

PARCO
NAZIONALE
DELLO
STELVIO

NATIONAL
PARK
STILFSER
JOCH

RED DEER MANAGEMENT IN PROTECTED AREAS

The case of Stelvio National Park



life+
Cervus elaphus corsicanus

CAGLIARI
1 MARZO 2018

Foto Nicola Angeli

LUCA PEDROTTI

STELVIO NATIONAL PARK



TOURISM IS AN IMPORTANT TOPIC

IN STELVIO NP RED DEER
IS A RESOURCE



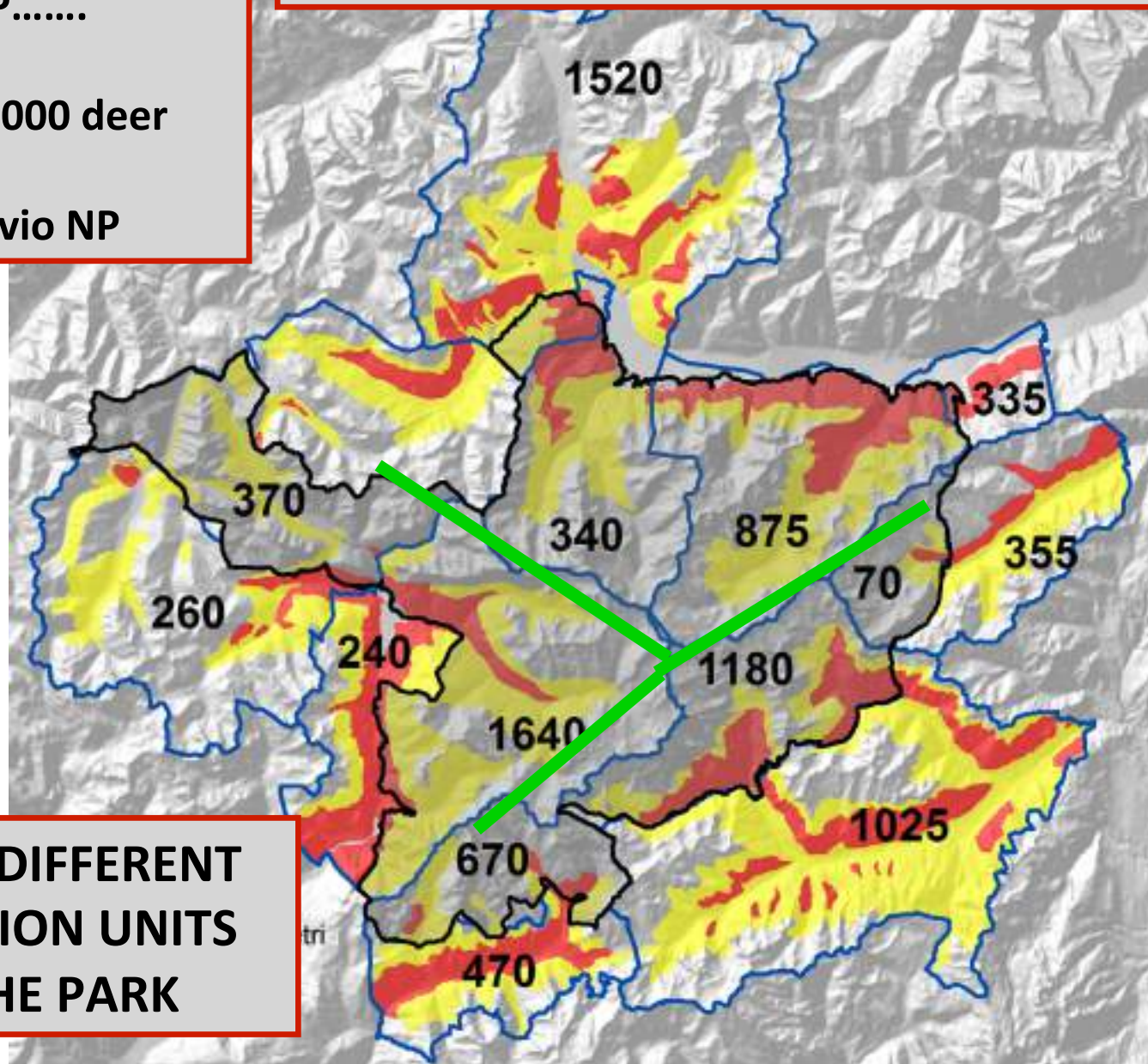
HIGH VISIBILITY

**STATUS OF RED DEER
IS QUITE GOOD IN
STELVIO NP.....**

Around 10.000 deer

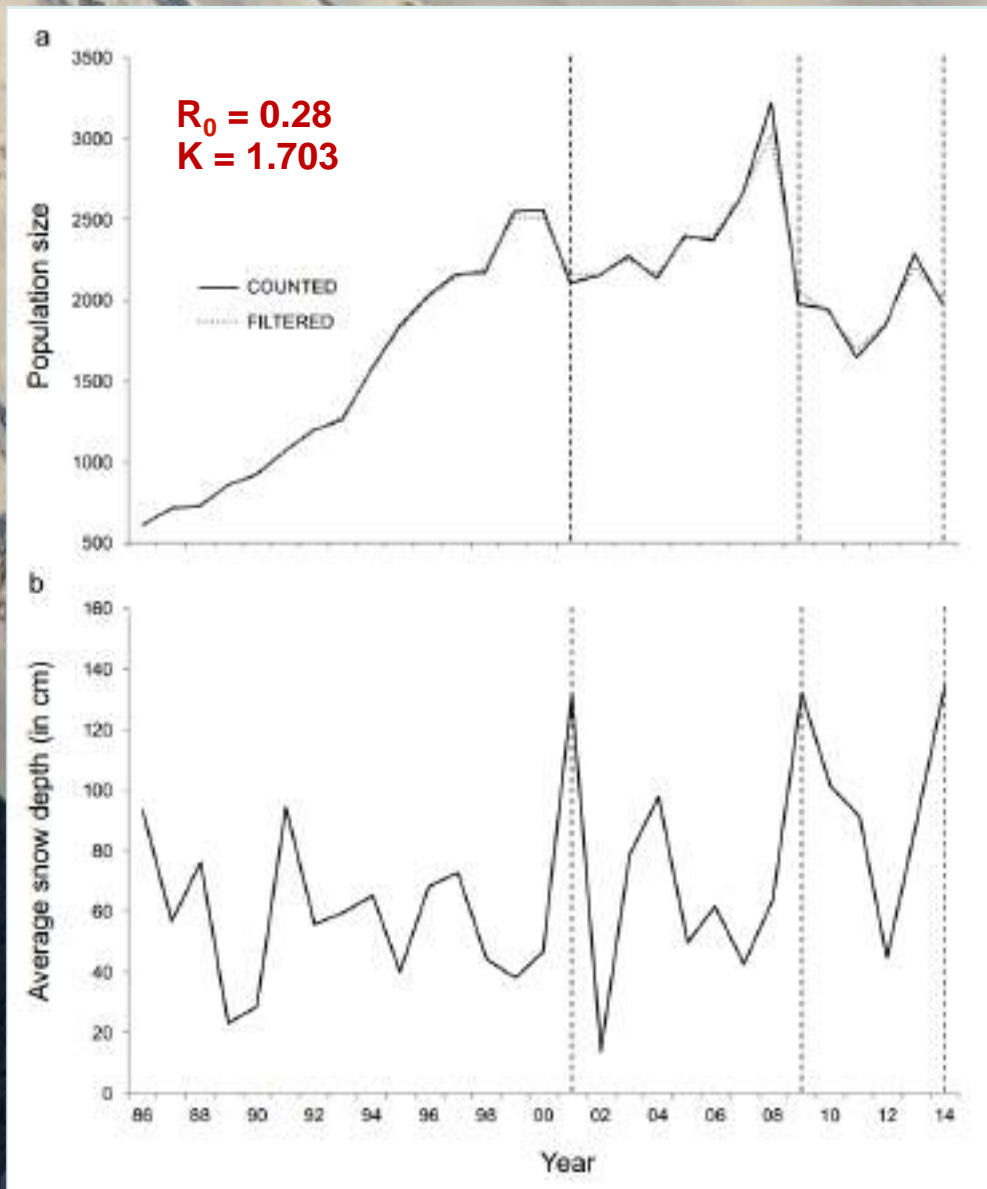
70% in Stelvio NP

**LOCAL DENSITY 10-20 RED DEER / KMQ
WINTER AREAS UP TO 35-40 DEER / KMQ**



**SEVERAL DIFFERENT
POPULATION UNITS
LIVE IN THE PARK**

POPULATION DYNAMIC IS CONTROLLED BY DENSITY AND WINTER HARSHNESS



Biological Journal of the Linnean Society 2017, 122: 1–16

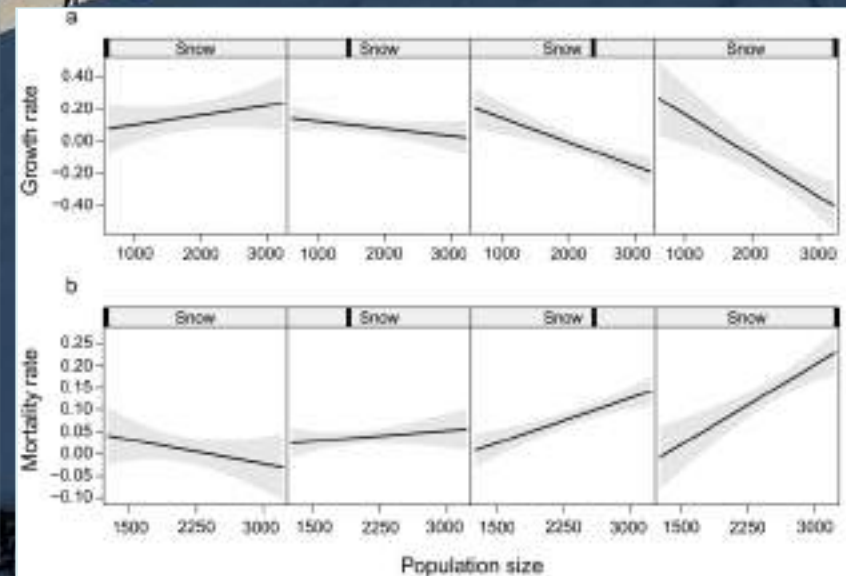
doi: 10.1111/bjls.12217

ORIGINAL ARTICLE

The role of weather and density dependence on population dynamics of Alpine-dwelling red deer

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NEED OF POPULATION CONTROL?

Impacts / Damages to human activities

IMPACTS on Ecosystems and Biodiversity

RED DEER as an ecosystem engineer

IN STELVIO NP RED DEER IS A PROBLEMATIC SPECIES TOO

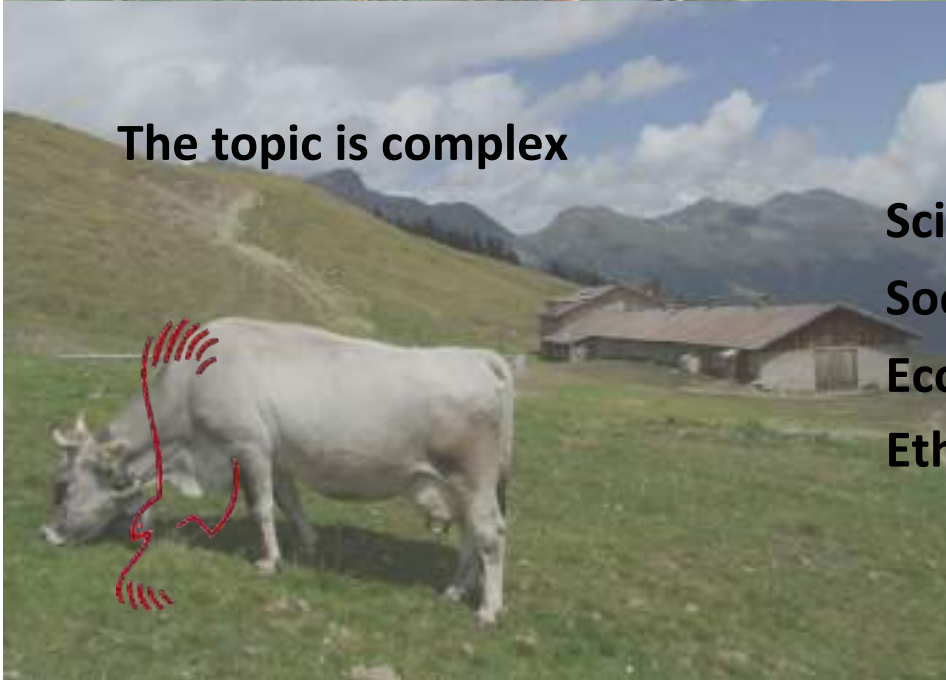
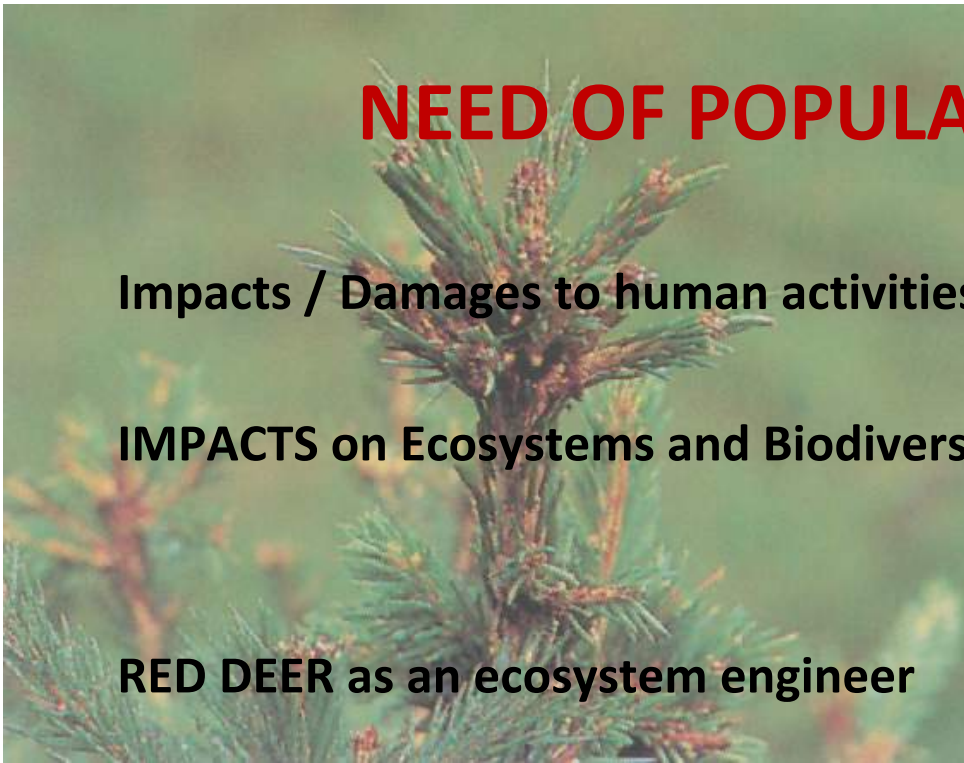
The topic is complex

Scientific – ecological

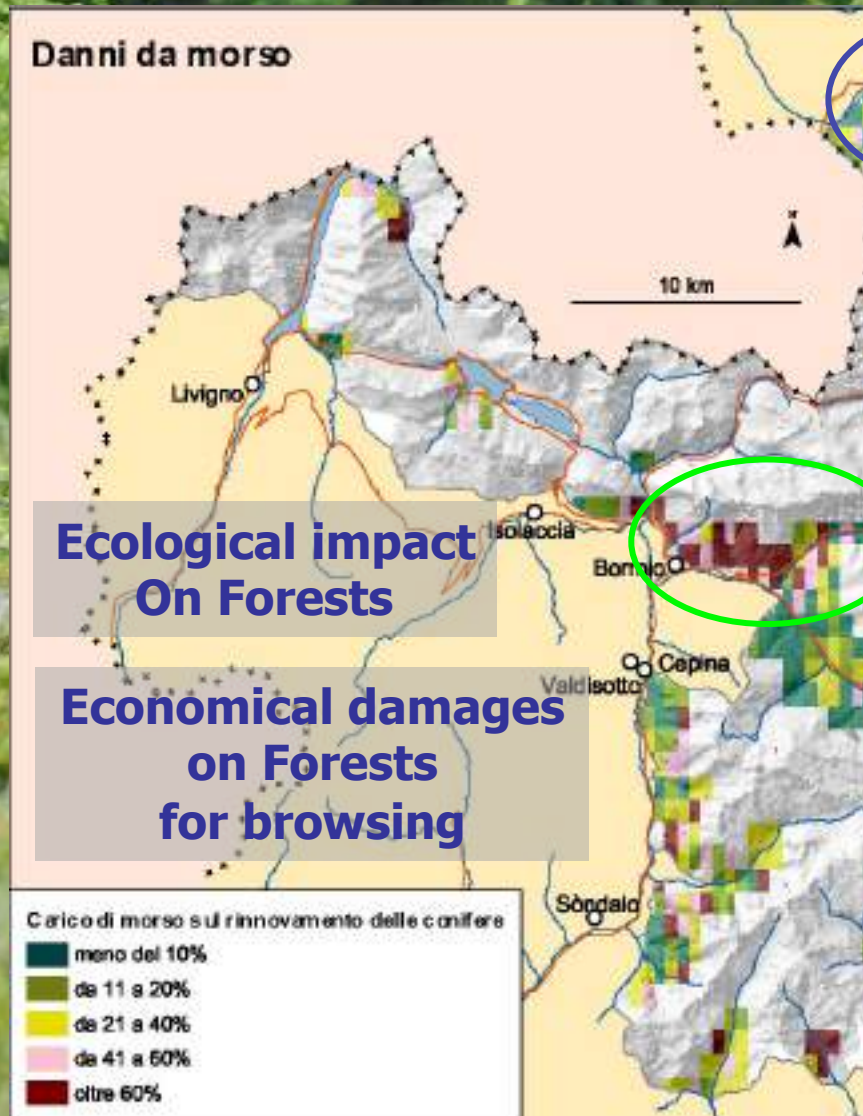
Social

Economic

Ethic (?)



IMPACT ON FOREST REGENERATION





IMPACT ON ECOSYSTEMS AND BIODIVERSITY

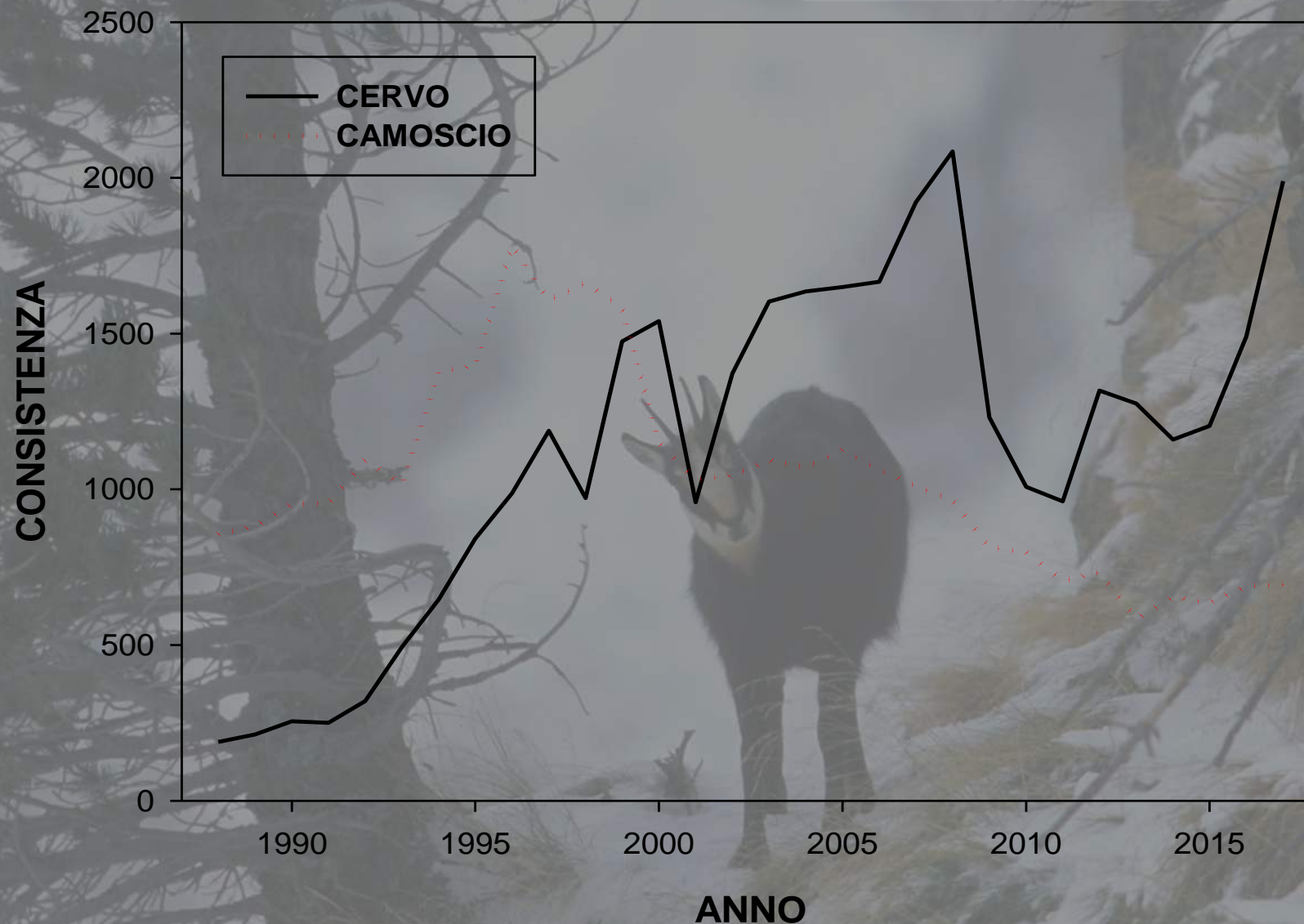


COMPETITION ?



FROM 1997 CHAMOIS IN THE PARK IS DECREASING

**SIGNIFICATIVE RELATIONSHIP
WITH DENSITY, SNOW AND RED DEER INCREASE**



The Park Administration decided to reduce impacts and damages by culling programs to lower red deer population size

Which is the difference between CULLING and HUNTING? (in terms of goals)



THE PARK IS NOT A CLOSED SYSTEM

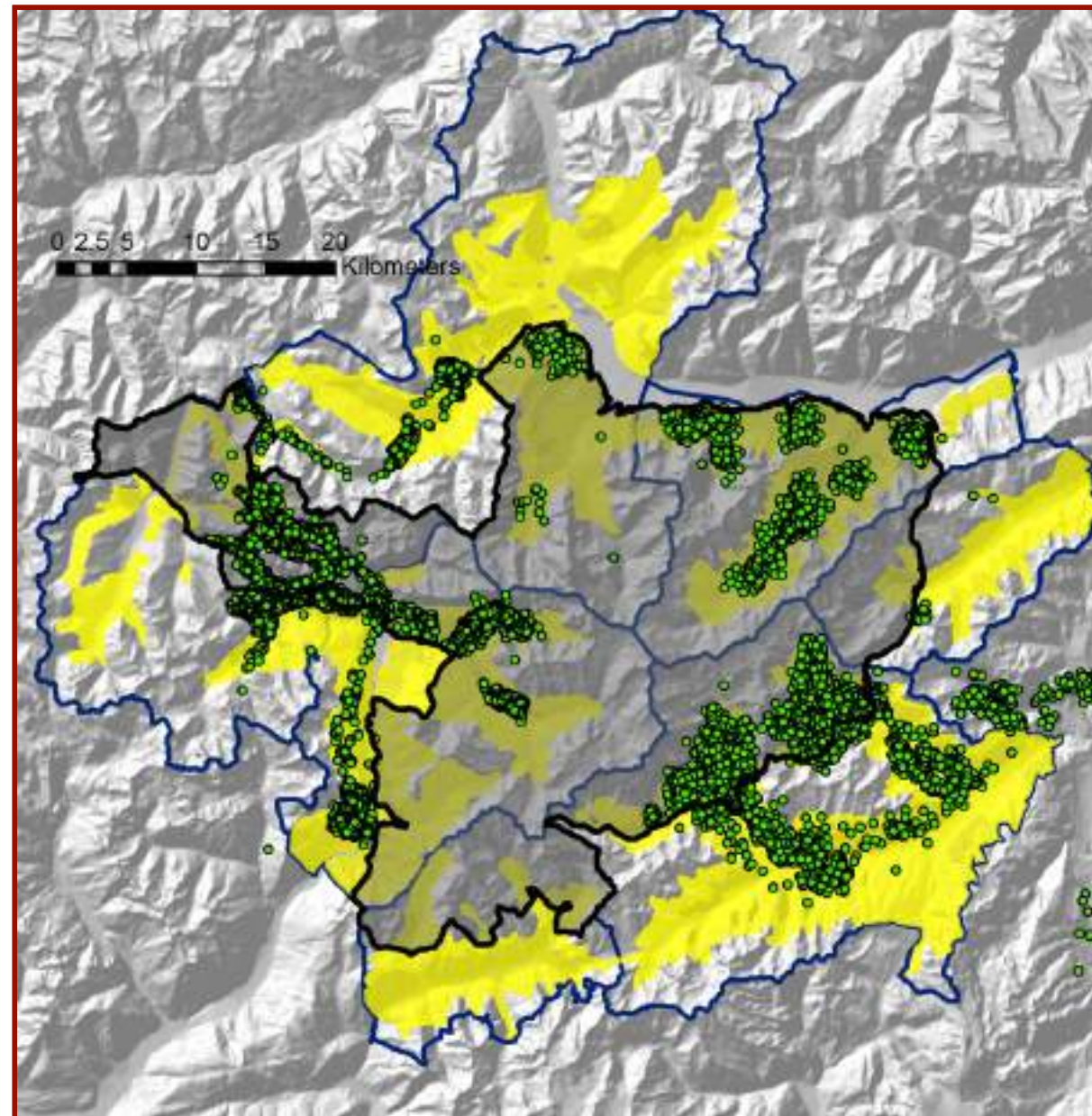


In the Alps is not possible to completely divide conservation and management of large species inside and outside protected areas

**AROUND 10.500
RED DEER**

**83 fitted with
radio-collars**

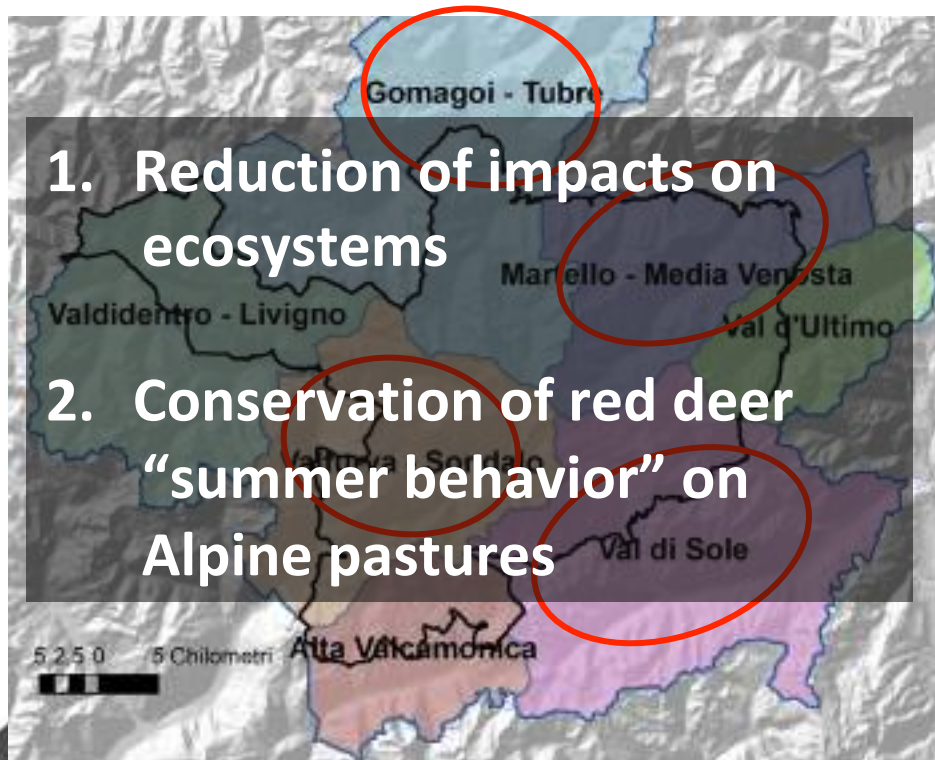
234 Marked



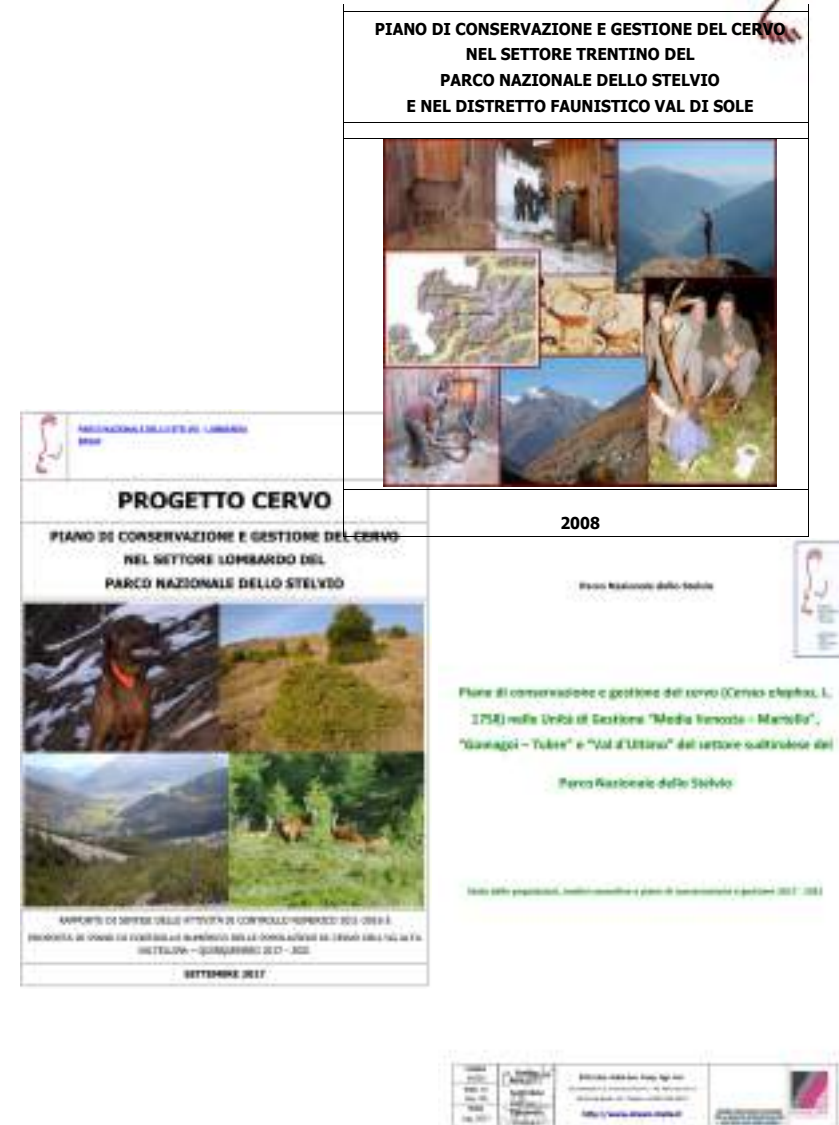
A POSSIBLE VISION ?

7 MGMT UNITS

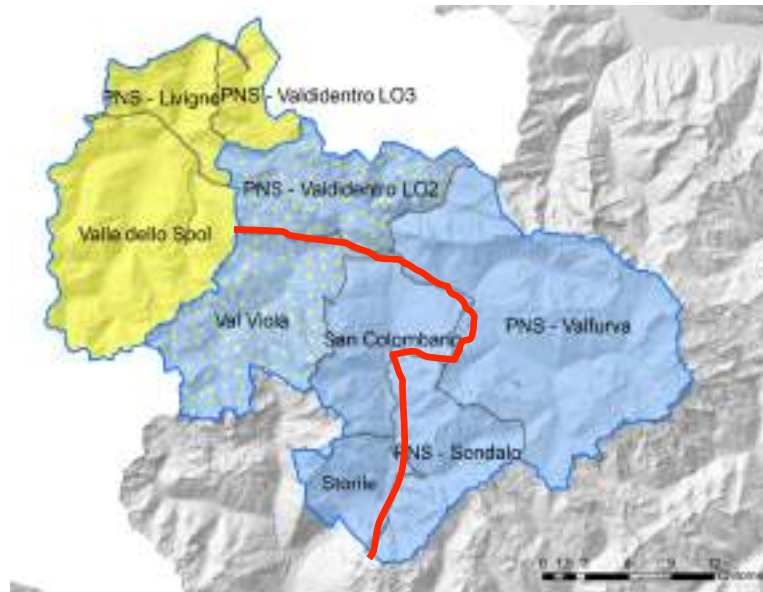
In 4 MU arranged a
culling plan



CONSERVATION AND MANAGEMENT PLANS



WE OFTEN NEED AN INTEGRATED MANAGEMENT



Red deer culling is necessary to
Park ecosystems or to support
(cultural development of) hunters ??



	Goal pop size	Present Pop size	Density
TOTAL	1765	1592	6.6
Park Valfurva	757	1095	12.0
Park Sondalo	479	250	4.7
Hunting District	450	246	2.8

STARTING CONDITIONS AND RULES MAY BE DIFFERENT IN THE DIFFERENT AREAS

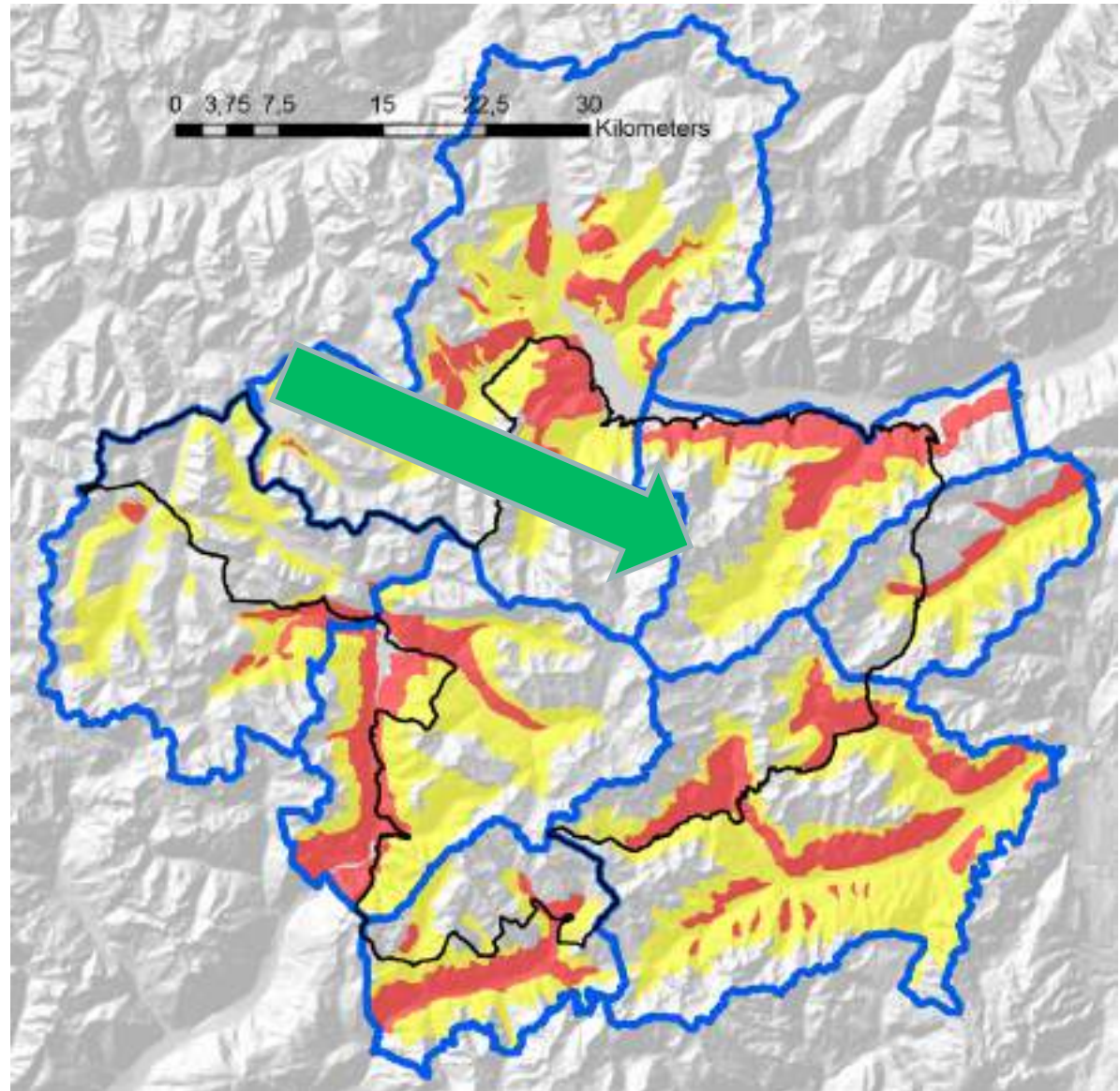


**ACCORDING TO CLIMATE AND GEOGRAPHY AND SOCIAL AND
CULTURAL BASIS**

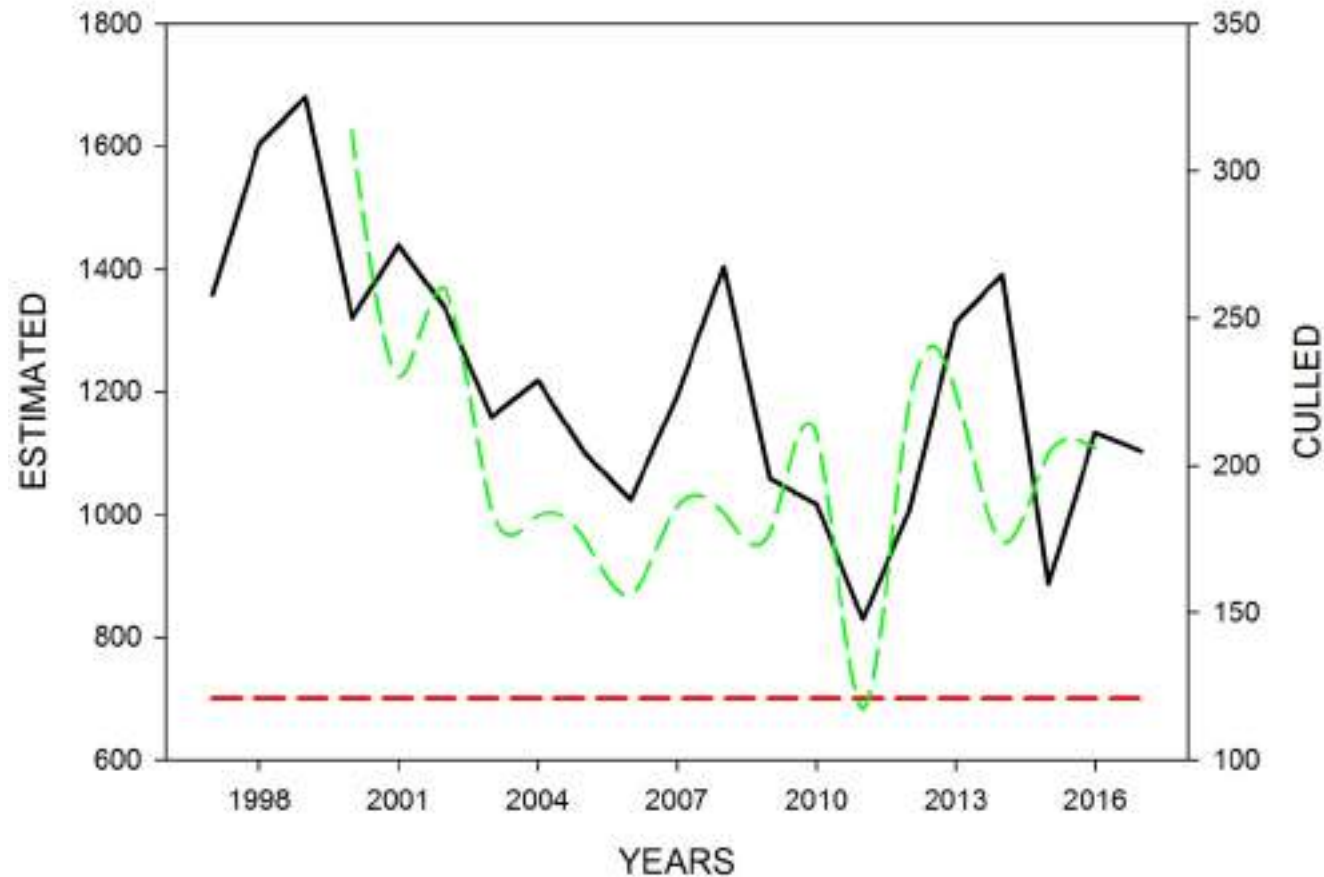
	Mgmt Unit Density	Density Park	Density out of the Park
SONDRIO	7.8	11.5	2.6
TRENTO	5.7	16.0	2.4
BOLZANO – 1999	8.3	8.4	7.9
BOLZANO – 2010	5.1	4.6	7.8



SOME REMARKS ON SOUTH TYROL SECTOR



Which “take home” message after 20 years from the beginning in BZ?

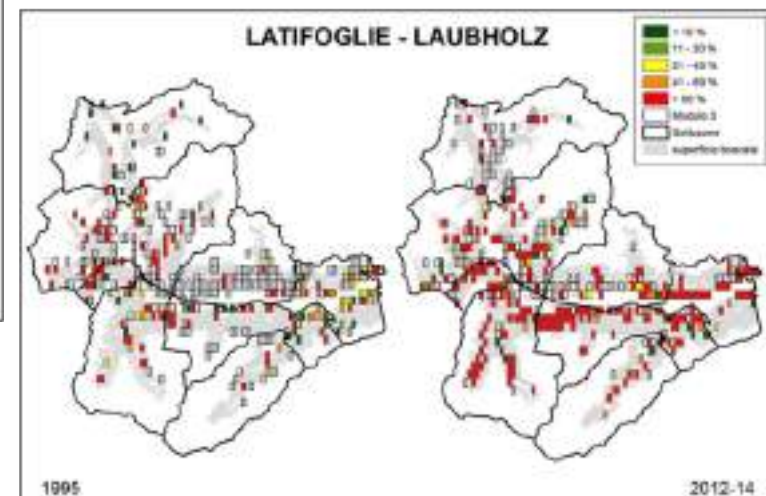
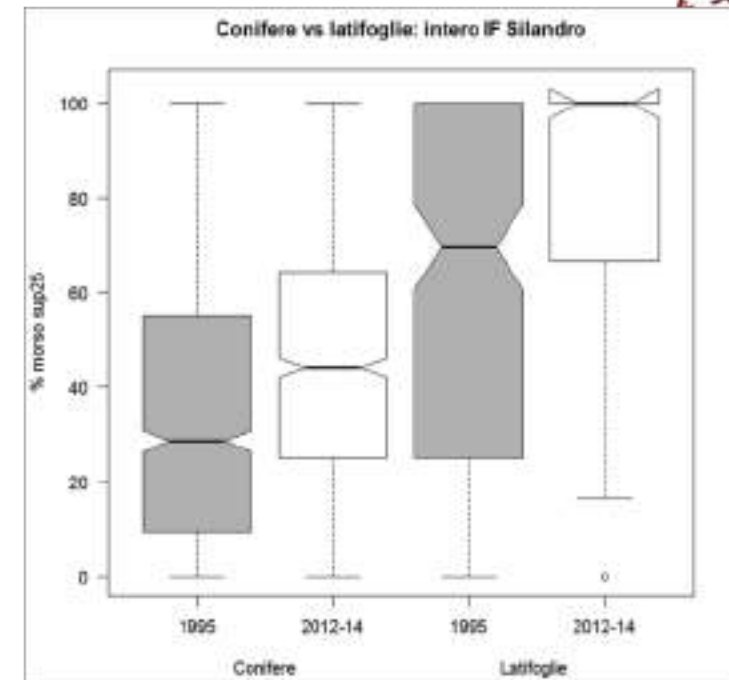
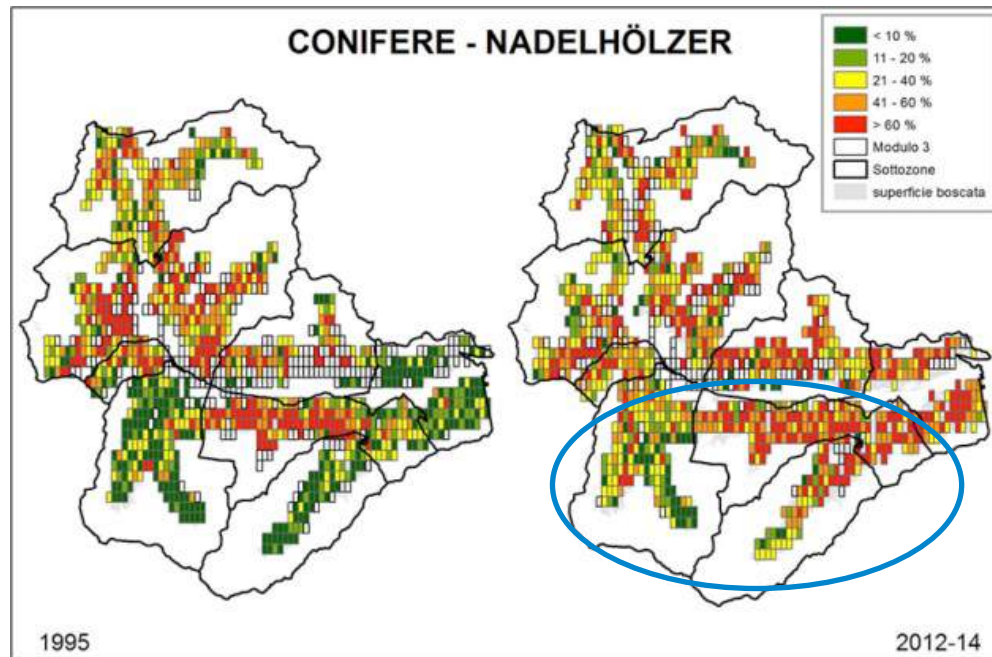


4309 shot red deer from 1998 to 2016



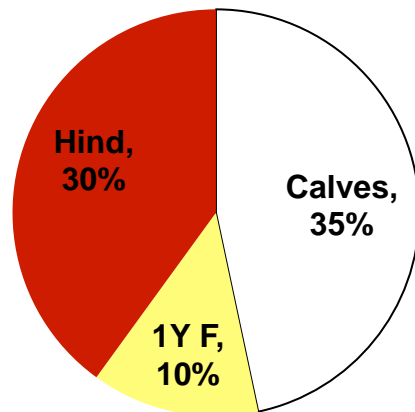
BUT damages on forest regeneration have not been reduced

Browsing amount increased from 1995 and 2012-14 monitoring stage

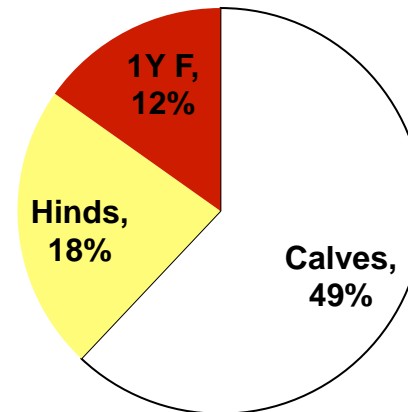




PLANNED



SHOT





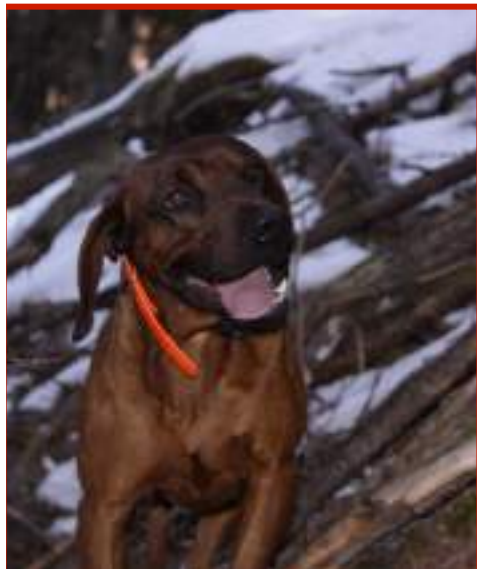
Enrico Bassi

**For the PARK
is important to face the
saturnism problem**

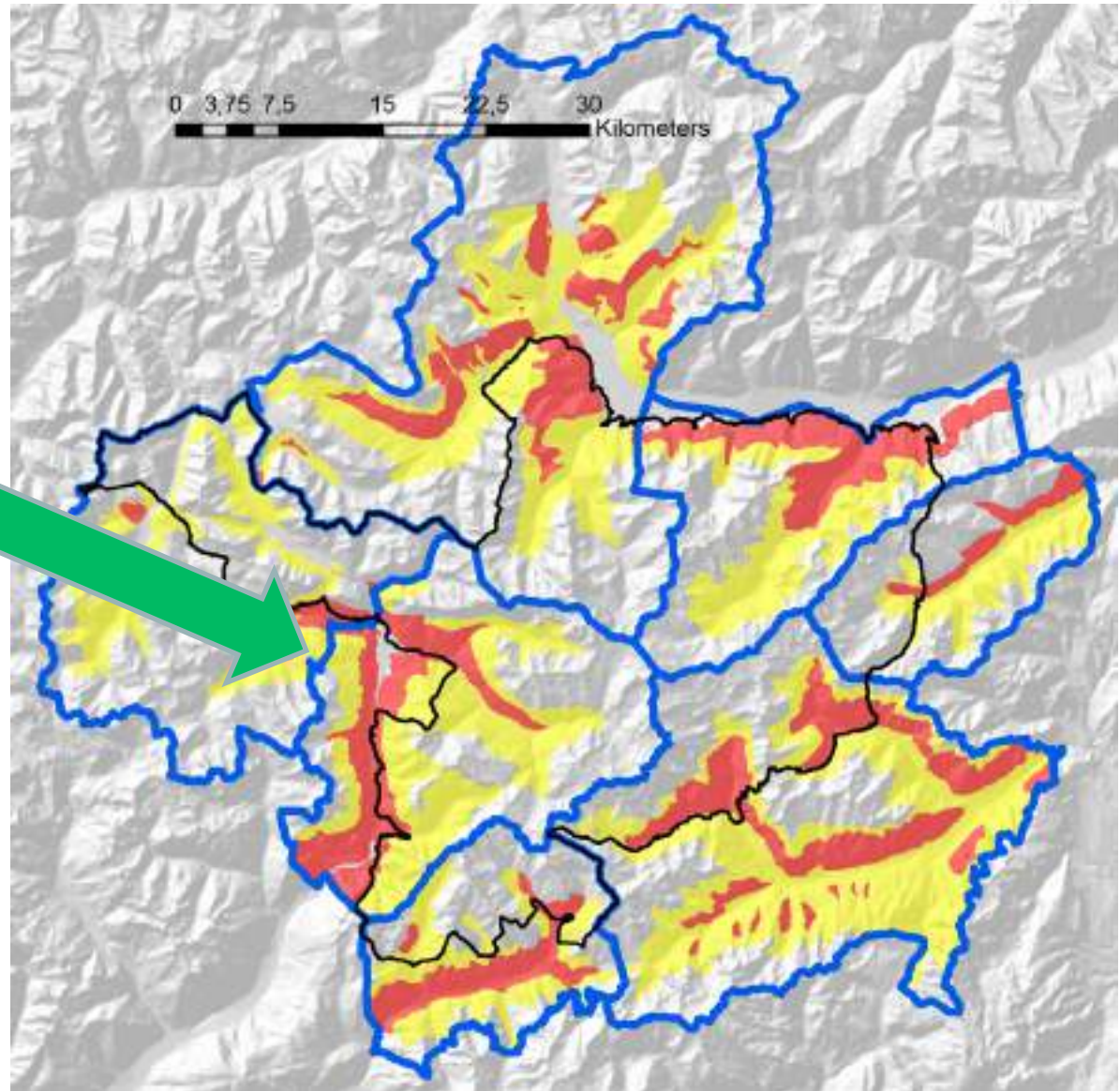
Do lead-free ammunitions increase wounded deer?



Ammunition	killed with 1 shot	killed with 2+ shots	% wounded
Lead	136	33	19.5%
Lead free	315	73	18.8%



SOME REMARKS ON LOMBARDY SECTOR



CULLING PLAN SCHEDULE

UG VALFURVA - SONDALO



Experimental plan – 1/2 years – 100 deer

Reduction plan – 3 years– 245 deer

Maintenance Plan – following years– 153 deer

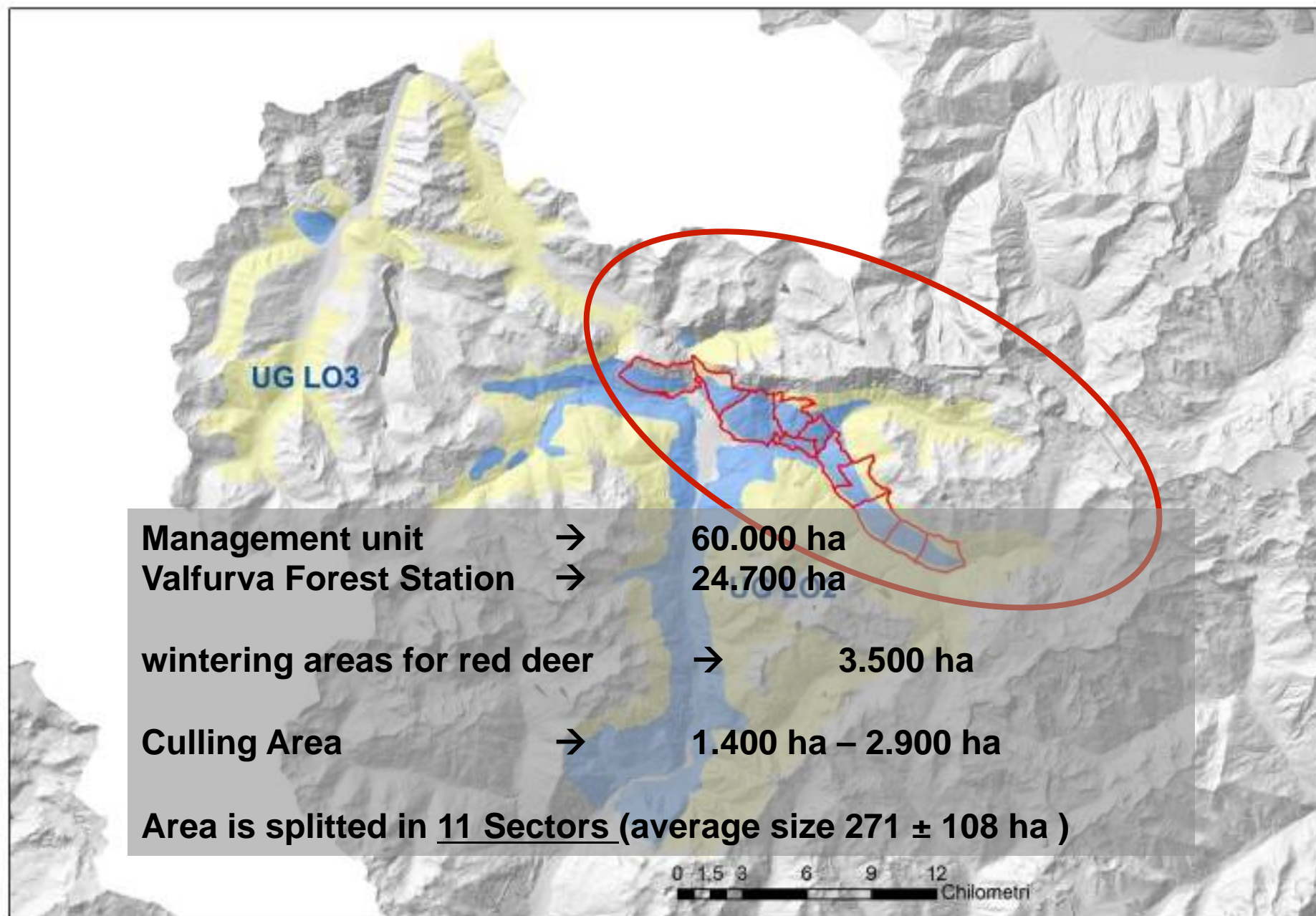
PRELIEVO SPERIMENTALE (PRIMI DUE ANNI)						
AREA	ABB TOT	MM1	MMA _d	FF1	FFA _d	PP
PARCO	100	10-12	8-10	8-10	40-42	30
PRELIEVO DI RIDUZIONE (TRE ANNI)						
AREA	ABB TOT	MM1	MM Ad	FF1	FFA _d	PP
PARCO	245	21	38	23	90	74

2 – 2,5 FEMALE / MALE



Culling Area

UG VALFURVA - SONDALO



TIMES AND METHODS OF INTERVENTION



Minimize culling period to limit disturbance and elusive behaviour

Trained local hunters^A involved (integrated management)

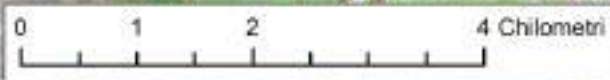
Guidelines and Regulation for culling programme implementation in the field and for monitoring shot deer and culling actions

No more than intermittent 4-5 weeks after rutting season (jan- feb in needed and possible)

Simple rules for sex and age classes harvest

Venison is sold by the Park to hunters or to market

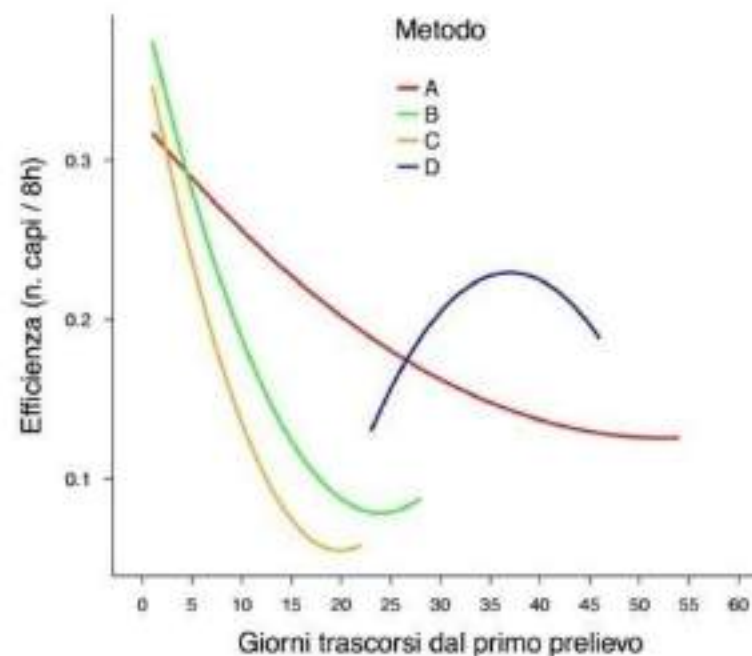
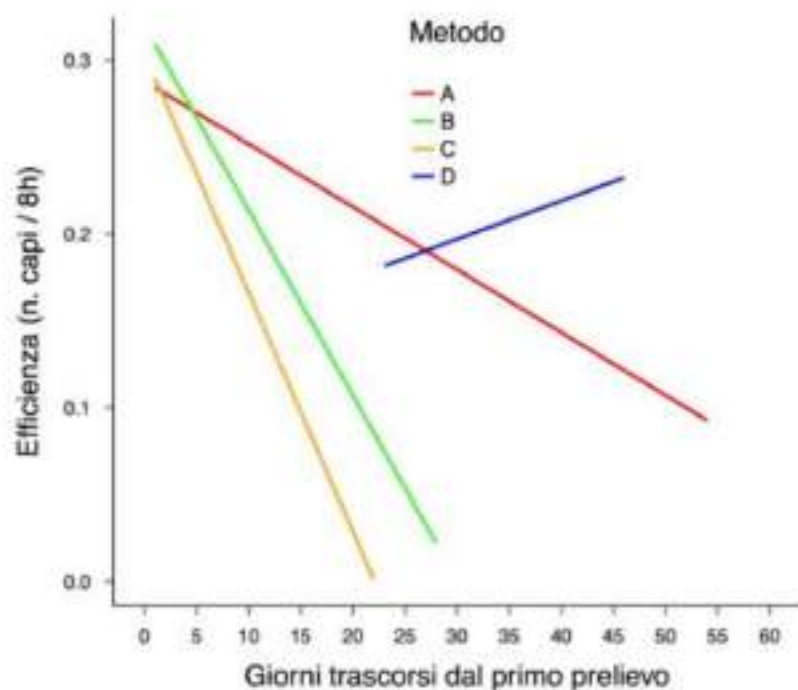
Compliance with EU Regulation for game meat hygiene (CE n. 852/2004 CE n. 853/2004, CE) n. 854/2004)



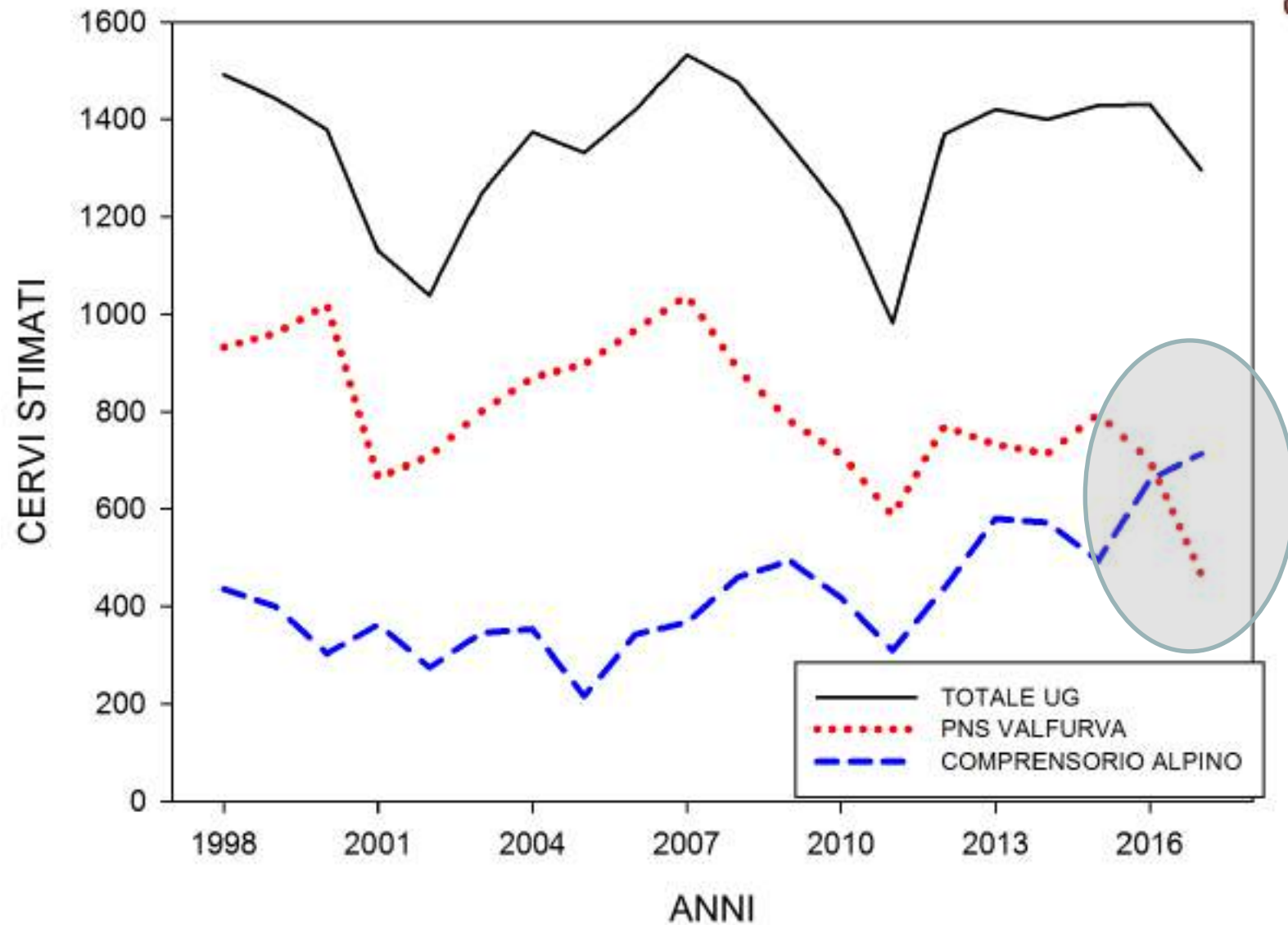
Different culling models (in space and time) to keep satisfactory performance (and reduce culling period)



MODELLO	ABBATTIMENTI	COADIUVANTI	ORE	ABB./8 ORE
A	201	1113	7857	0,20
B	72	493	3276	0,18
C	52	355	2296	0,18
D	208	1335	8061	0,21



WHAT'S THE RESULTS ON POPULATION???



CONCLUSIONS

- Side effects of red deer presence unequivocal
- The “concept” of culling vs hunting is still outside the local mainstream (but does it make sense?)
- After 20 years of culling in South Tyrol Park, the “real” goal is going hunting
- After 5 years of culling in Lombardia Park, the project is working, but still far from the routine actions
- The need (chance?) of red deer population control in the Park strongly increased collaborations and the knowledge of the whole “system”
- still need some time and experiences to test culling strategies to preserve self confident behavior during summer
- BUT ... the (ECO)SYSTEM is complex

CONCLUSIONS

A new part of the puzzle is settling

CULLING VS ECOLOGY OF FEAR

**THANKS FOR
YOUR ATTENTION!**



**GRAZIE PER
L'ATTENZIONE!**





