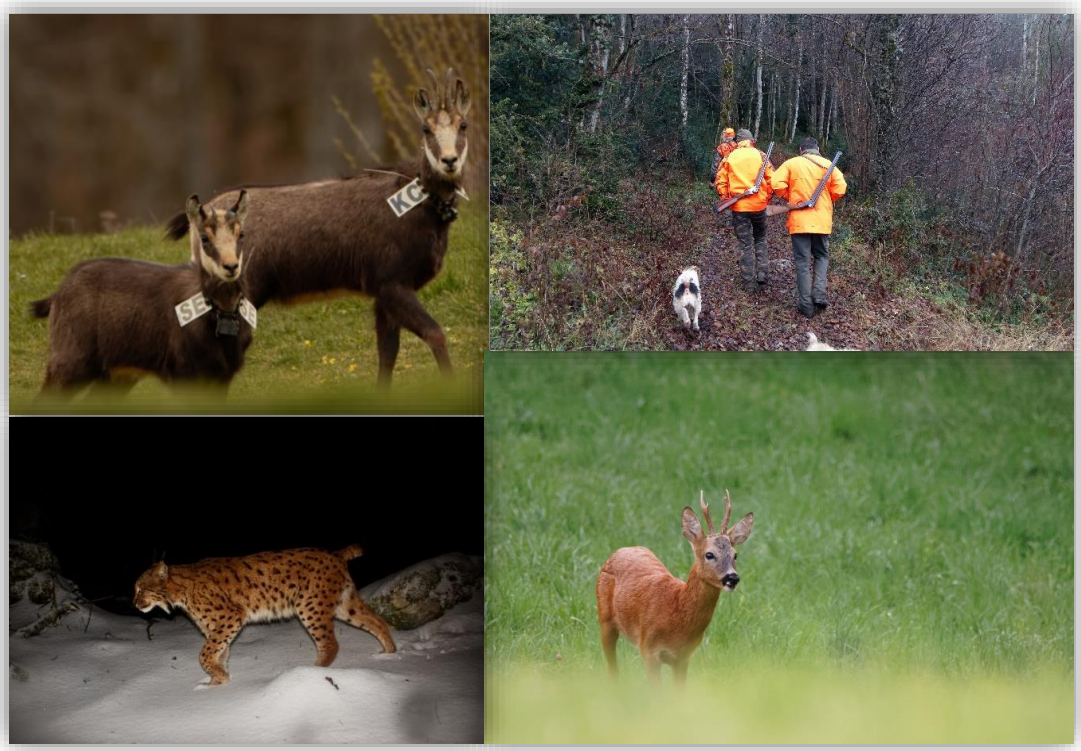
Roe deer and Chamois under lynx and hunting pressure



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FANJUL JB, DUCHAMP C., SAÏD S., DROUET-HOGUET N., LESCUREUX N., MONIN L., PELLERIN M., TOÏGO C.

EUROLYNX

08/10/2024
Neuwiller Lès Saverne

STUDY AIMS

Climate

Habitat

FUNCTIONING OF UNGULATES POPULATIONS

DEMOGRAPHY

HABITAT USE

Diseases Parasitism

Ungulates monitoring and management tools

STUDY AIMS

Climate

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FUNCTIONING OF UNGULATES POPULATIONS

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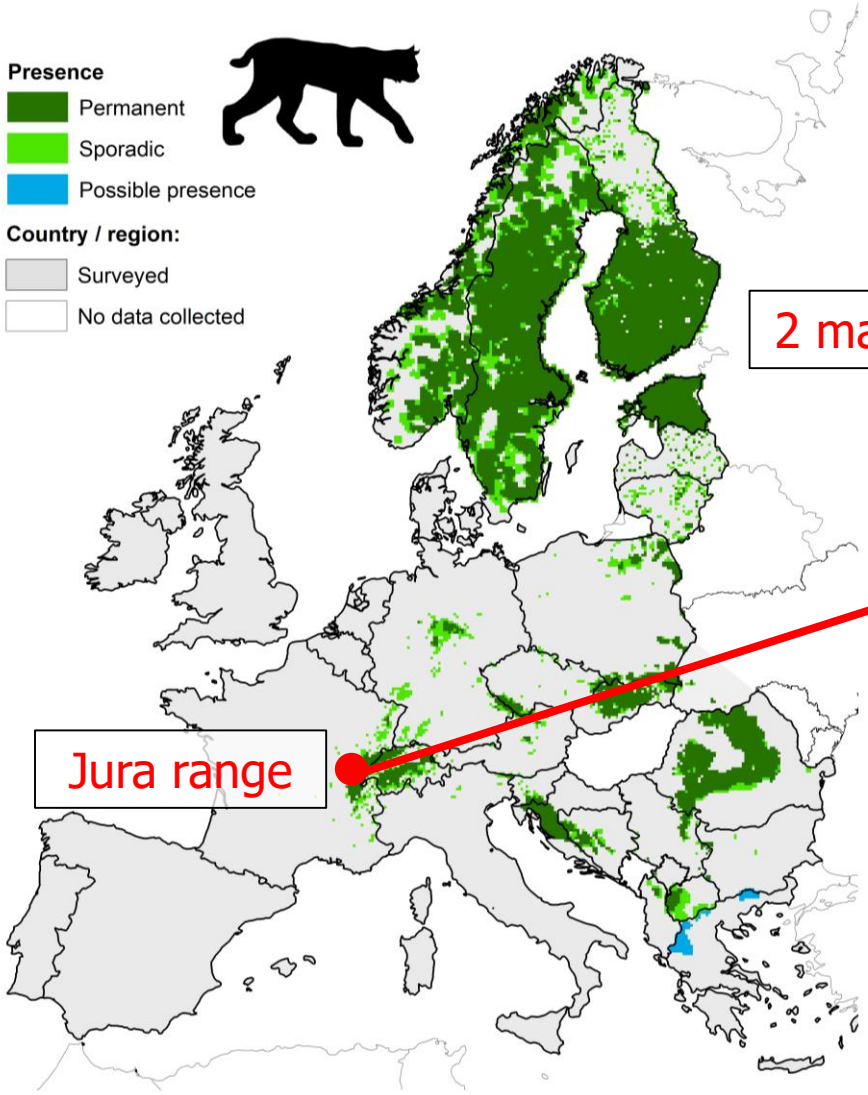
HABITAT USE

Diseases Parasitism

Ungulates monitoring and management tools

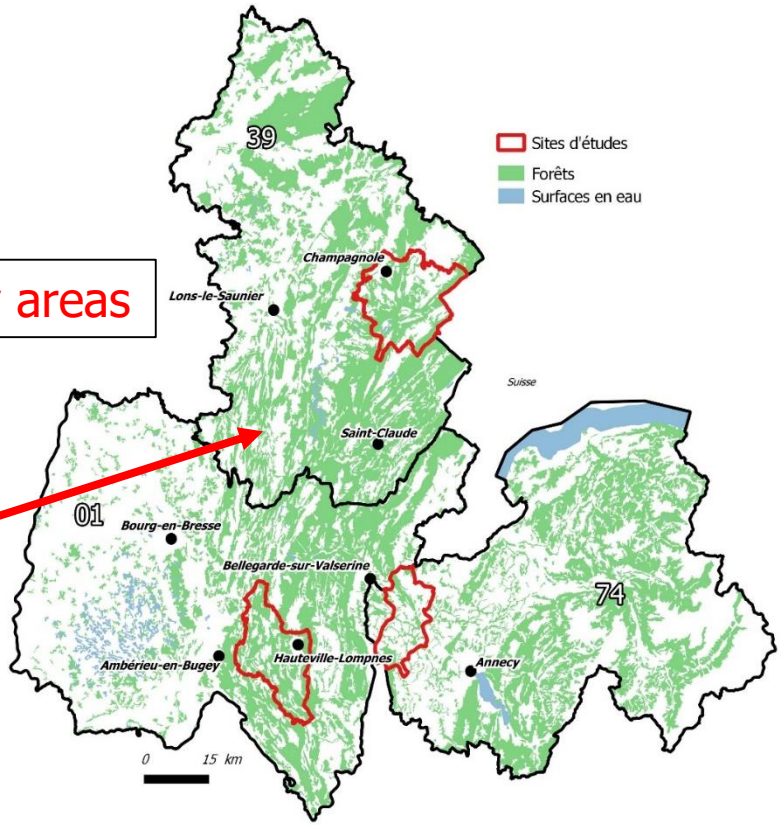
- **Ungulates study**
- **Hunting data**
- **Lynx data**
- **Environmental data**

A 7 YEARS STUDY : STUDY AREA & STACKEHOLDERS



Jura range

2 mains study areas



Field data collection:
Hunting federations

Data analysis:
French Biodiversity Office
National Center for Scientific Research

Kaczensky, Petra; Linnell, John D.C.; Huber, Djuro et al. (2021).

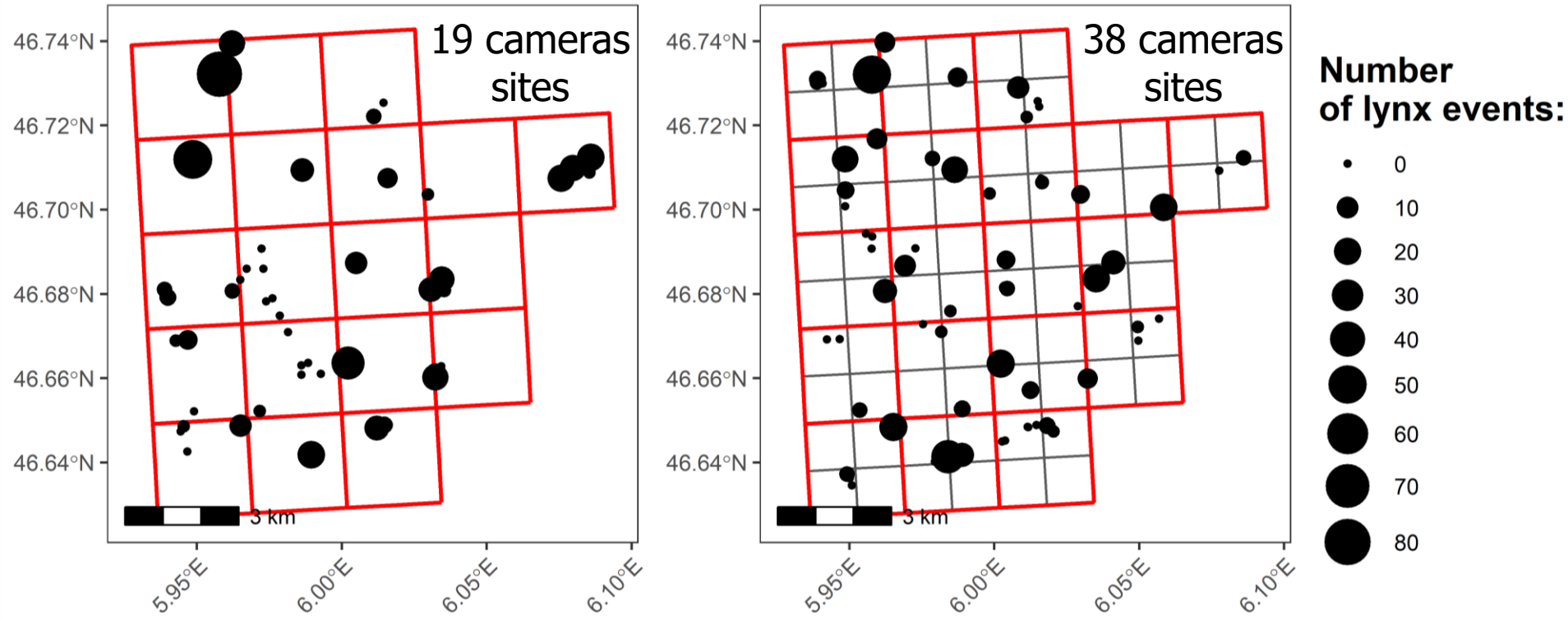
METHODS - LYNX CAMERA TRAP MONITORING

Method:

- Camera trapping
- 2 spatial grid resolution tested to recover with scale effects while looking for demographic and spatial responses of preys regarding lynx habitat use intensity

A: From 2016 to 2022 – 2.5 KM grid
Seasonal monitoring

B: From 2020 to now – 1.25 KM grid
Annual monitoring

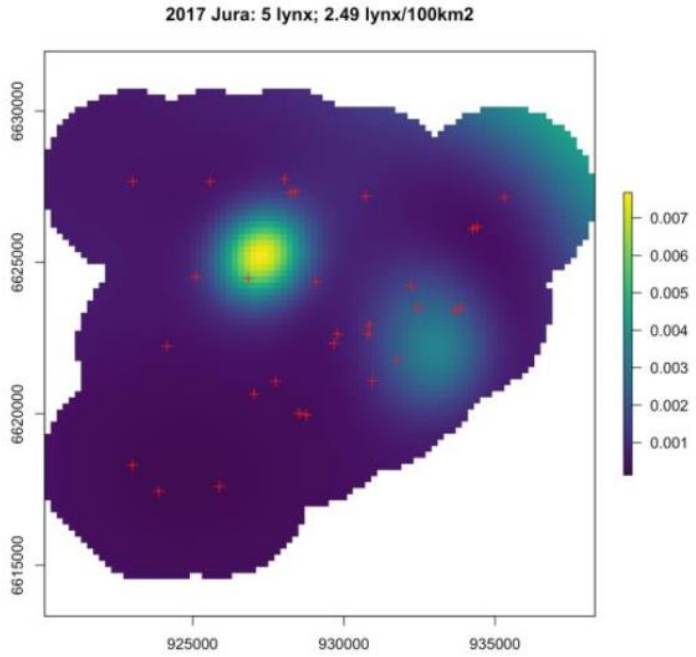


LYNX density estimates

SECR density (N/100km²)

	Jura site	Ain site
Mating season (jan.– mar.)	3.36	2.06
Autumn (sept-dec)	2.49	1.81

Area size ~130 km²



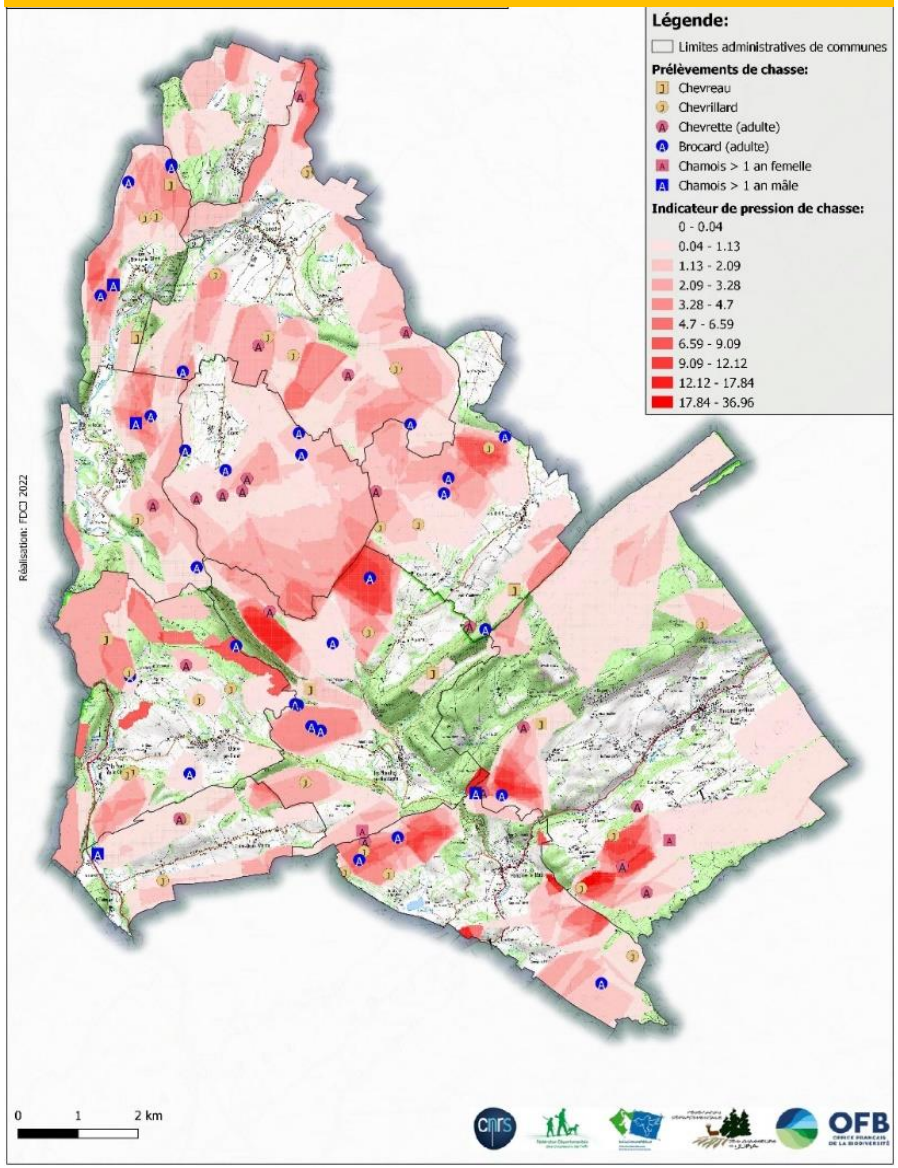
2016-2018 data

What prospectives :

- Annual / seasonal spatial variance of density ?
- lynx occupancy model which highlights heterogeneity across ungulate study areas

MAPPING ANNUAL HUNTING PRESSURE

Example: hunting pressure map – Season 2021



Data collected (2017- now) :

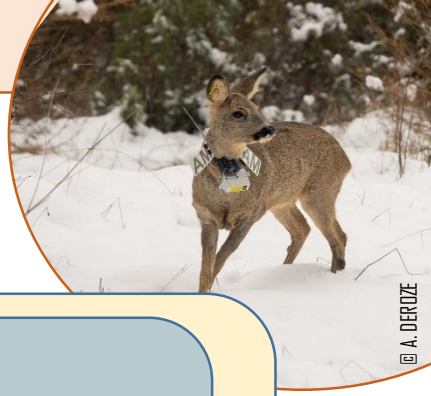
- For each hunting season/session:

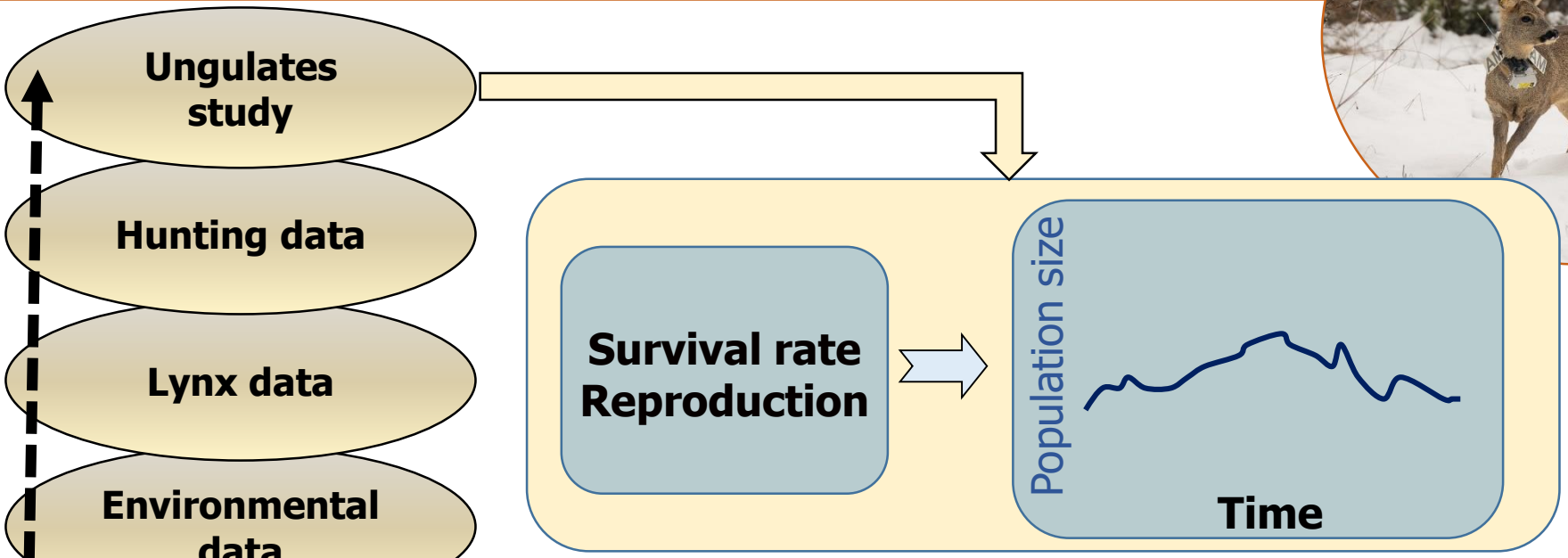
- Location
- Duration
- Number of hunters
- Number of dogs

- For each Roe deer / chamois killed:

- Location
- Age / sex
- Biometry measures (horn/antler size, hind foot length, body mass)

ROE DEER AND CHAMOIS POPULATIONS MONITORING





Capture, Mark, Recapture:

- VHF + visual collar: survival and reproductive success
- GPS (**adults only**): habitat use, activity patterns and timing of birth

Collection of biological materials and measures:

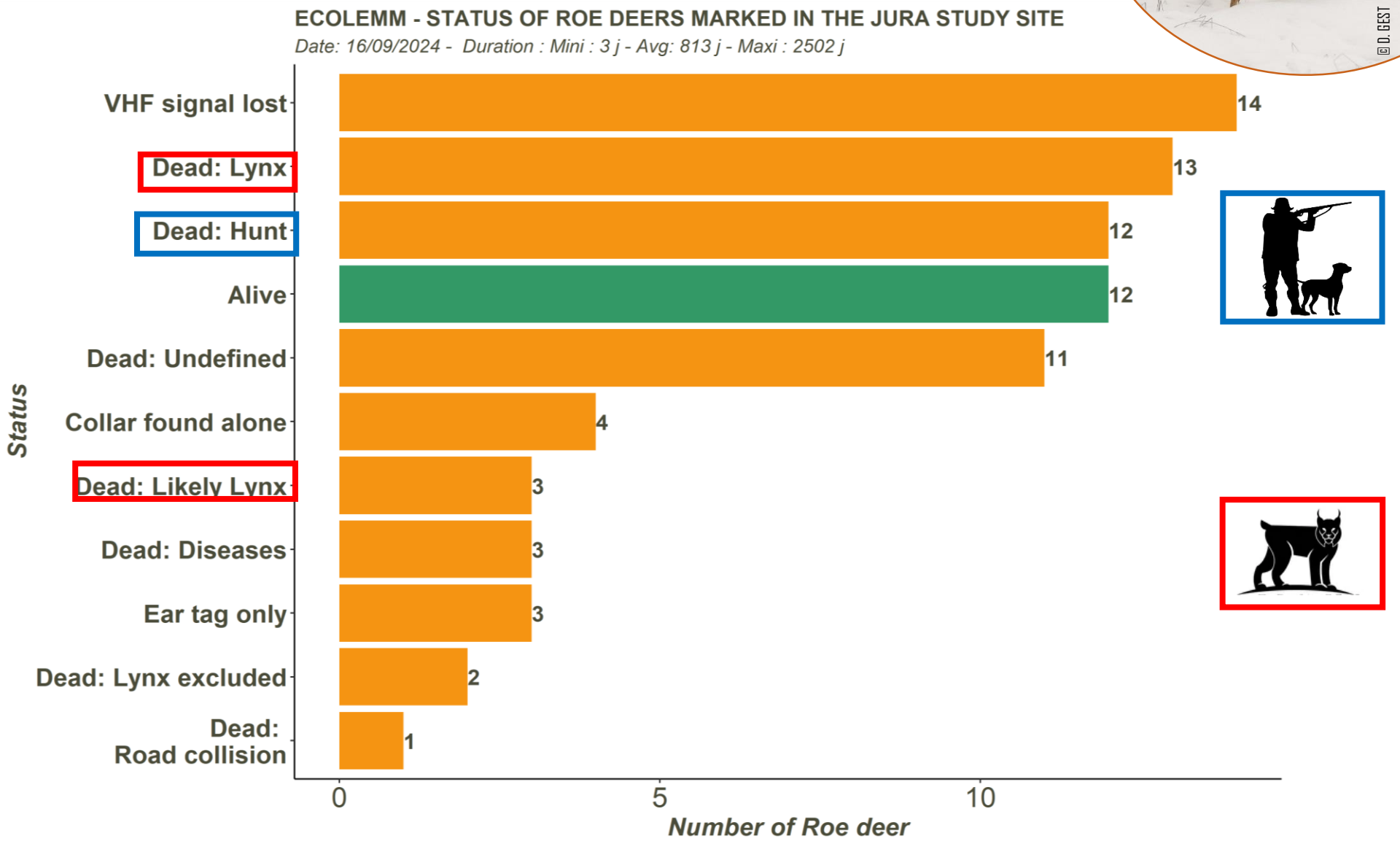
- Fecundity, diseases, parasitism
- Phenotypic condition (body mass, horn/antler size, hind foot length)

Abundance estimates (taking care of detection probability):

- Distance sampling
- CMR estimates

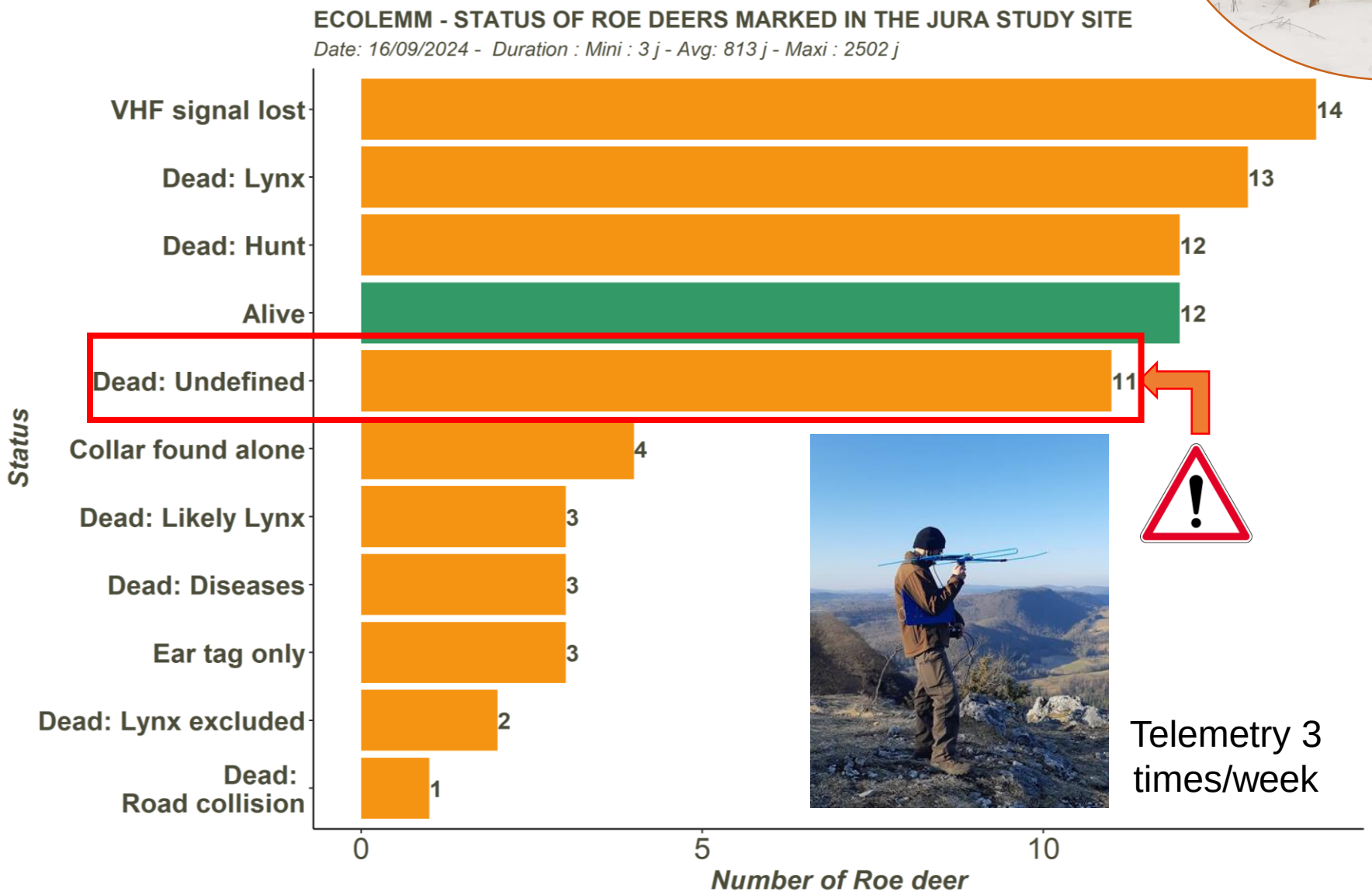
COMPARING APPARENT MORTALITY

N=78 roe deer marked since 2017 in the Jura site



COMPARING APPARENT MORTALITY

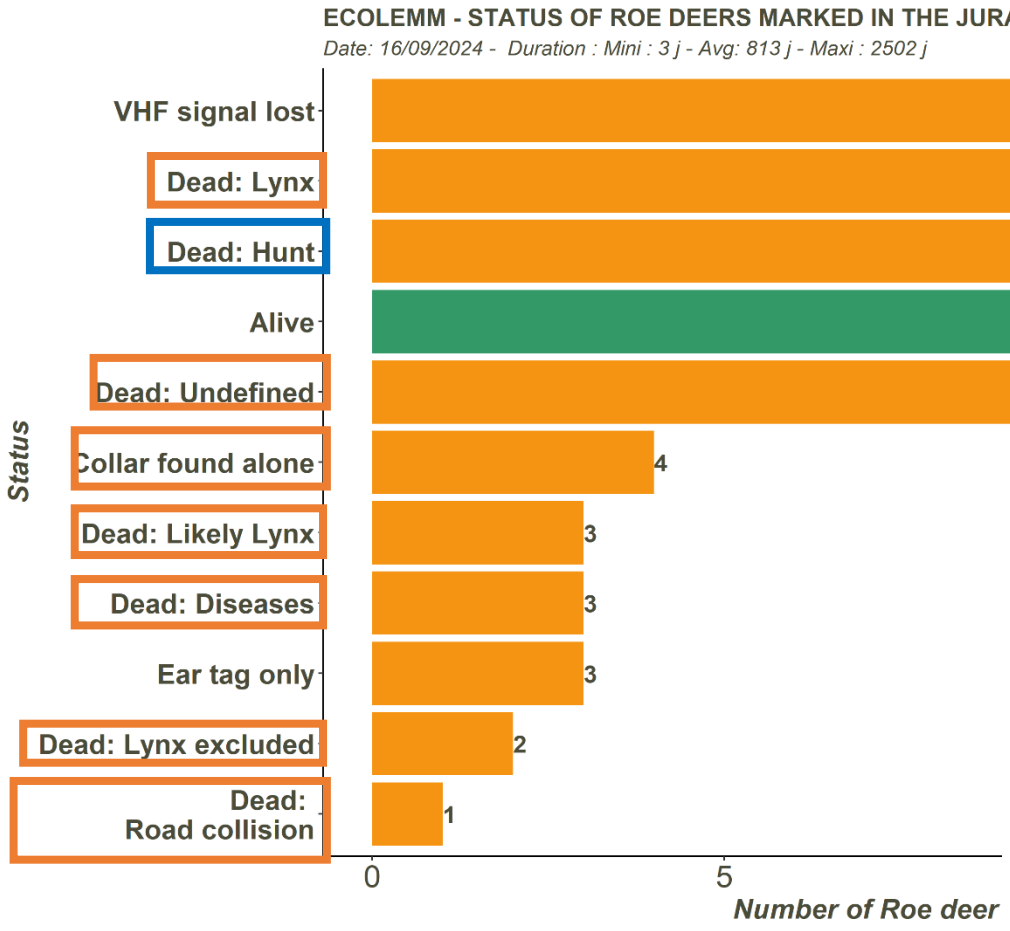
N=78 roe deer marked since 2017 in the Jura site



Telemetry 3 times/week

COMPARING APPARENT MORTALITY

N=78 roe deer marked since 2017 in the Jura site



Other mortality causes

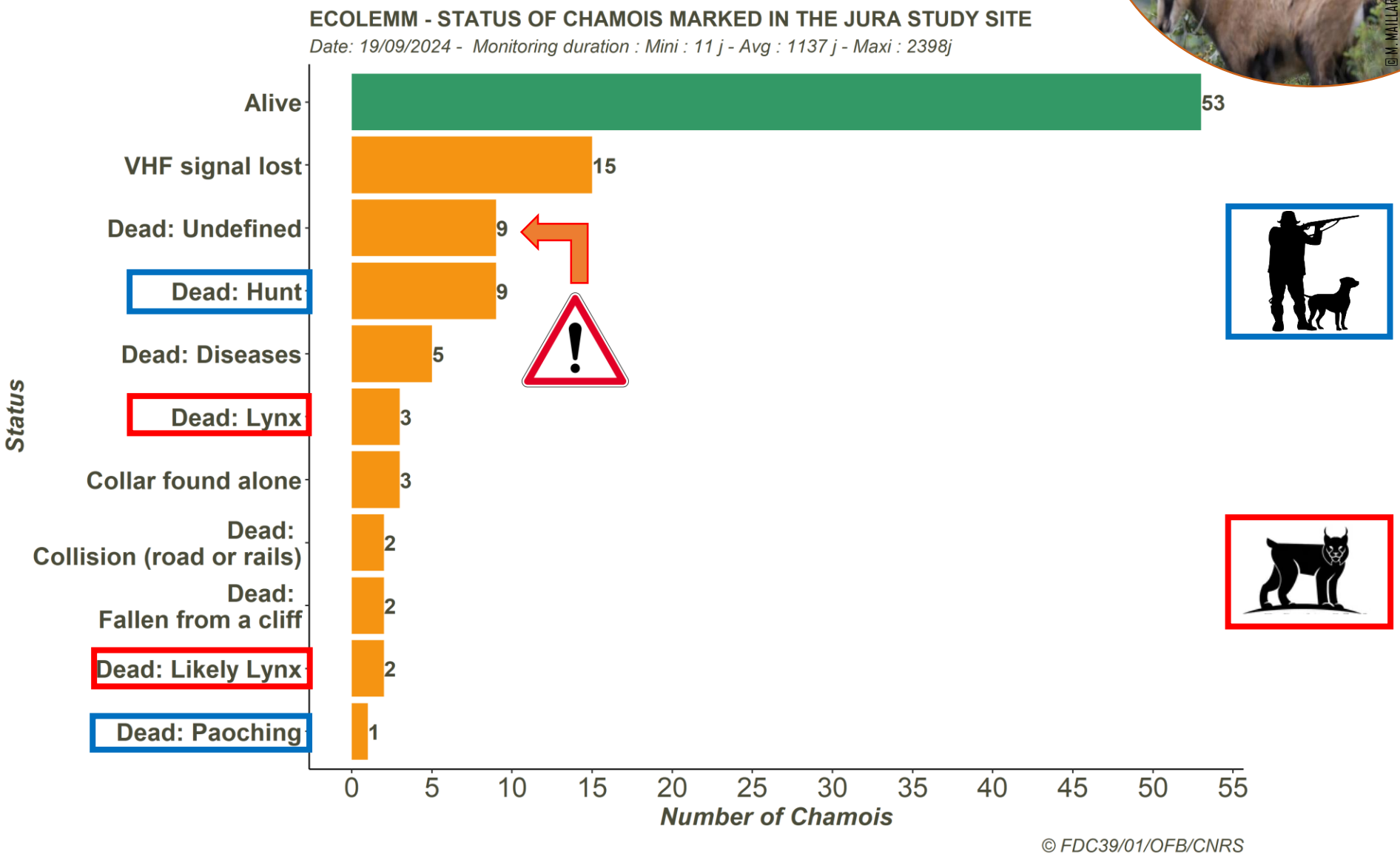
0.12 [0.07- 0.20]

0.25 [0.17-0.34]

Annual survival rate:
0.63
[0.53 – 0.71]

COMPARING APPARENT MORTALITY

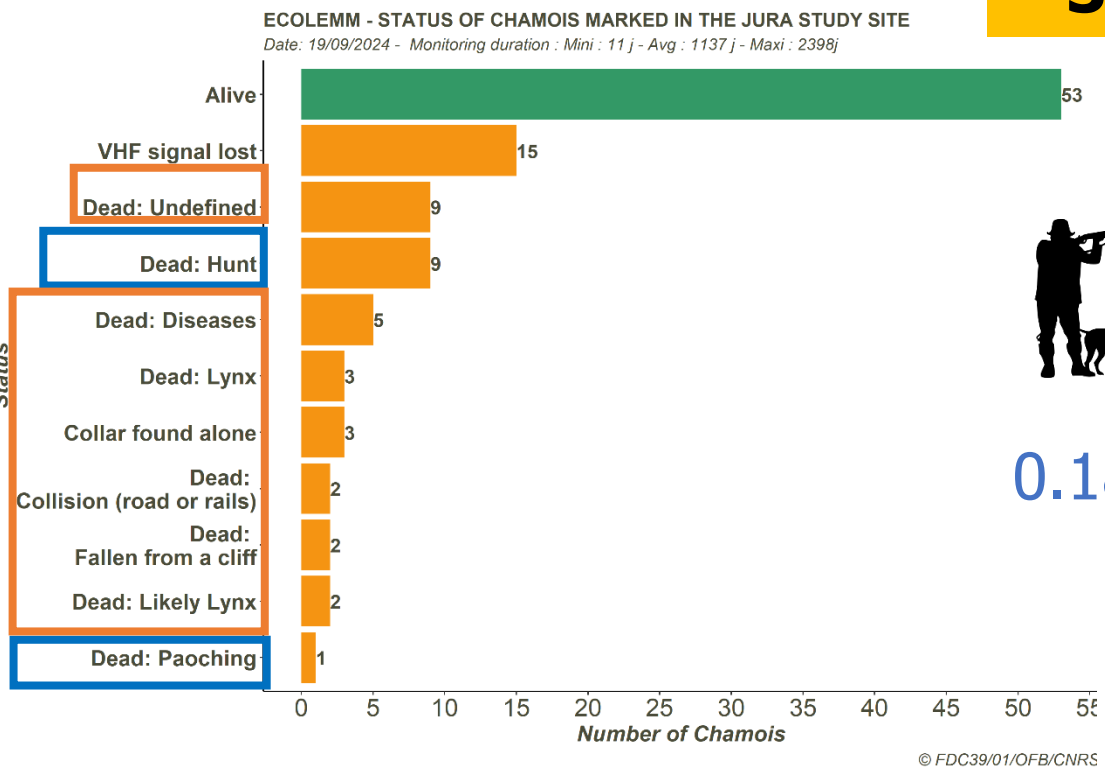
N=104 chamois marked since 2017 in the Jura site



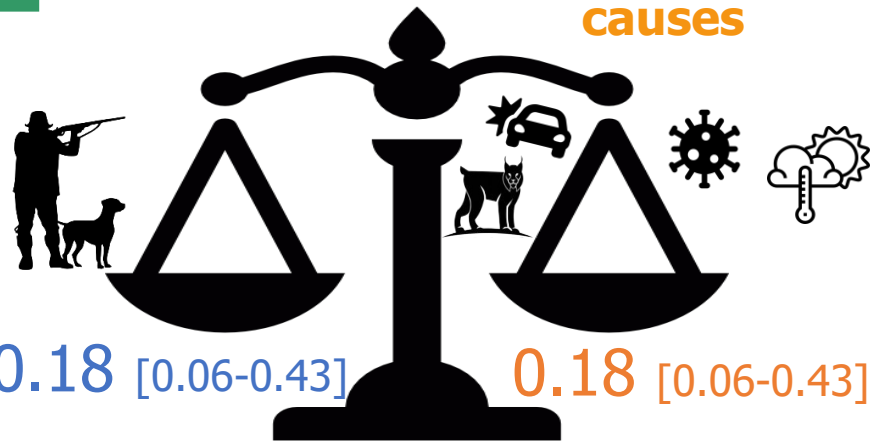
COMPARING APPARENT MORTALITY

N=78 roe deer marked since 2017 in the Jura site

Juveniles: 3 m.-1 year



Other mortality causes



0.18 [0.06-0.43] 0.18 [0.06-0.43]

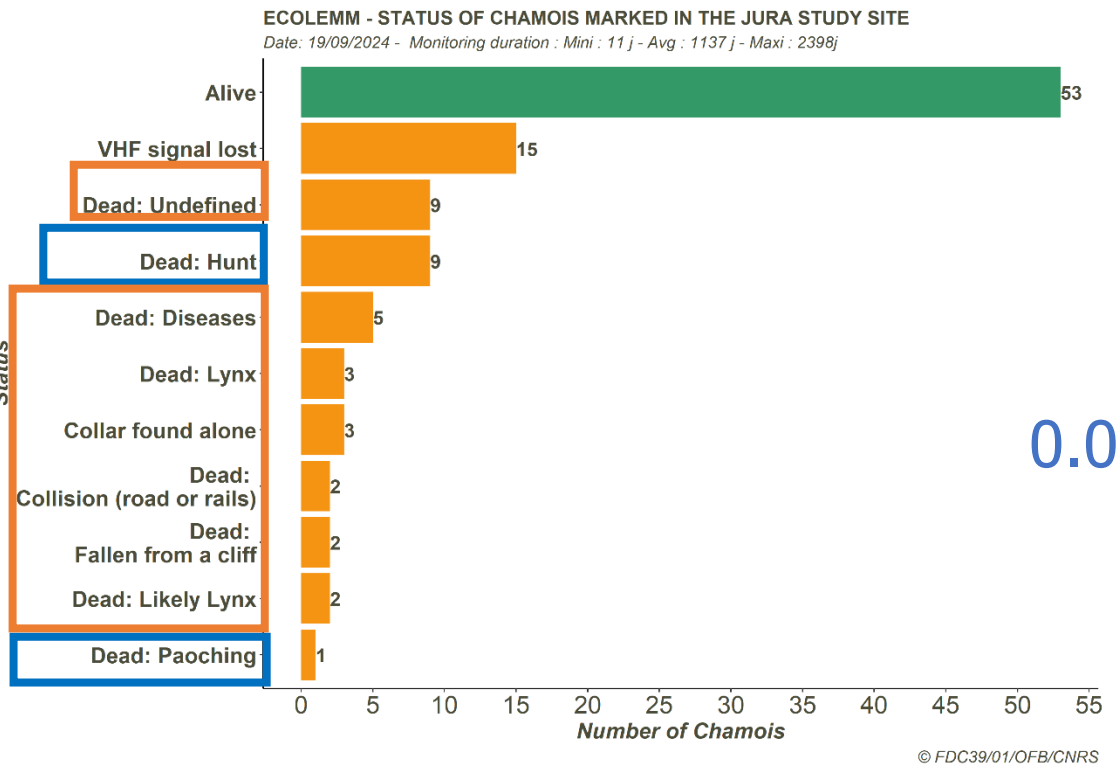
Annual survival rate:

0.65

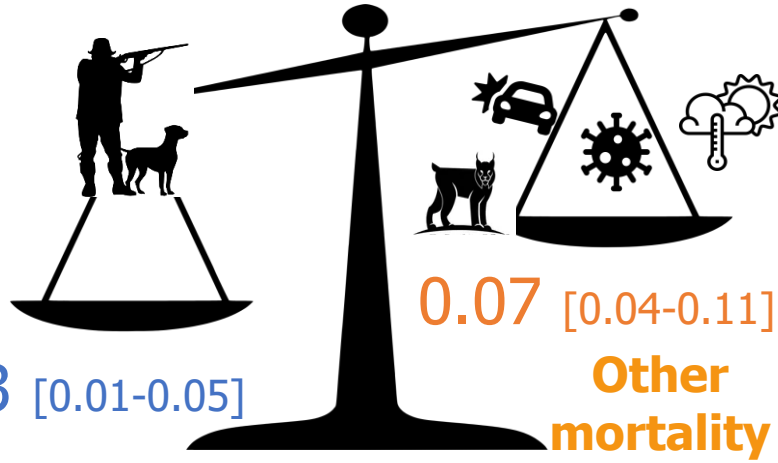
[0.40 – 0.83]

COMPARING APPARENT MORTALITY

N=78 roe deer marked since 2017 in the Jura site



> 1 year



0.03 [0.01-0.05]

0.07 [0.04-0.11]

Other mortality causes

Annual survival rate:

0.91

[0.79 – 0.96]

COMPARING APPARENT MORTALITY - CONCLUSIONS

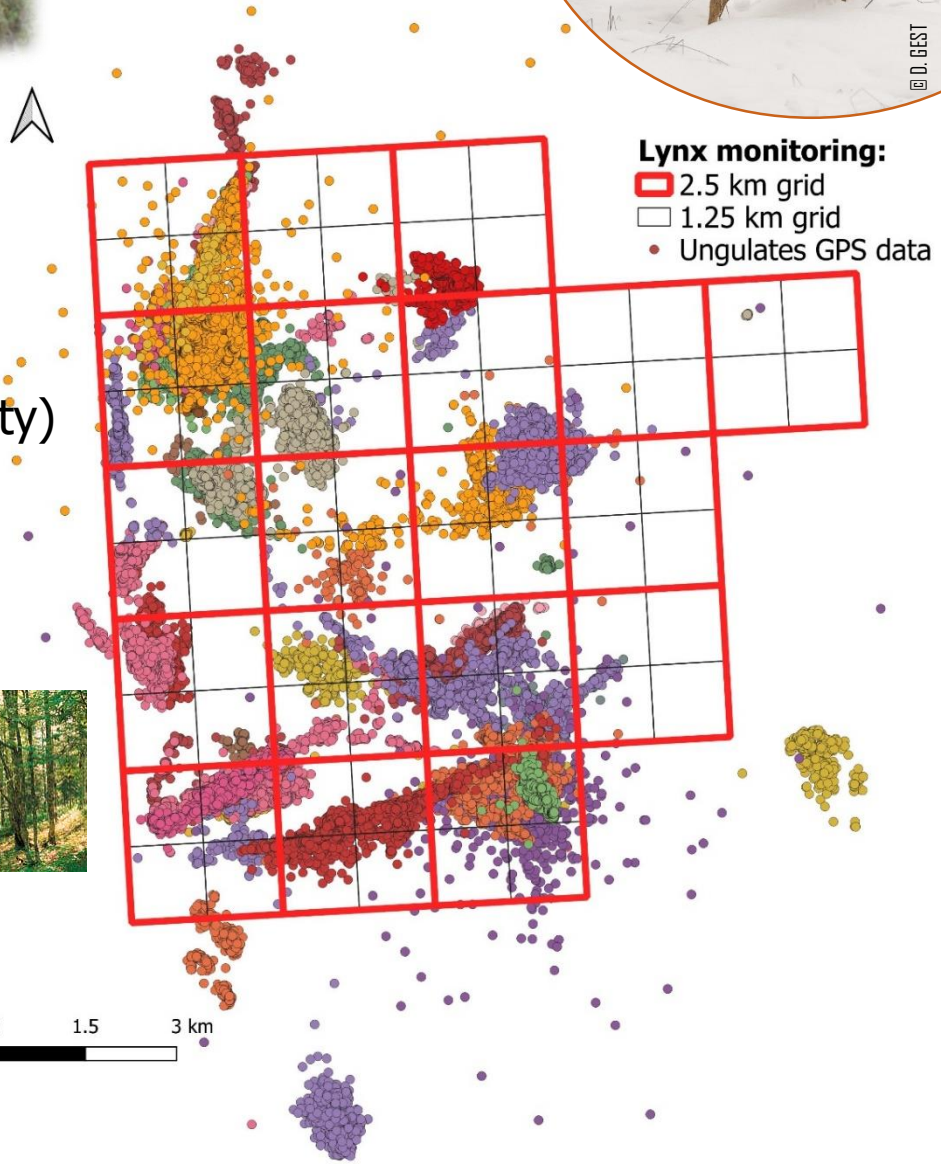
- Low adult survival (similar to other results in eastern europe in populations hunted and under lynx predation)
- Both hunting and other causes of mortality are high
- Further investigation needed to highlight the possible impact of lynx predation

- Adult survival rate high (similar to other sites without predators)
- Negligeable lynx effect on adult survival rate ?
- Juvenile survival still to investigate

INVESTIGATING SPATIAL DATA OF UNGULATES

Available data:

- 65 GPS + activity data (Roe deer + Chamois)
- > 2000 measures of ungulates browsing pressure on forest
- > 200 hair samples (Herrada et al., 2024)
- > 200 feacal samples (cortisol + diet quality)



Expectations

- Home range sizes and composition
- Trophic cascades
- Stress, physiological data
- Dispersal

Upcoming:

- Data analyses
- Social Science PhD (Louise MONIN) restitution : human – lynx – ungulates interactions in the Jura range

More information :

www.ecolemm.fr
jean-baptiste.fanjul@chasseurdefrance.com

An opportunity to involve hunters and to share knowledge about Lynx with them

Financial supports:

Financé par