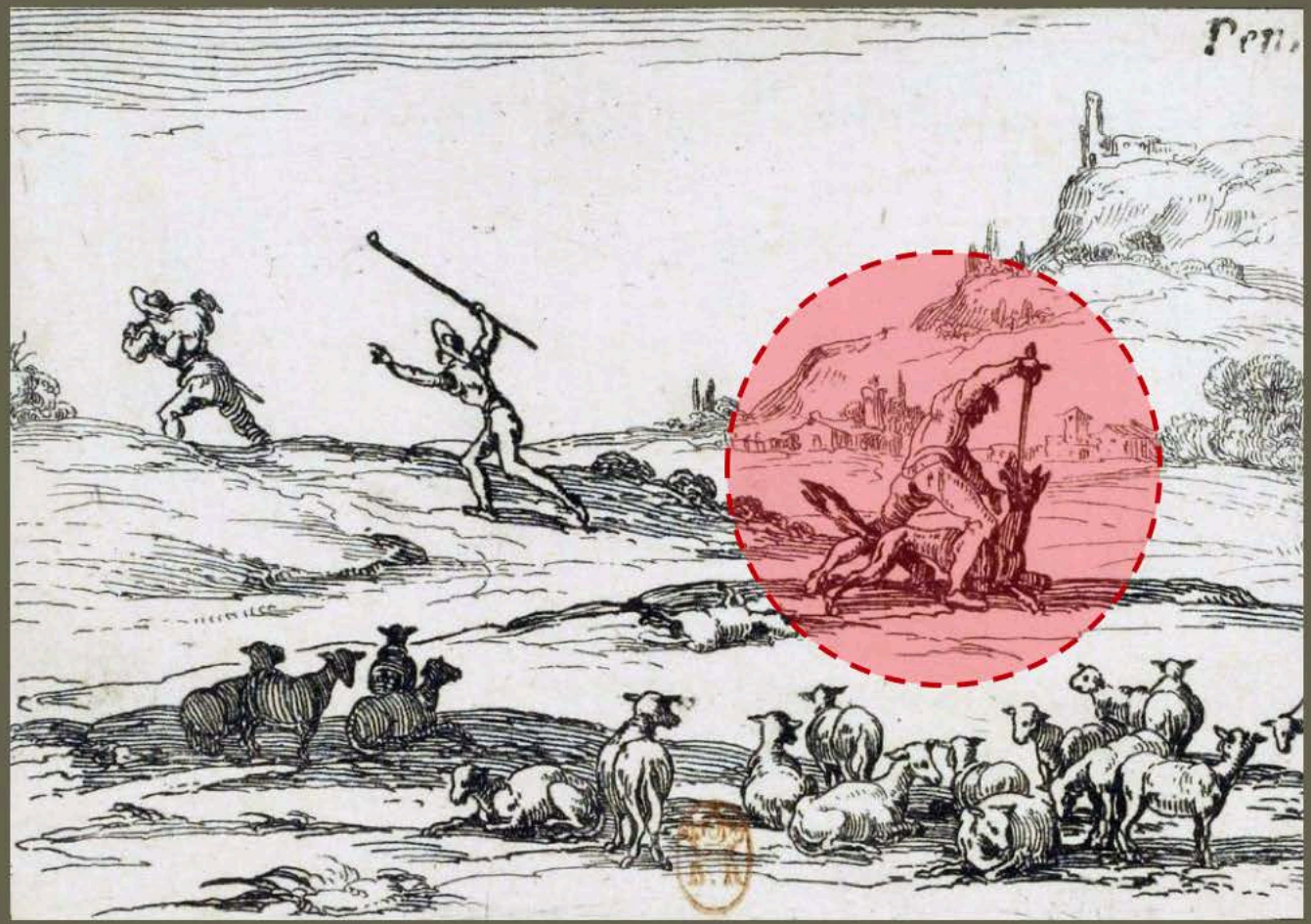
Herders have implemented various ways to protect their herds.



J. Callot 1630.
The vigilant eye

11.500 years of relations between livestock farming and wolves

They also and simultaneously applied constant pressure on wolves by killing those who attacked the herds.

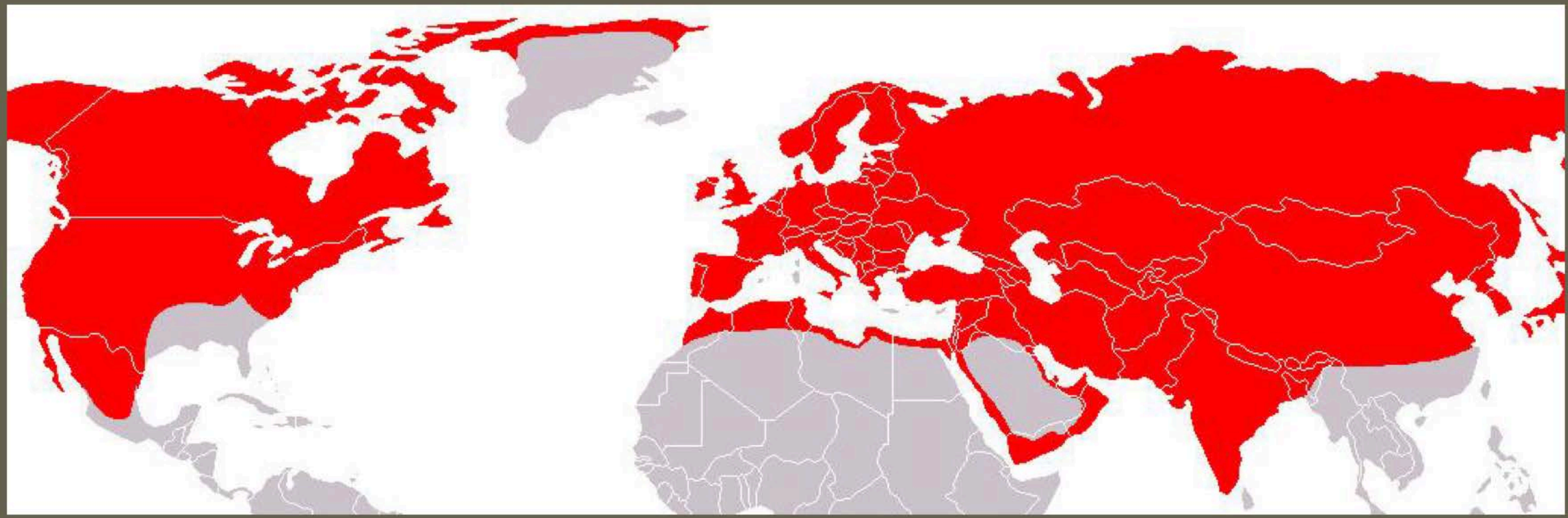


J. Callot 1630.
Shepherds defending their flock

11.500 years of relations between livestock farming and wolves

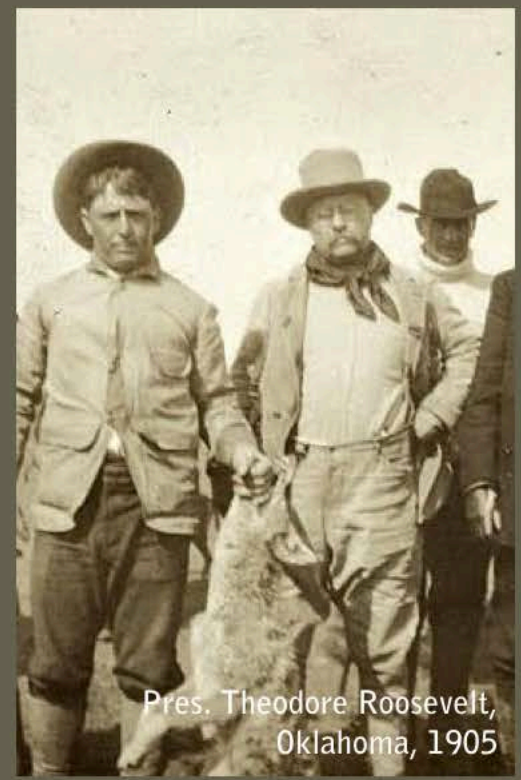
During centuries, low human pressure and wolves' ability to adapt to human activities and infrastructures have allowed human-wolf proximity throughout the northern hemisphere.

Historical distribution of Canis lupus

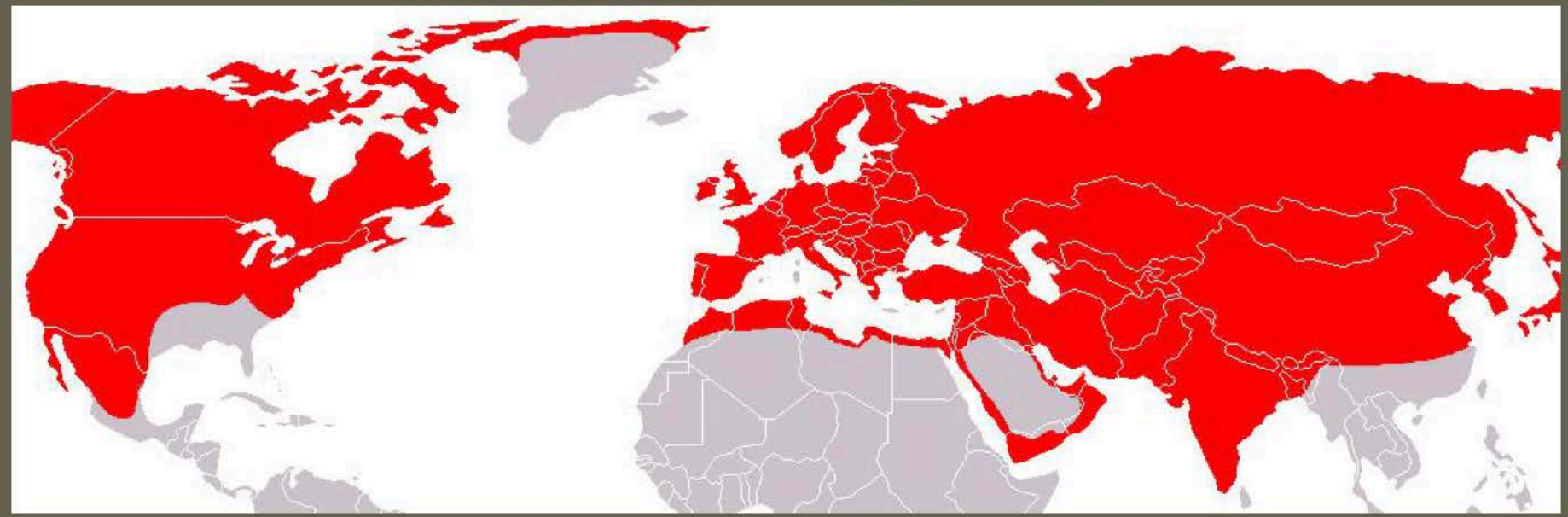


Ending all relationships : wolves' eradication

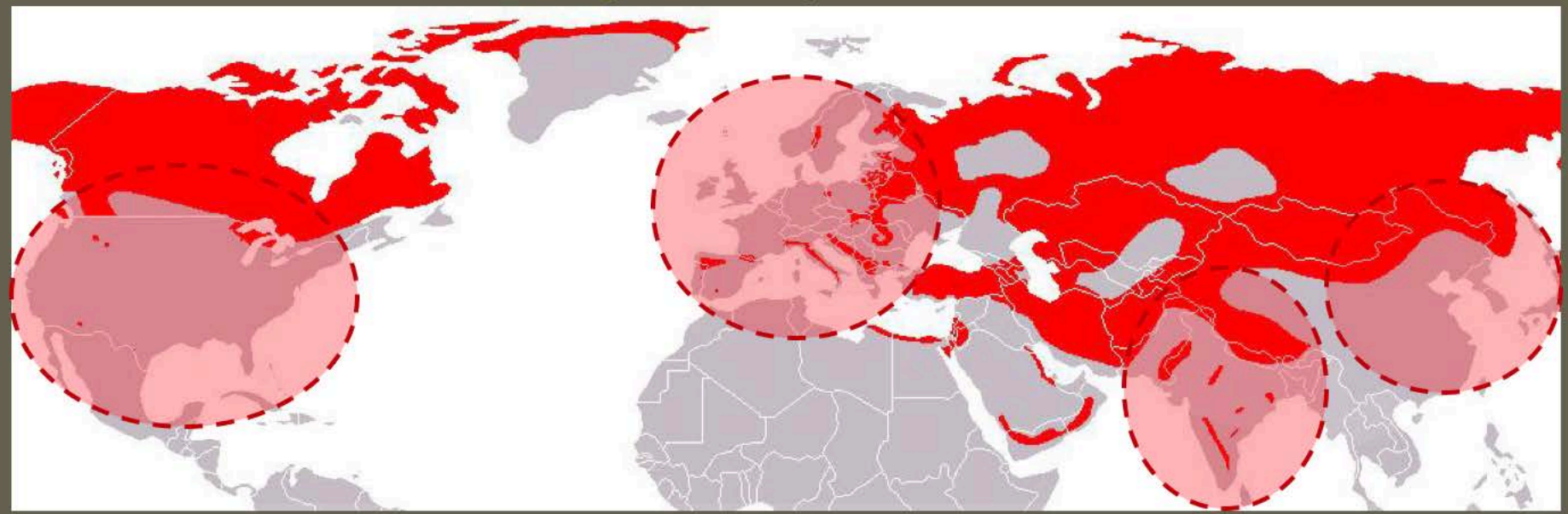
More recently, wolves eradication campaigns have been conducted in several countries worldwide, being favoured by centralized organization of hunting.



Historical distribution of Canis lupus



Distribution of Canis lupus : Years 1950 – 60



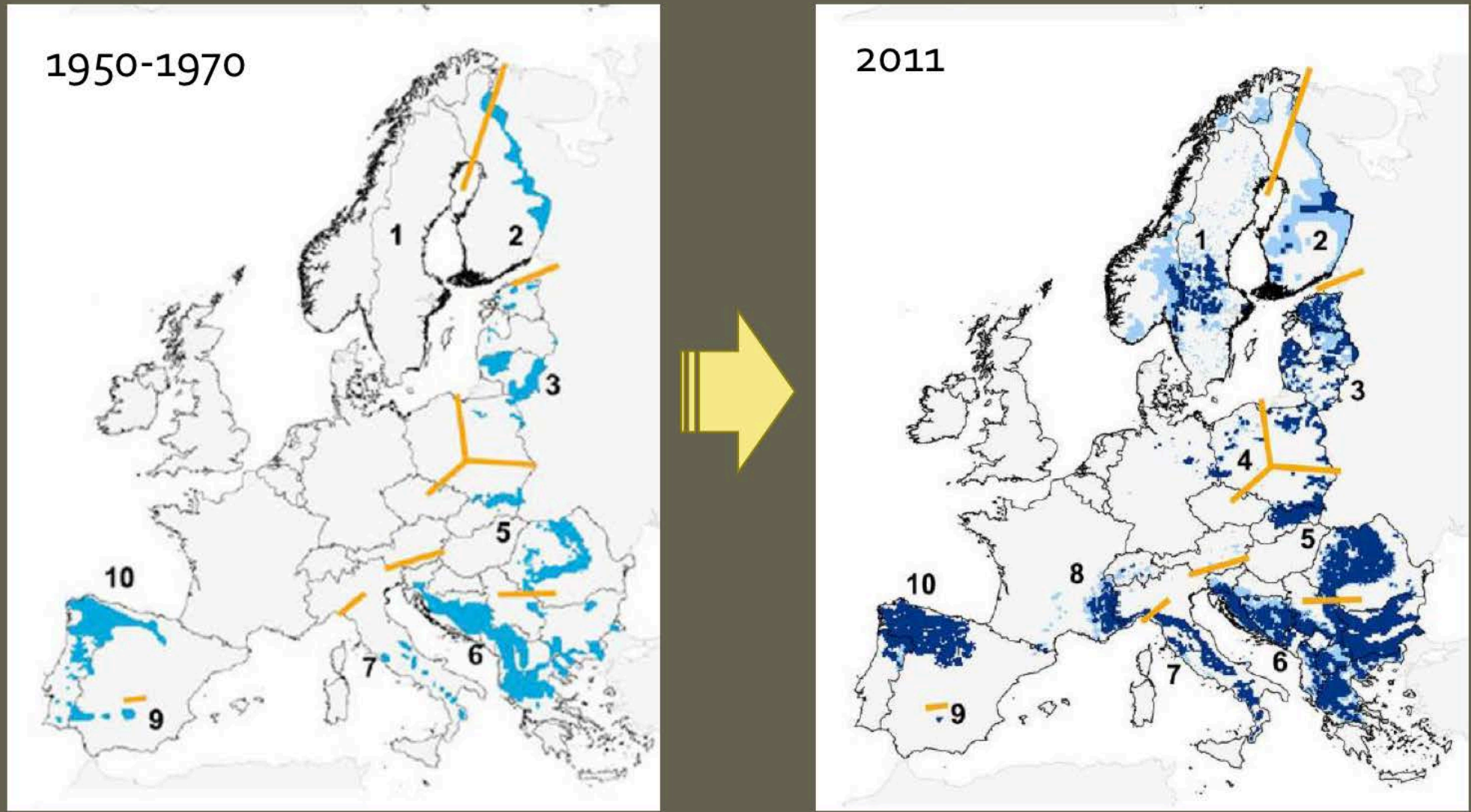
In Europe…

1973 - Creation of the IUCN Wolf specialist group

1979 – *Bern Convention* on the conservation of Europe's wildlife and natural habitats

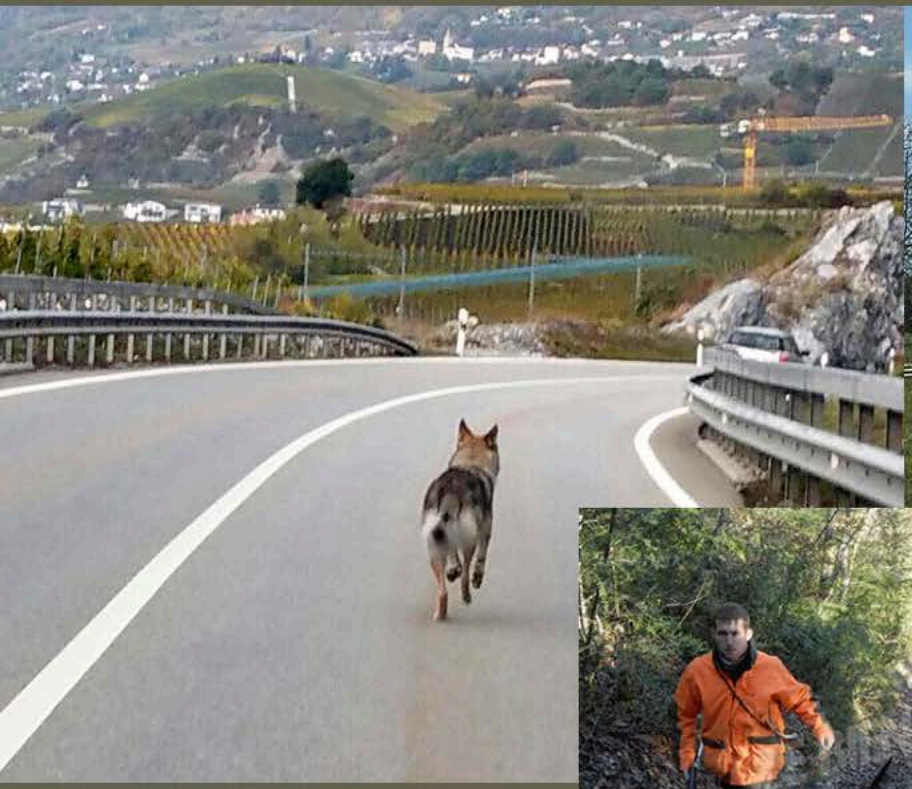
1992 – *EU Habitats Directive and its Annex #2* as a legal duty of conserving outstanding wildlife habitats and their species, *Canis lupus* included.

Re-establishing proximity with wolves
…as strictly protected species in some EU countries



Chapron *et al.* 2014. *Science*

Wolves are coming back in a multi-use landscape and impacting activities which developed in their absence



Many conflicts are currently appearing or increasing in several E.U. countries

How to make relationships between wolves and humans less conflictual ?

Mech and Boitani (2003) suggested that prolonged sympatry can lead to a form of coexistence where compromises are made by both species and conflicts are not perceived as being so intense.

Solutions require the recognition of wolves' ability to adapt to fast changing socio-ecological contexts, as well as the dynamic character of human-wolf relationships.

How to make relationships between wolves and humans less conflictual ?

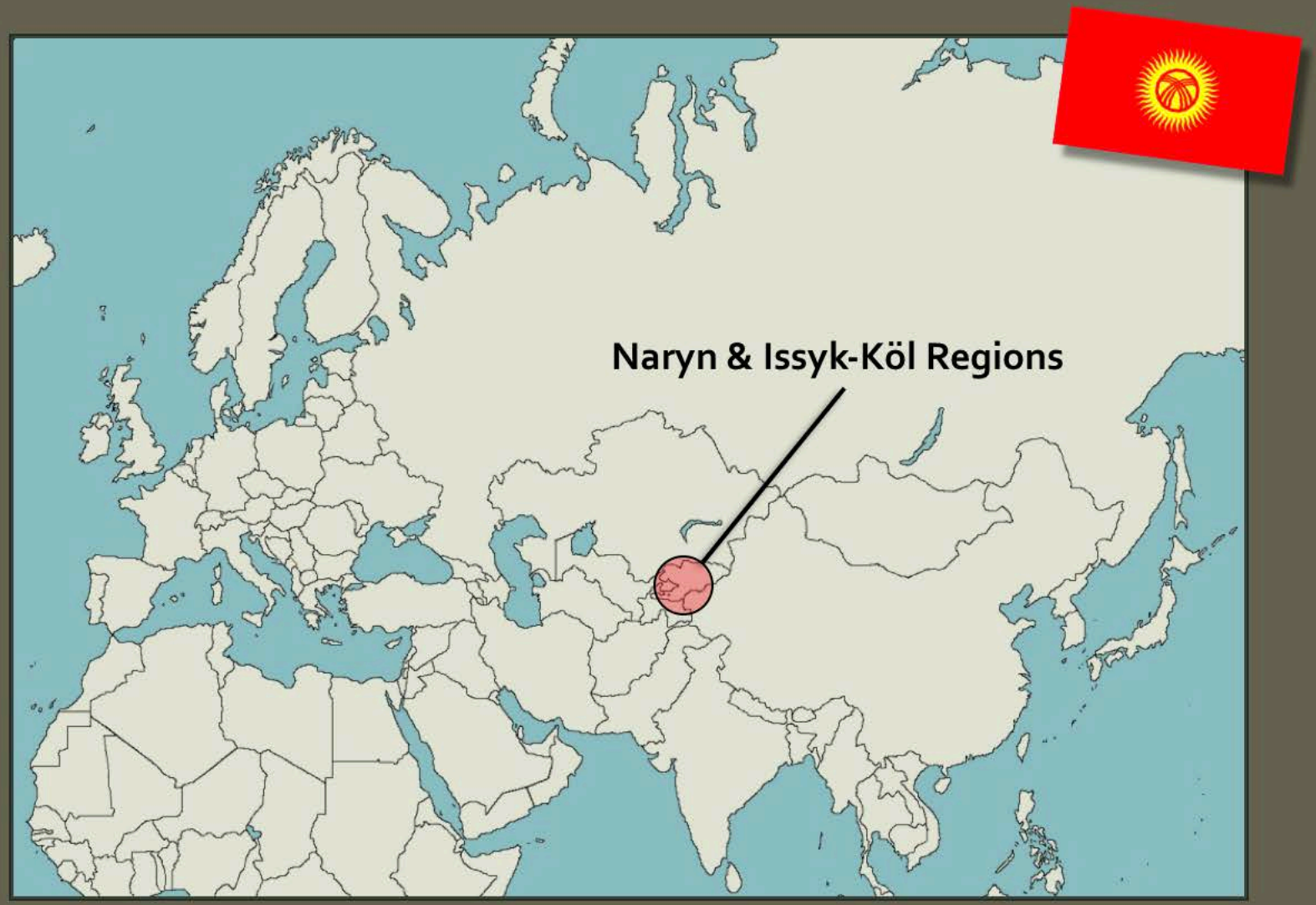
If wolves are adapting their behaviour to human practices, then it should be possible to develop practices aiming at changing wolf behaviour towards humans and their livestock.

But conflict management strategies developed from E.U. institutions have been focused only on protecting livestock from wolves (enhanced human presence, guarding dogs, high fences…)

They have not been directed towards wolves… in order to change their behaviour, notably by associating humans and their livestock as a real danger.

Examples from our studies in some distant countries

Kirghizstan (former USSR)



Naryn Region

Kirghizstan

Photos : Nicolas Lescureux

About 5 million inhabitants and 4000 wolves over 200 000 km²

Rural population > 60 %

Shared territories & landscapes (47 % territory = permanent pasture)

Landscape structure promoting mutual observations and interactions

Shared resources: game and livestock

Kirghizstan

A variety of hunting practices

Photos :
Nicolas Lescureux

Kirghizstan

End of professional hunters

Take back rifles to shepherds

Decrease in human presence on high pastures

Lower hunting pressure

Impossibility to scare wolves by shooting

Decreased presence of livestock on winter high pastures

Decreased distance between winter & summer grazing places

Moving of livestock around villages

Kirghizstan

End of professional hunters

Take back rifles to shepherds

Decrease in human presence on high pastures

Lower hunting pressure

Impossibility to scare wolves by shooting

Less fearful wolves

Decreased presence of livestock on winter high pastures

Decreased distance between winter & summer grazing places

Moving of livestock around villages

Wolves

1. approach villages
2. attack more often
3. attack at daytime

↓

Wolves become uncontrollable...

Kirghizstan

Dynamic relationships

Many interactions & reciprocity

→ Wolves = respectable enemies

To be controlled

Loss of control on wolves

Loss of reciprocity

→ Wolves = invaders threatening livestock

To be eliminated

Northern Rocky Mountains (USA)

Idaho

Idaho – Montana – Wyoming

3.2 million inhabitants over 851 000 km²

Vast wooded mountains, adjacent to agricultural plains

6.1 million beef cattle + 0.8 million sheep

1900-1930 : wolves exterminated

1995-96 : Reintroduction of 31 wolves to Yellowstone National Park and 35 wolves to Idaho – expected pop. target: 300

Northern Rockies current wolf pop. ± 1700

Idaho – Montana – Wyoming

Wild ungulate hunting is a Rocky Mountains heritage

Hunters are well equipped and organised

Breeders and herders have skills to fight against many kinds of livestock predators : coyotes, bears, mountain lions…

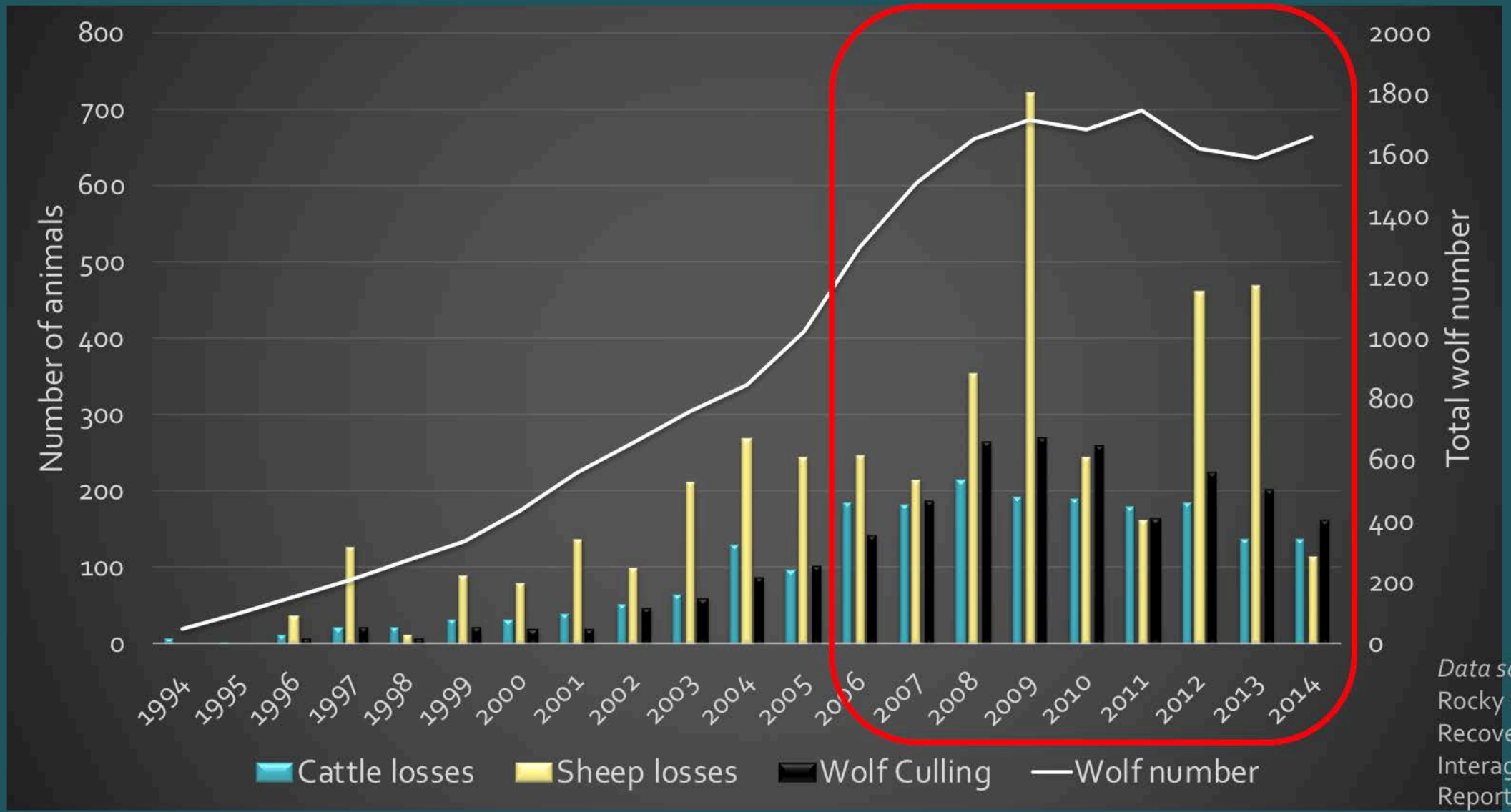
Idaho – Montana – Wyoming

In 1987, 8 years before the reintroduction of wolves in Yellowstone NP and Idaho, US Fish and Wildfire Service explain its wolf regulation strategy :

"A control plan(s) will be develop for resolving wolf depredation problems. The goal of the control program is to reduce and prevent livestock losses to wolves while removing the minimum number of wolves necessary to resolve the conflict yet still progress toward recovery."

U.S. Fish and Wildlife Service 1987. Northern Rocky Mountain Wolf Recovery Plan. U.S. Fish and Wildlife Service, Denver, Colorado, 119 pp.

Confirmed livestock depredations, number of wolf culling, and total wolf number in the 3 NRM states (ID-MT-WY)



Data source: Northern Rocky Mountain Wolf Recovery Program Interagency Annual Reports

Idaho – Montana – Wyoming

Annual average wolf predation on livestock and (min-max) 2006-2014

180 cattle per year (136 – 214)

330 sheep per year (144 – 721*)

(*) 2009: Record year for predation on sheep (721)
As a consequence : 25 of the 267 NRM packs were eliminated.

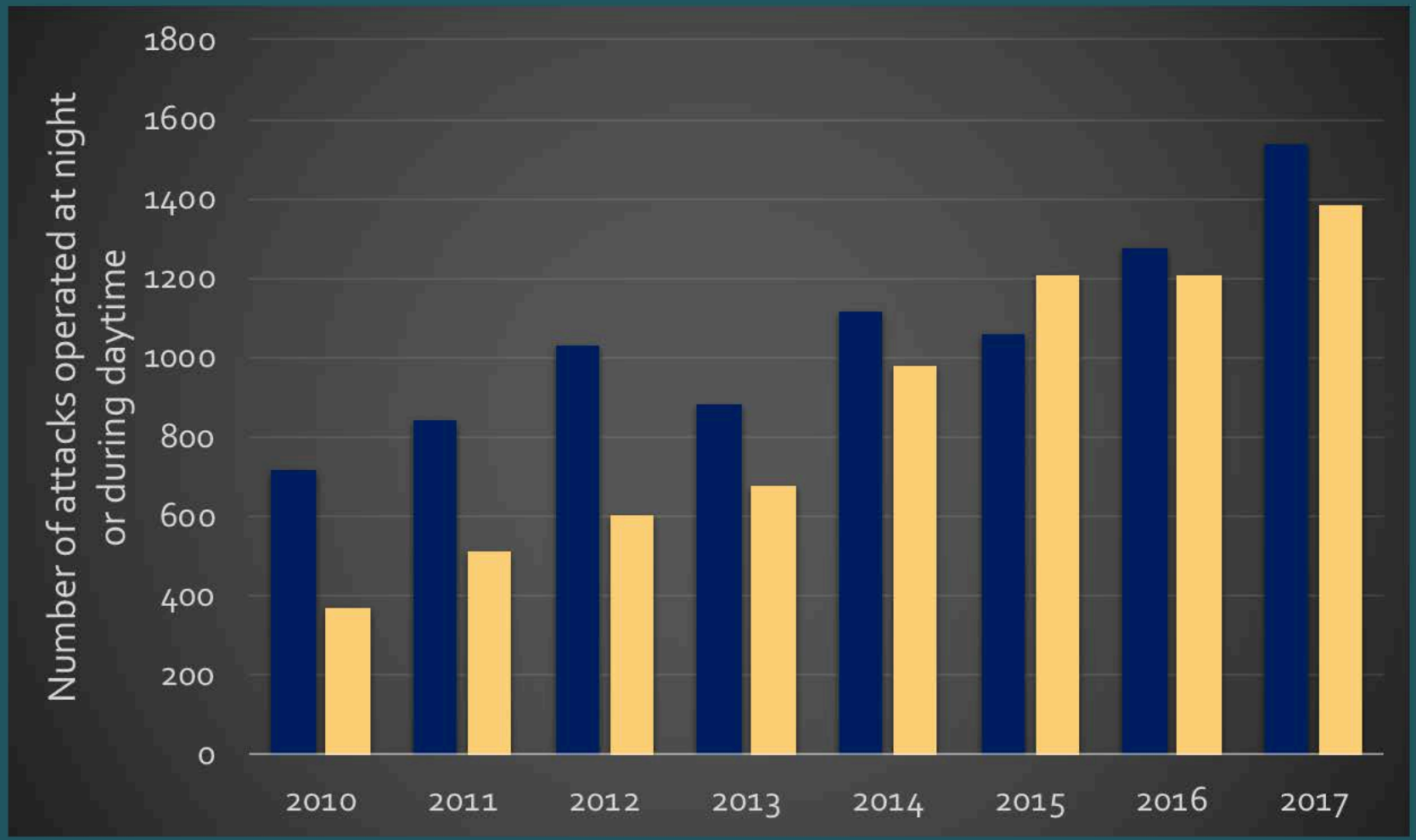
When talking about these numbers with US experts visiting France...

More than 10,000 livestock killed per year in France ?
Are you sure you're not adding one too many zero ?

How to explain the large and constant increase in the number of victims during the last ten years in France ?

Strictly protected wolves have adapted easily to favorable conditions

Their adaptive capacity is illustrated in France with the change from predation mostly at night (when flocks are penned and in the custody of guard dogs and humans) to attacks 50-50 day and night.



Data source: GéoLoup database, DREAL Rhône-Alpes, *data analysis by* CERPAM

Another sign of adaptation :

While predation still occurs in high mountain summer pastures, more and more attacks are now also carried on in France during all four seasons, in inhabited valleys and low lands where the absence of snow allows grazing all year round.

Photo credits: Sylvie Arnaud / La Provence

The adaptive behaviour of wolves to local conditions and risk is a well known process

In France, livestock breeders, herders and assistant herders, are not in a position to signify clearly enough to the wolves that they represent any serious kind of threat.

They are innocuous humans among …so many others in the countryside.

The coexistence between livestock farming and wolves needs the establishment, or re-establishment, of reciprocal relationships in order to maintain an acceptable distance and minimise conflicts.

Reciprocity corresponds to a proportional adjustment between :

(i) the impact related to predation (ecological, economic, social, psychological,…) AND

(ii) the possibility of exercising direct and legal control over predation and predators.

Reciprocity also involves keeping predators at a distance when their behaviour represents a threat (i.e. close proximity to farms, villages and/or domestic herds).

Reciprocity implies the possible use of lethal means (shooting and/or trapping) before, during or just after an attack, in order to:

1° eliminate the most reckless individuals or groups ;
2° associate the presence of humans working with herds with a true danger.

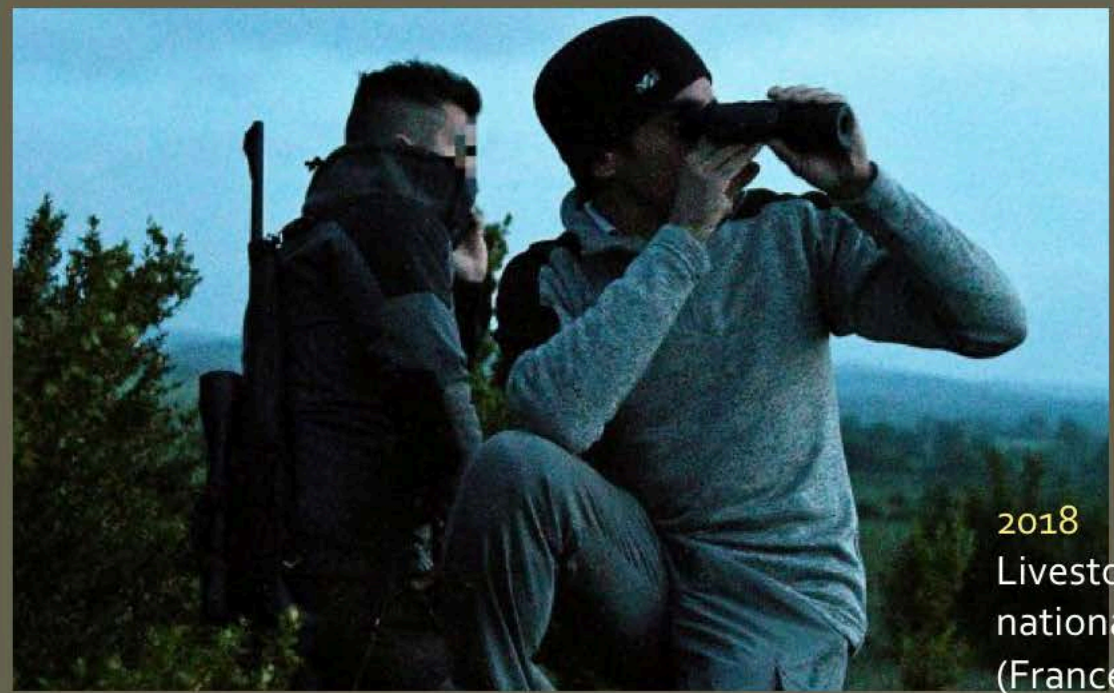
The effectiveness of non-lethal means would probably be enhanced thanks to the reestablishment of wolves' fear of humans (injury/mortality risk)

The protective and repulsive measures (human presence, fladries…) will make sense again, not as barriers but as danger signals.

Managing relationships with opportunistic and intelligent predators remains complex and highly dynamic.

It requires a continuous process of coadaptation between wolves and humans.

Belot (eds.) 1457
Illustration from "Compost et kalendrier des bergiers" (France)



2018
Livestock protection national brigade (France)