Predation on cattle: between the wolf's responsibility and the absence of damage reports

Morgane Virapin, PhD student, INRAE-VetAgro Sup, Clermont-Ferrand

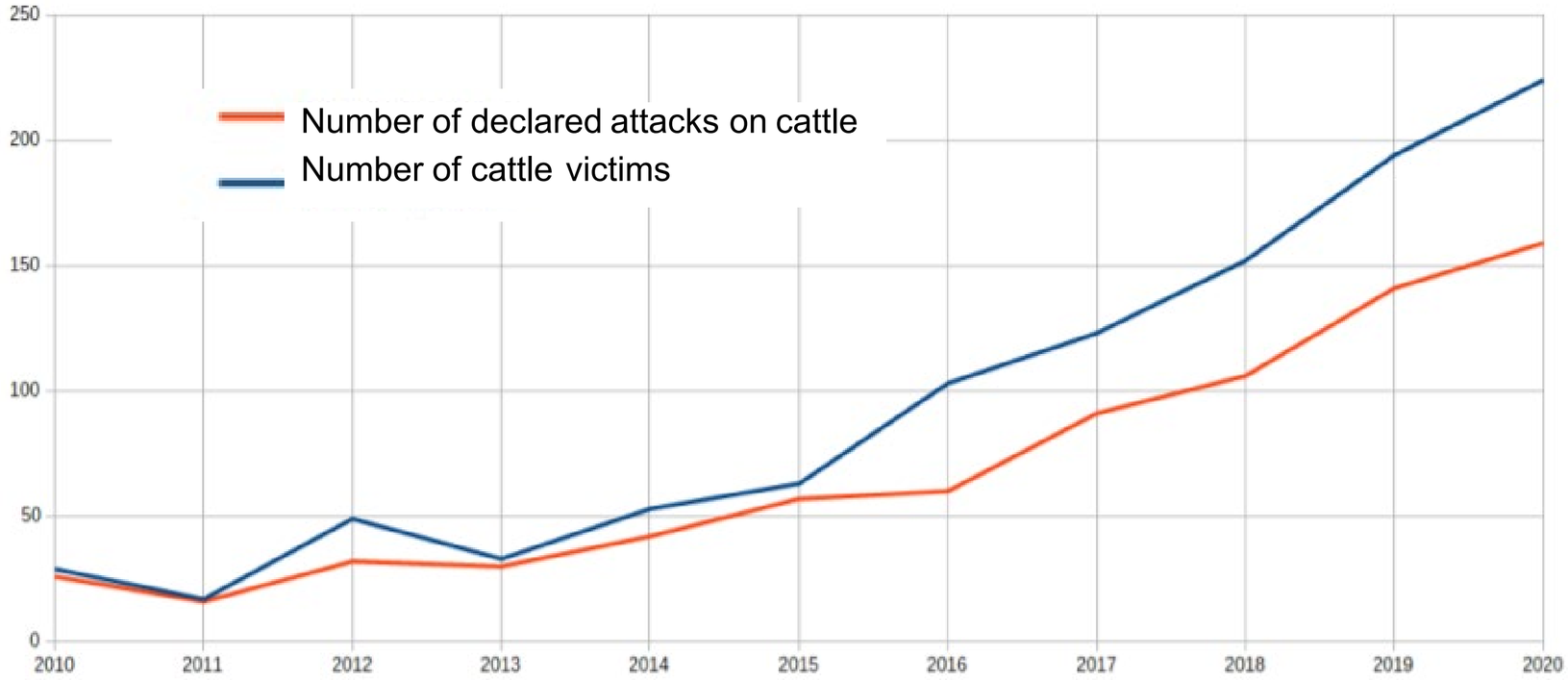
Soria Jabouille, Savoie Departmental Directorate of Territories,
Gilles Brunschwig, UMR Herbivores, INRAE-VetAgro Sup, Clermont-Ferrand,
Enrico Sturaro, DAFNAE, Università di Padova, Italy

The 75th EAAP Annual Meeting
1/5 September 2024
Florence, Italy

1/ Context and objectives

1.1/ A recent increase in damage to cattle

In France, the number of damage reports to cattle **has increased steadily** over the years. And so, in 2022,**372 damages were reported (74% of which received compensation).**



Evolution of reported attacks and bovine victims linked to wolf predation, national scale, 2010-2020

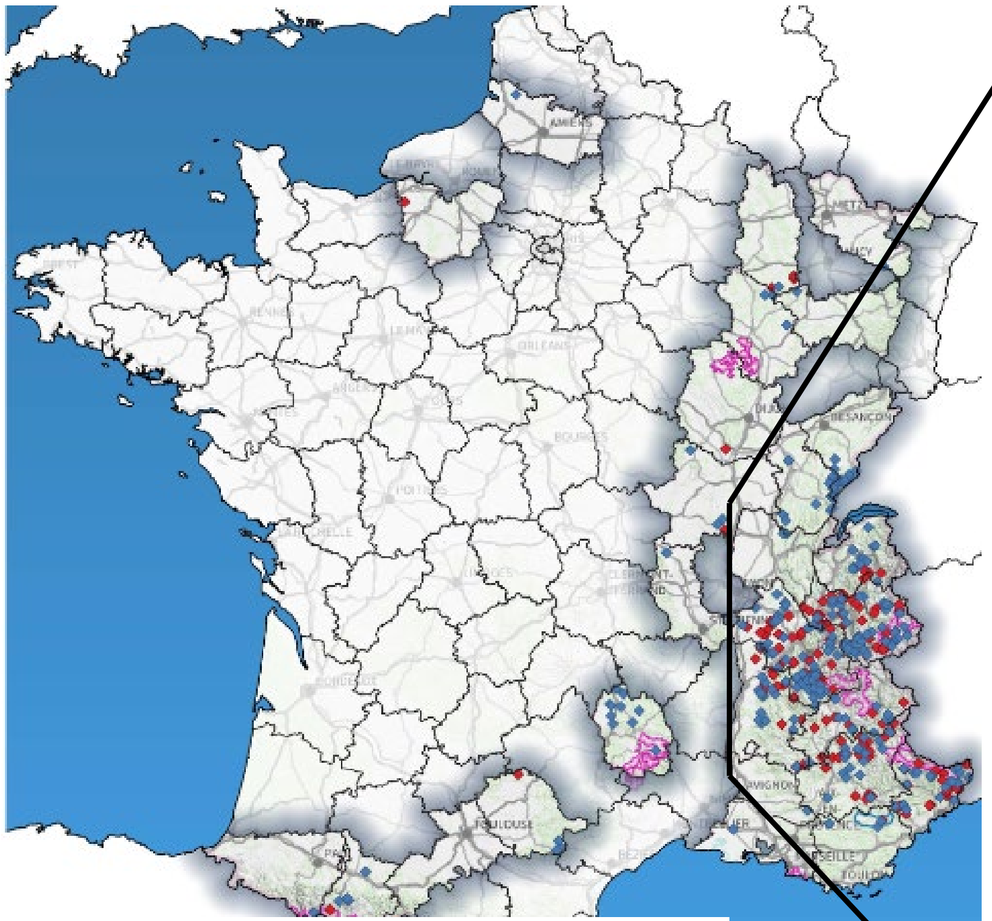
Source: Data Dreal Aura-DDT(M)

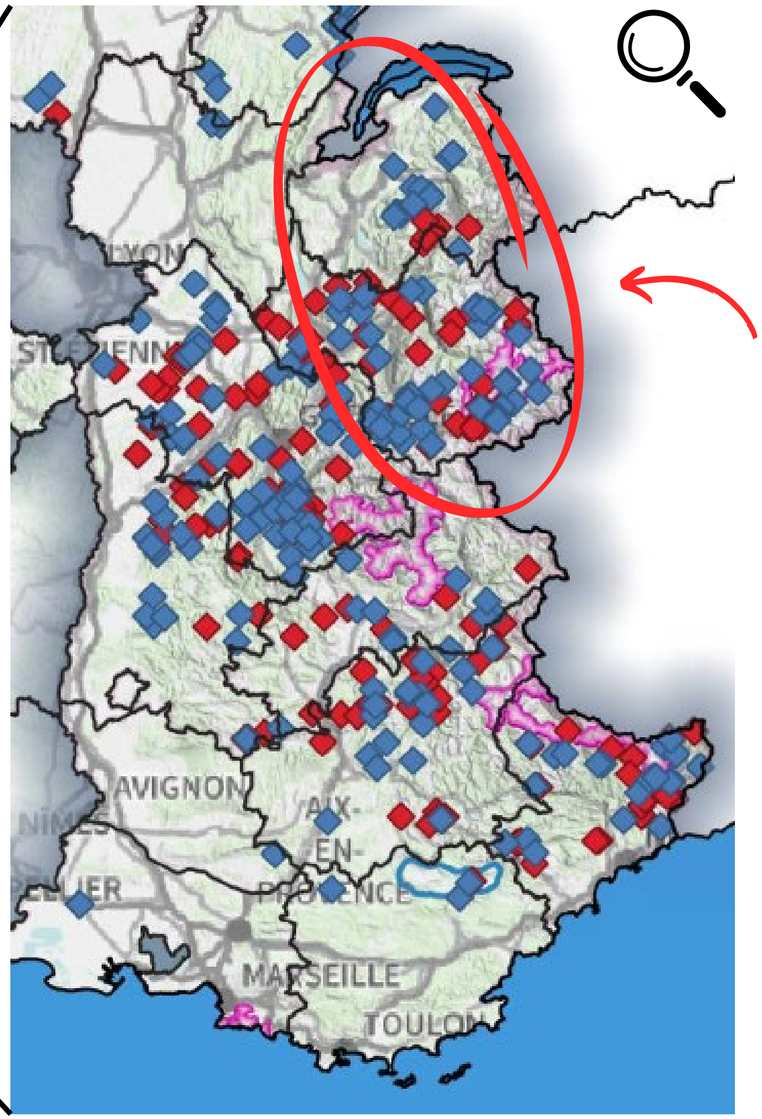
1/ Context and objectives

1.1/ A recent increase in damage to cattle

Compensated attacks on cattle in France in 2019 and 2020, Source: regulatory data Dreal Aura -DDT(M)

Predation on cattle now affect **24 departements in 2022** (+11 compared with 2021)





- Localization of damage reports on cattle in 2022
- Localization of damage reports on cattle in 2021
- Protected natural areas

Savoie and Haute-Savoie : **high value -added production areas**

2/ Materials and methods

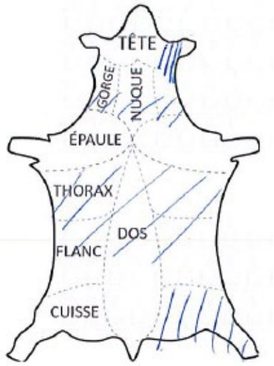
2.1/ Setting up the database

The database was compiled from **all reported damage on cattle in Savoie and Haute -Savoie**, over the period **2015 -2020.**

The **Geoloup** software (national database) enabled us to retrieve all the damage reports.

Examples of data recorded :

-Type of victim
-Presence and localization of consumption
-Mode of consumption
-Presence of perforations, number and depth of perforations
-Cause of death
-Conclusion of the technical expertise: responsibility of the wolf excluded or not excluded...



Extract from a damage report

Parties consommées

		1 2 3 4 5 6 7 8 9 10
19	Aucune partie consommée	
20	Consommation totale des chairs	
21	Cou ou nuque	
22	Membre(s) antérieur(s) (un seul)	X
23	Membre(s) postérieur(s)	X
24	Viscères rouges (cœur, poumons, foie, rate)	X
25	Viscères blancs (panse, intestins)	X
26	Pis	
27	Chairs du poitrail	X
28	Dos	X
29	Flanc	X
30	Tissus mous en périphérie des orifices naturels (yeux, lèvres, museau, oreilles, vulve...)	X

Mode de consommation

		1 2 3 4 5 6 7 8 9 10
31	Proie recouverte par grattage (herbe, humus, feuillage, neige...)	
32	Os longs des membres brisés nets	
33	Cage thoracique ouverte **ET** sternum absent	X
34	Os des membres décharnés **ET** en connexion anatomique	X
35	Ouverture de la cavité abdominale **ET** panse intacte, OU contenu de la panse à proximité de la carcasse	

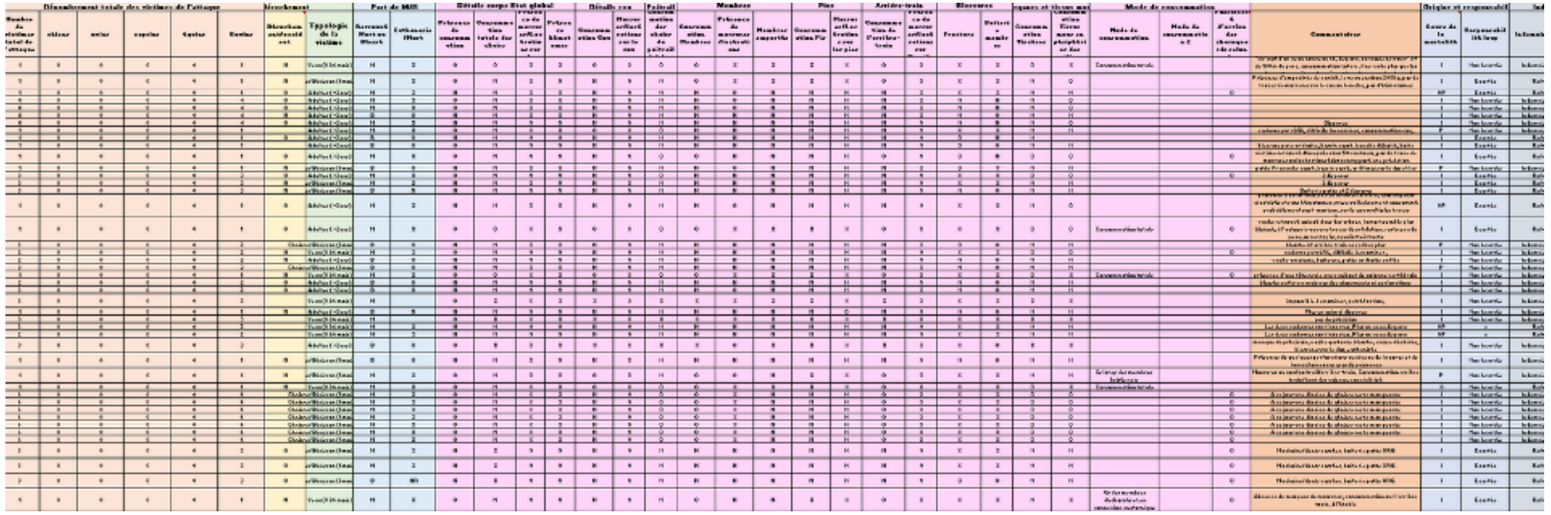
2/ Materials and methods

2.1/ Setting up the database

147 damage reports

264 cattle victims

109 farmers concerned



Extract from the database

264 rows (1 row per victim) x

30 columns (indicators of interest linked to the report)

2/ Materials and methods

2.2/ Dynamic cross -table

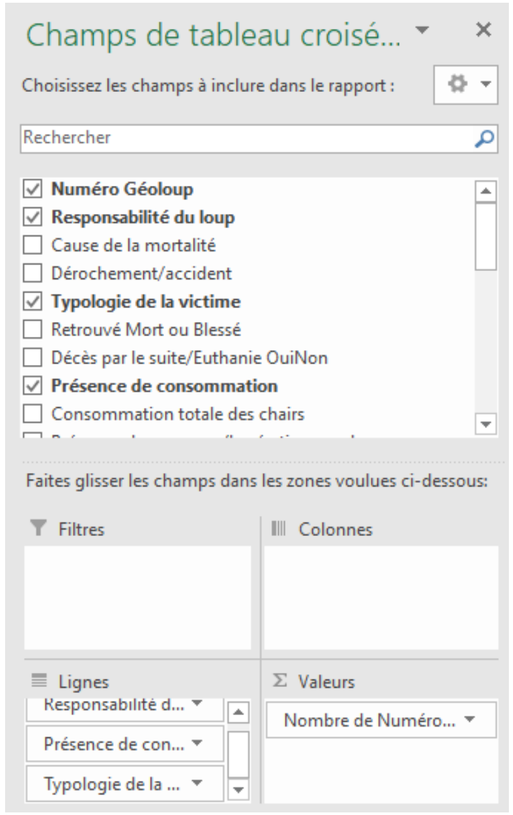
With pivot tables, we were able **to group data according to one or more of the fields** , and **to perform data cross-referencing operations.**

Dynamic cross table

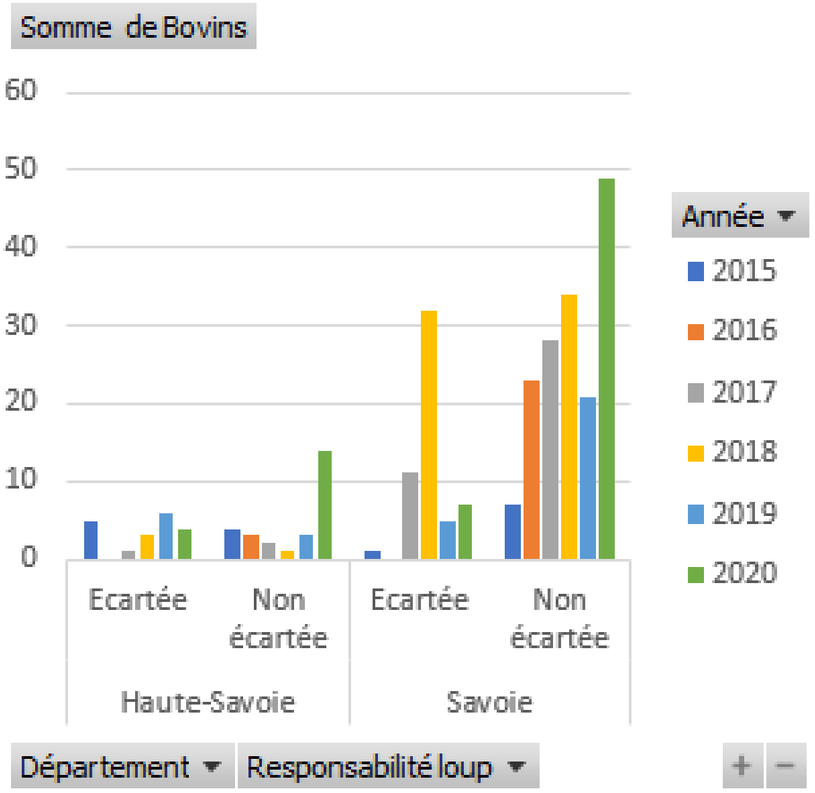
Étiquettes de lignes	Nombre de Numéro Géoloup
Ecartée	**74**
N	**30**
Adultes (+2ans)	18
Génisse/Génisson (6mois-2ans)	9
Veau (0 à 6 mois)	3
O	**41**
Adultes (+2ans)	8
Génisse/Génisson (6mois-2ans)	7
Veau (0 à 6 mois)	26
X	**1**
(vide)	**2**
Non écartée	**190**
N	**107**
Adultes (+2ans)	63
Génisse/Génisson (6mois-2ans)	36
Veau (0 à 6 mois)	8
O	**81**
Adultes (+2ans)	16
Génisse/Génisson (6mois-2ans)	19
Veau (0 à 6 mois)	46
X	**2**
(vide)	
(vide)	
Total général	**264**

Number of victims

Criteria for cross table



Automatic graphs



Criteria 1 : Responsability of the wolf

Criteria 2 : Presence of consommation

Criteria 3 : Typology of victims

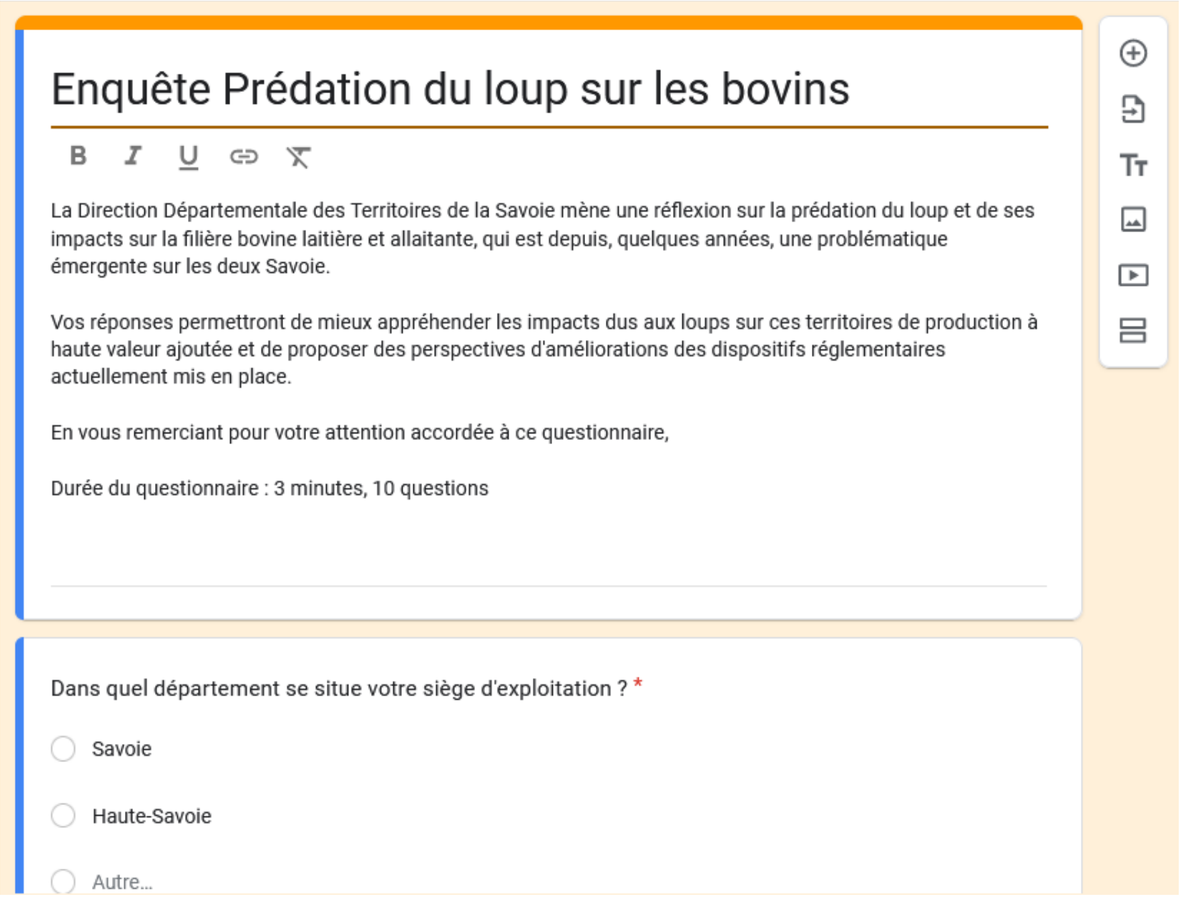
Example of a dynamic cross table and automatic graphs

2/ Materials and methods

2.3/ A online survey to better understand the field

An online survey was also conducted on 1591 cattle farmers to get a better understanding of the situation on the ground in Savoie and Haute-Savoie.

Extract of the online survey



673 responses were obtained,
corresponding to 35.5% of cattle breeders in the 2 departements

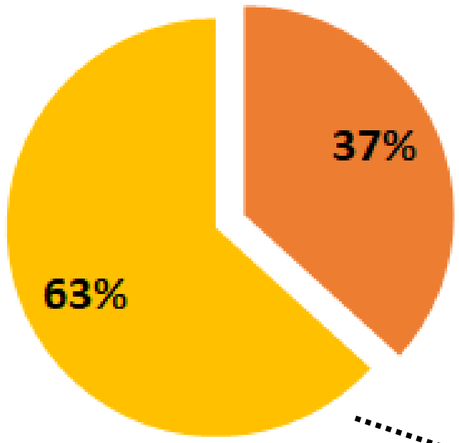
Different themes were covered such as:

-the **presence of wolves** in grazing areas
-the **reporting** and **non-reporting** of victims
-the **number of unreported victims**
-the **year** and **nature** of the **various unreported events**
-the **reasons** for the non-reporting
-and **knowledge** of the steps to follow to report a damage

3/ Results of damage report analysis

3.1/Difficulties in determining the origin of the damage

Wolf responsibility for all recorded damage(Haute-Savoie, Savoie, 2015-2020, 147 incidents)

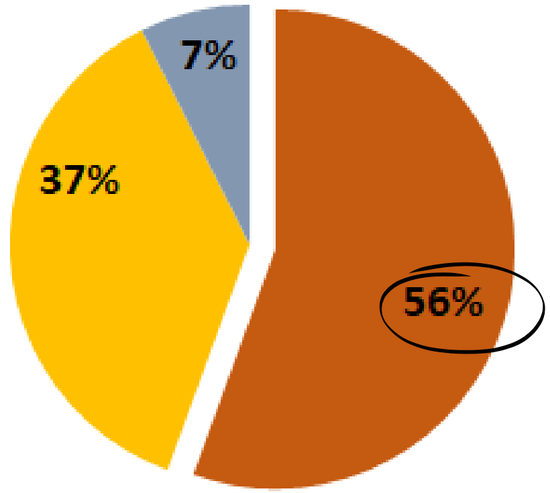


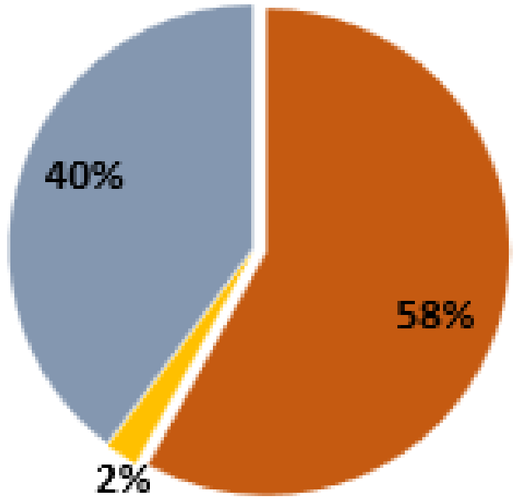
Wolf's responsibility excluded

Wolf's responsibility not excluded

37 % were ruled out as being caused by the wolf

Distribution of cause of death according to the wolf's responsability (147 damages, Savoie, Haute-Savoie, 2015-2020)





Origin undetermined

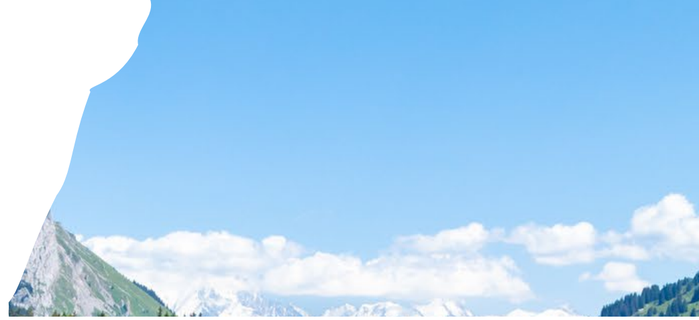
Mortality not linked to predation

Mortality linked to predation

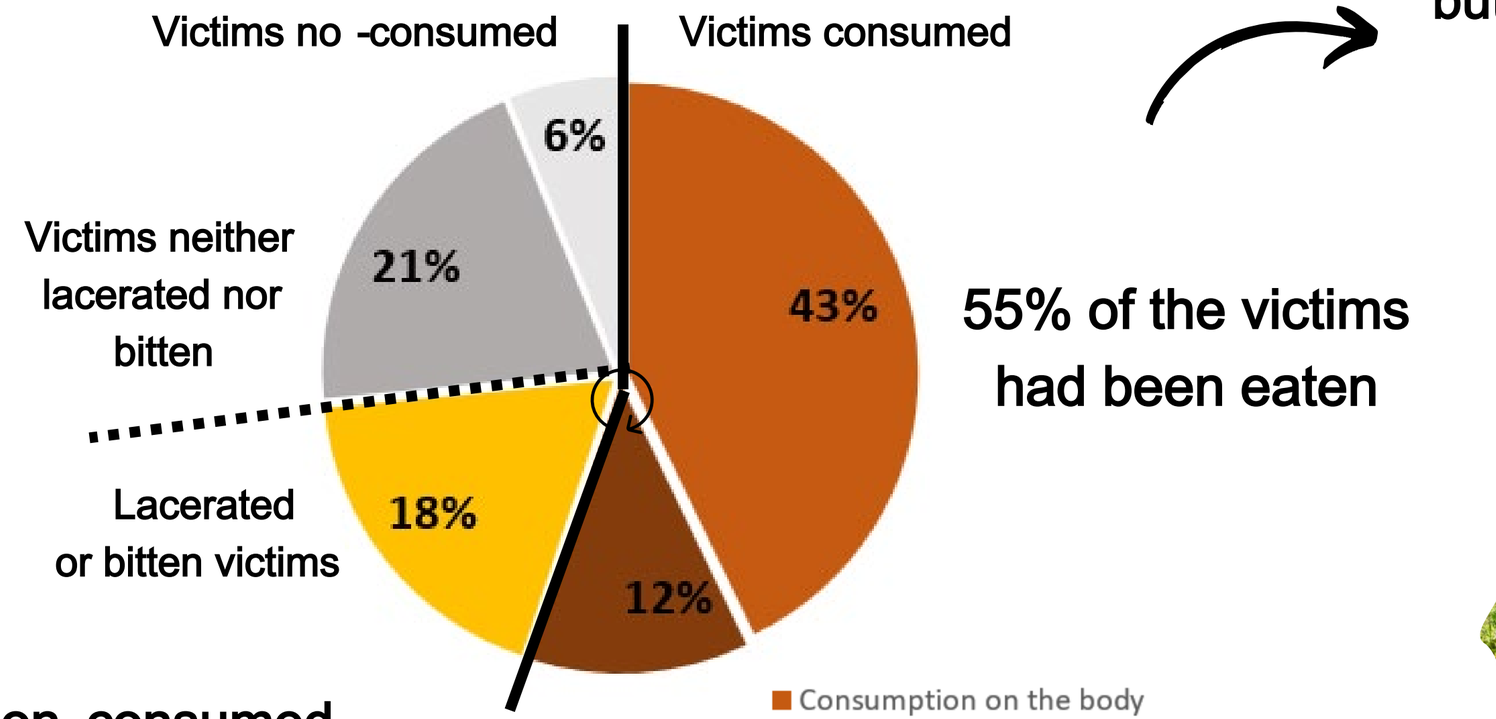
The cause of death was reported as undetermined in 56% and 58% of cases

3/ Results of damage report analysis

3.2/ Few characteristics about victims excluded



Characteristics of victims
(49 victims, 30 damage reported for which the wolf was not responsible and for which the cause of death was undetermined)



The wolf has been ruled out... but many of the victims showed signs similar to predation

55% of the victims had been eaten

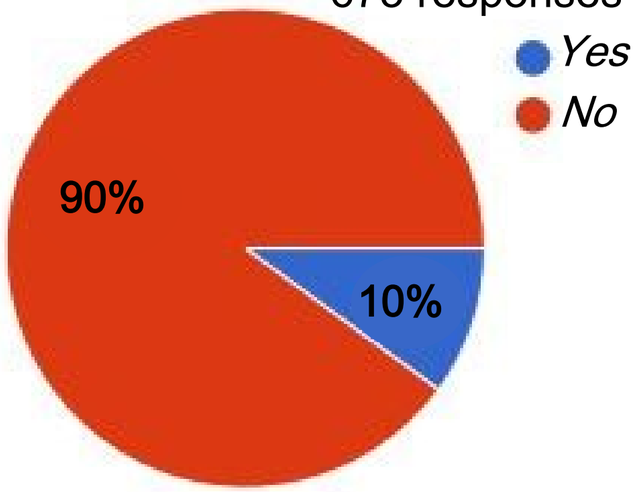
Of the **non -consumed victims, 18% showed bites or lacerations**

3/ Results of the survey about the reporting of damage

3.3/ The absence of damage reports

Have you ever reported a bovine victim to the DDT?*

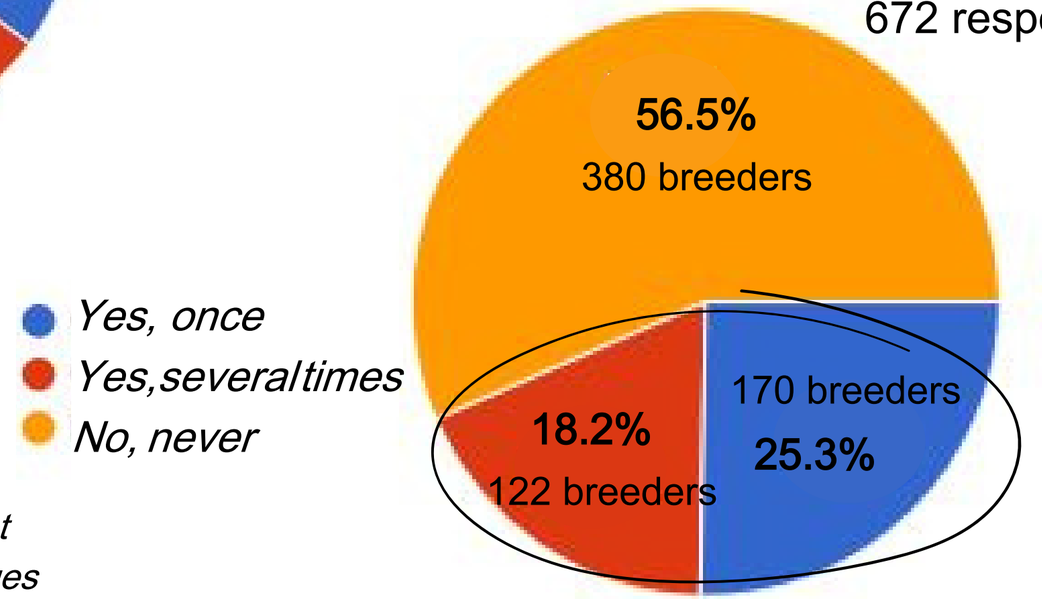
673 responses



Only 10% of cattle farmers report damage, while 43.5% experiencing unreported losses

Have you ever had a bovine victim for which you have not contacted the DDT?

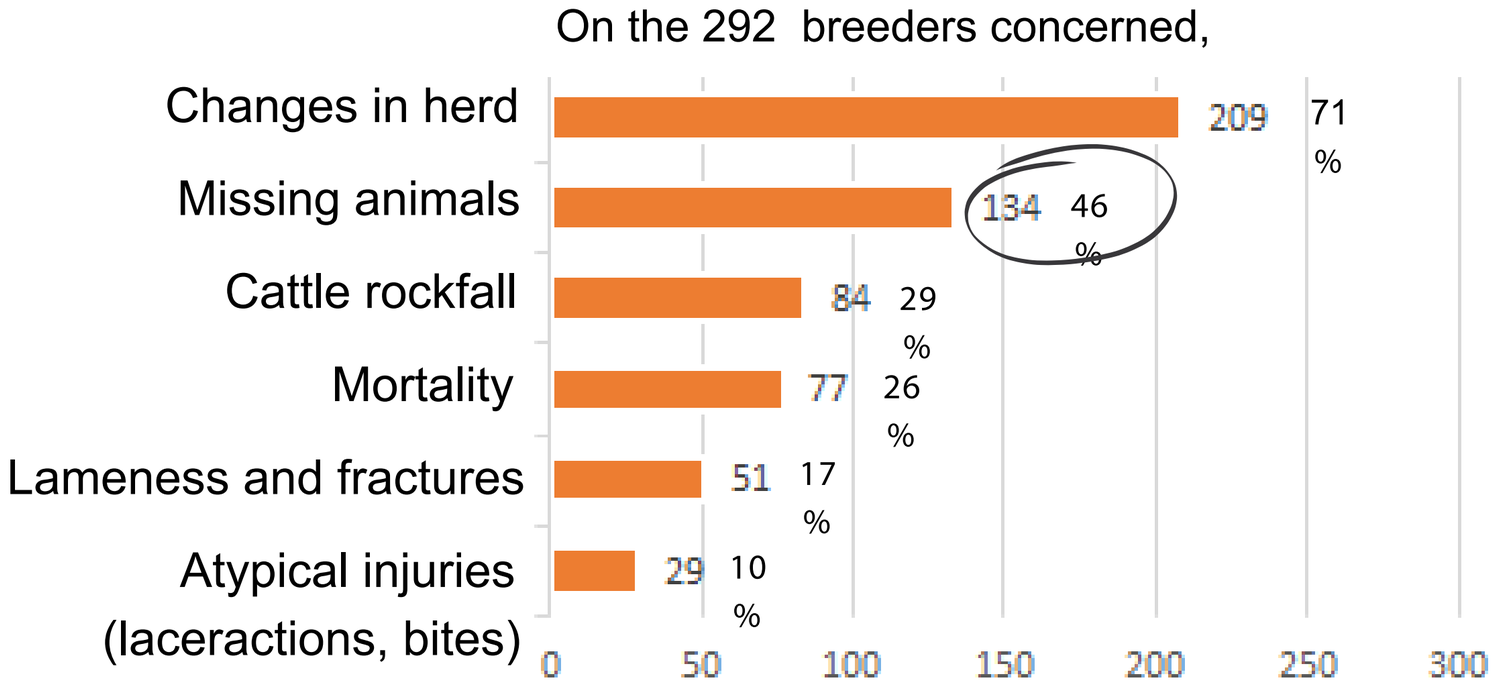
672 responses



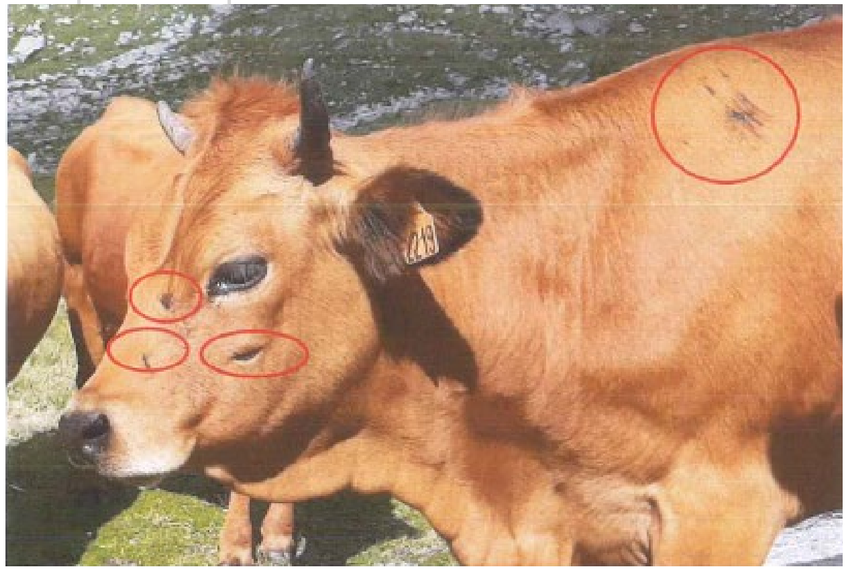
**DDT : administrative department responsible for registering damages*

3/ Results of the survey about the reporting of damage

3.3/ Type of unreported damage



46% of breeders concerned reported missing animals

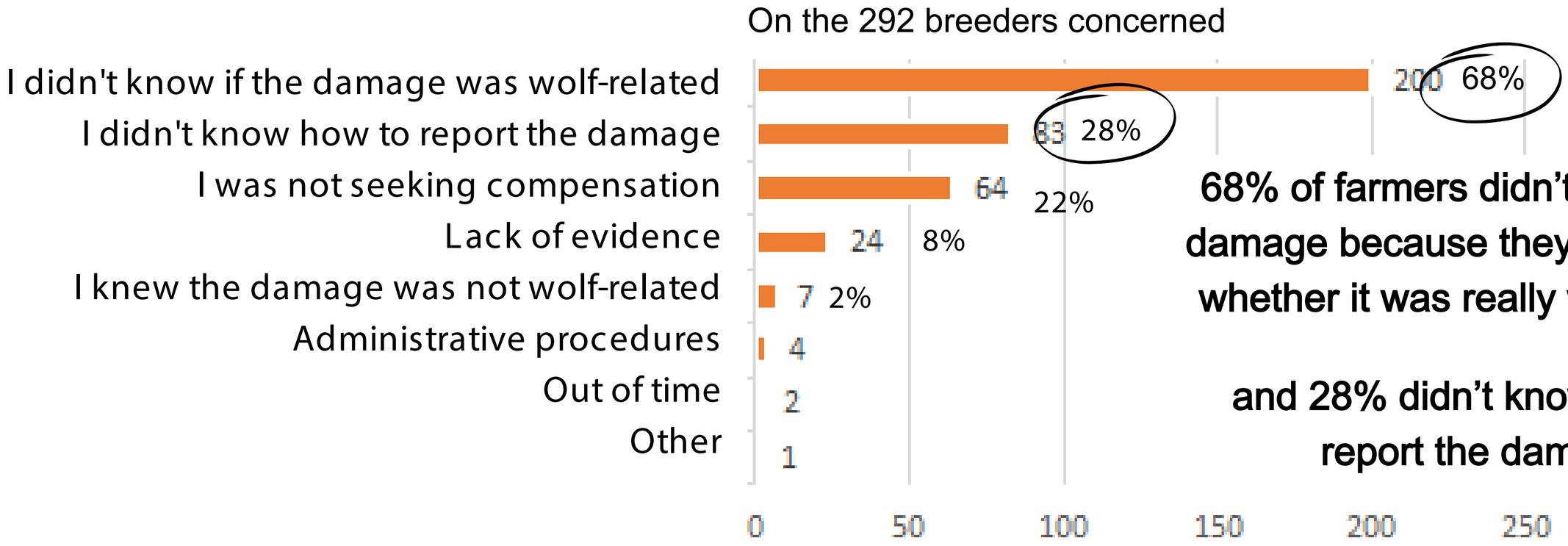


Unreported damage concerned also cattle rockfall, mortality, lameness, fractures, and atypical injuries

3/ Results of the survey about the reporting of damage

3.4/ Reasons of the unreport

There is a form of self-censorship...



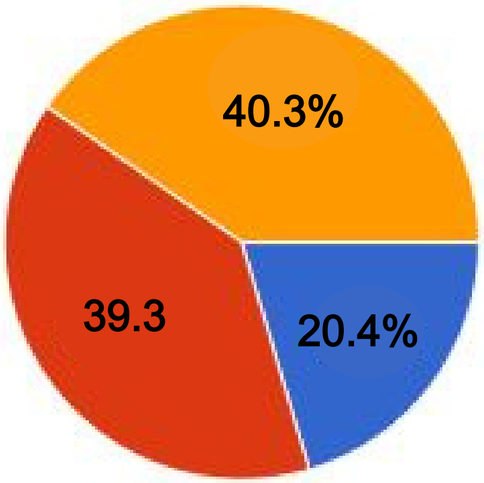
68% of farmers didn't report their damage because they didn't know whether it was really wolf -related

and 28% didn't know how to report the damage

There is a lack of information on damage reporting procedures, probably linked to emerging predation on cattle in an area previously excluded

3/ Results of the survey about the reporting of damage

3.4/ Knowledge of procedures



Do you know how to report a damage ?

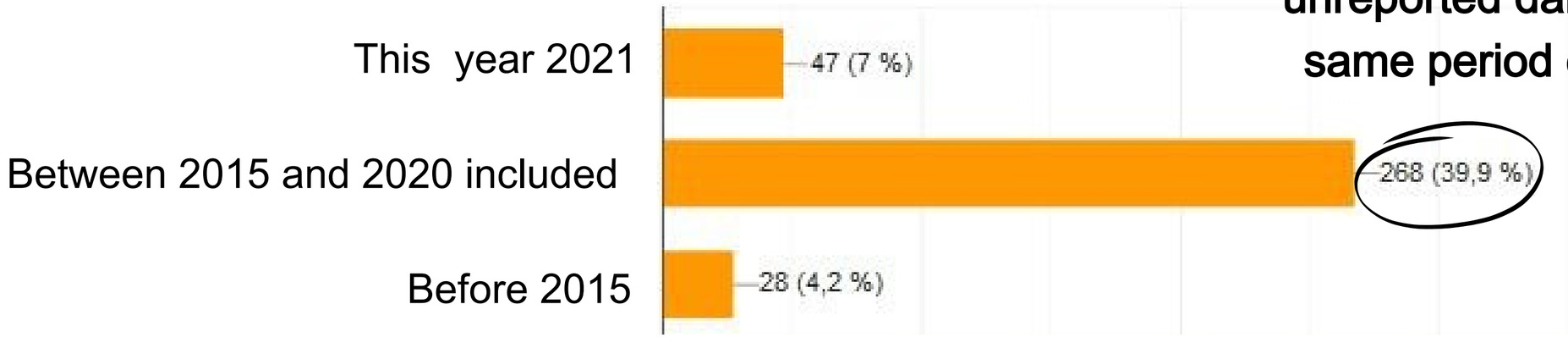
- *Yes, I know the process to follow (who to contact, technical expertise...)*
- *I feel moderately informed about the steps to follow*
- *No, I don't know what to do at all.*

Only 20% knew the entire reporting process (40% no knowledge, 40% moderaly familiar).

3/ Results of the survey about the reporting of damage

3.5/And when did these undeclared damages occur?

Time periods of the unreporting



268 breeders indicated that their unreported damage was during the same period of my data analysis...

The number of damage reported could be multiplied by 2.8 for the period 2015 - 2020...

4/ Conclusion

Wolf predation on cattle is an emerging issue.

Consumption in particular and **the diversity of operating methods** make it **difficult to recognise the stigmata of predation** and therefore **to assess the damage.**

The lack of proof and the challenges of determining the wolf's responsibility, along with procedural unfamiliarity **, leads to a significant underestimation of the damage.**

Procedures and information **require review and adaptation**

This study prompts the **identification of adaptation strategy** to reduce the risk impacting grass-fed cattle farming areas.

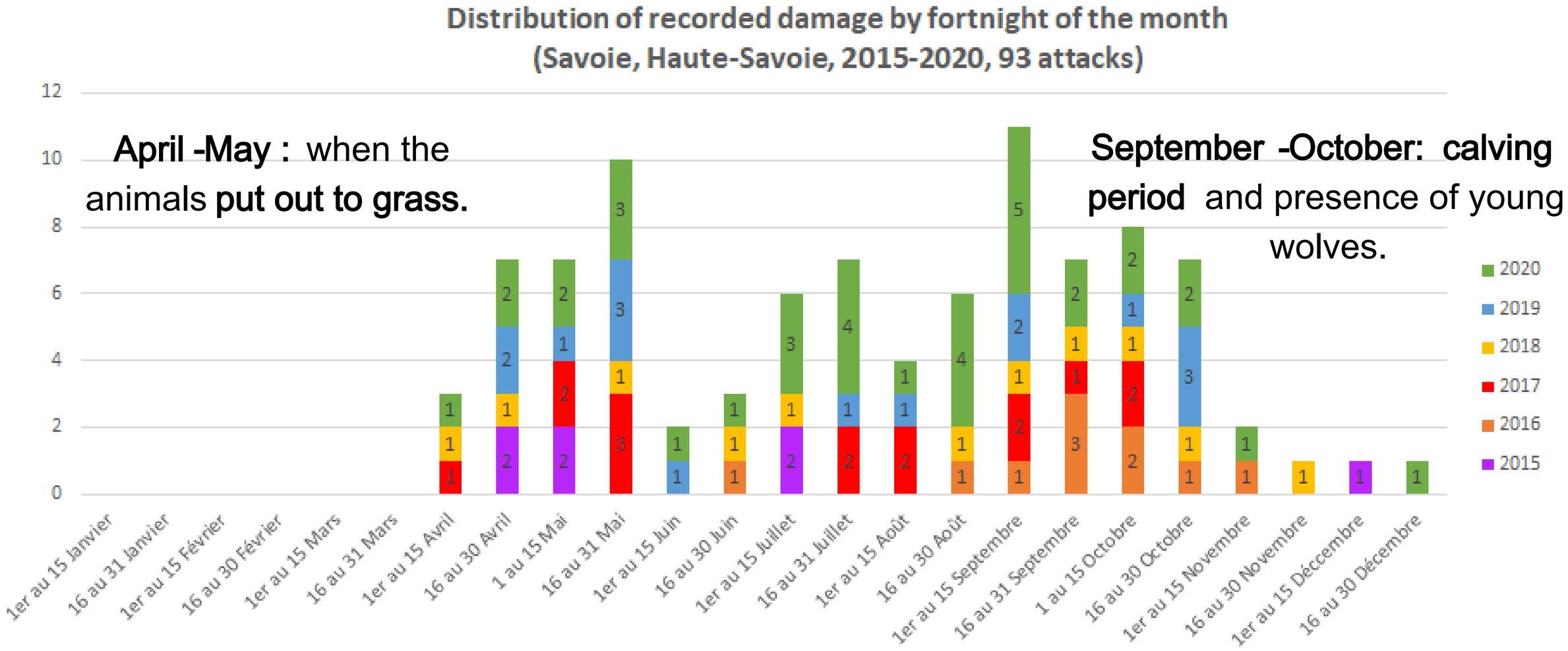
Thank you for your attention !

Any questions ?

morgane.virapin@vetagro -sup.fr

Relatively marked seasonal variations

Two peaks in wolf predation on cattle have been observed :

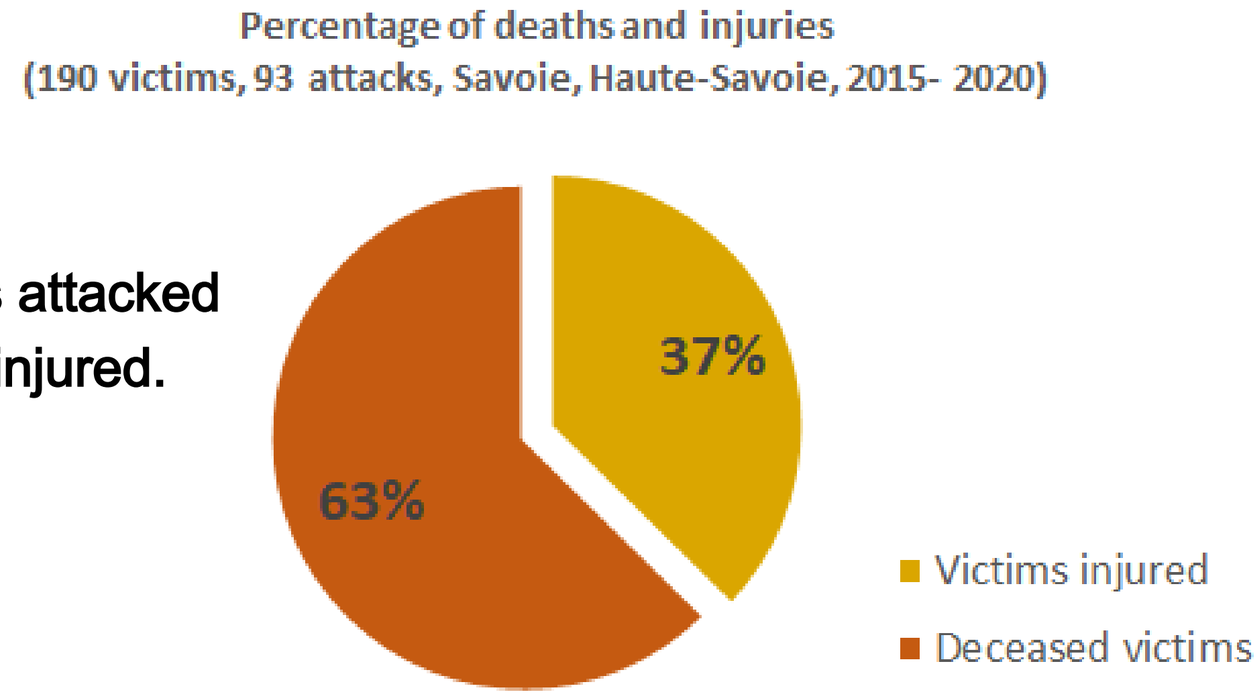


April -May : when the animals **put out to grass.**

September -October: calving period and presence of young wolves.

A share of injuries to be taken into account

The damage reports **do not only concern dead victims** :



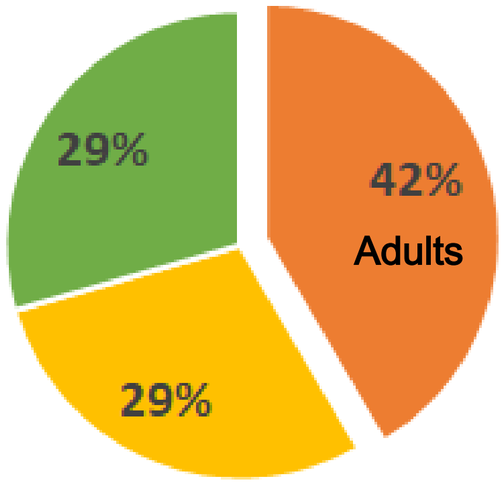
37% of victims attacked were found injured.

Injuries could be **lacerations, bites, lameness and fractures (** which may be linked to **falling).**

Cattle victims of all categories

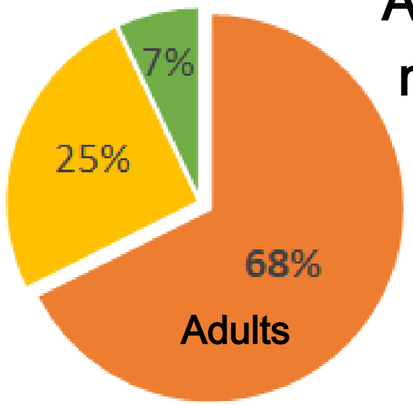
Many adults cattle are affected by predation

Typology of victims
(190 victims 93 attacks, Savoie, Haute-Savoie, 2015-2020)



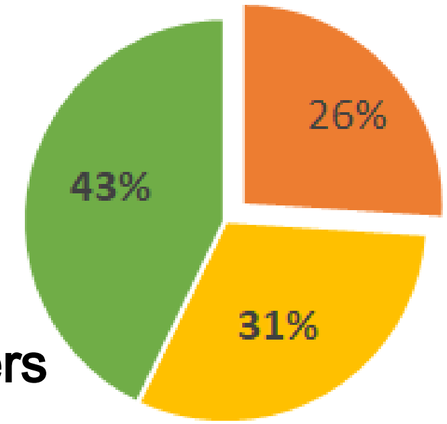
- Adults (+2 years)
- Heifers (6 months-2 years)
- Calves (0-6 months)

Typology of injured victims
(71 victims, 93 attacks, Savoie, Haute-Savoie, 2015-2020)



Adults are the most injured

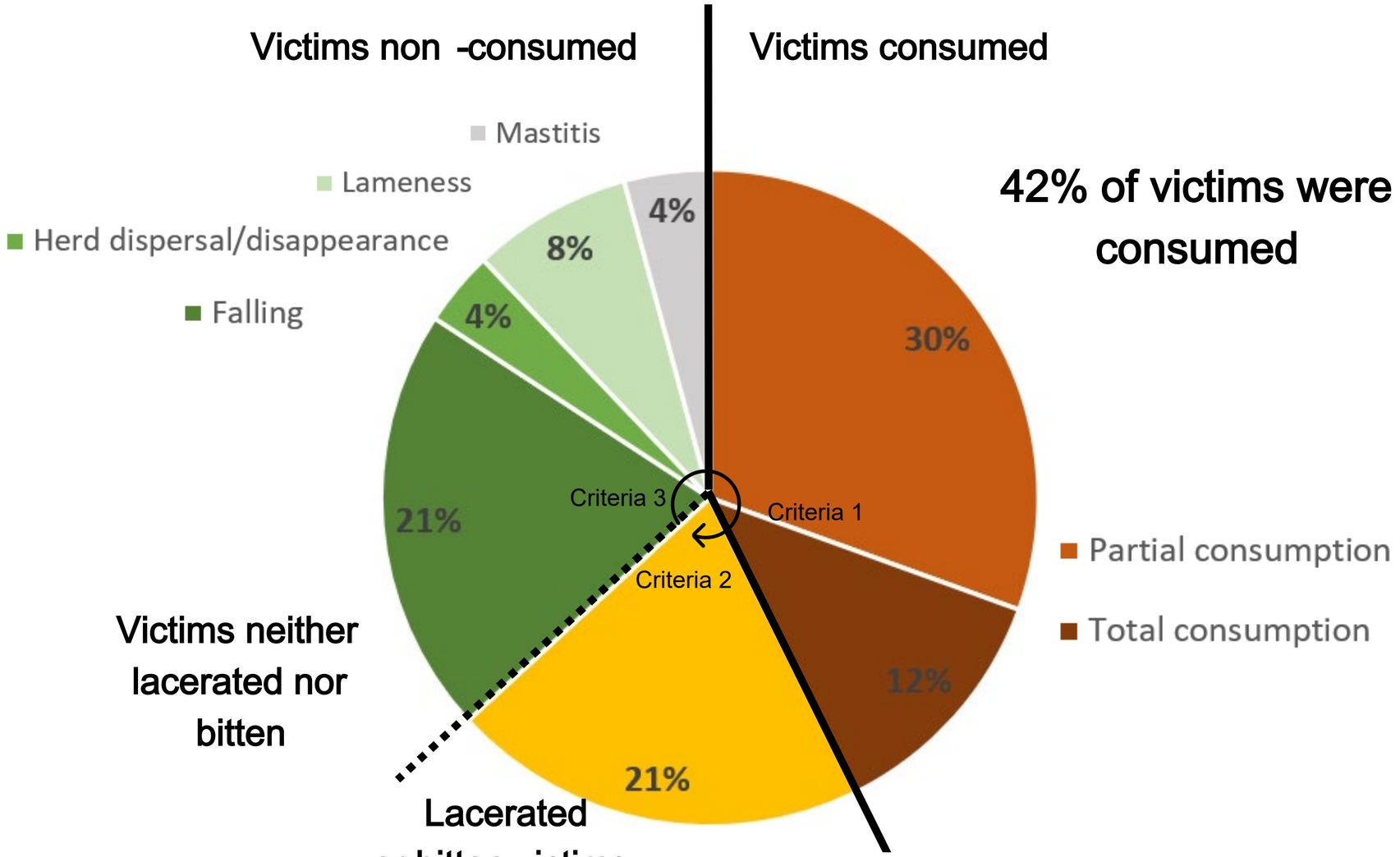
Typology of deceased victims
(119 victims, 93 attacks, Savoie, Haute-Savoie, 2015-2020)



Calves and heifers are more often found dead

General characteristics of victims

(190 victimes attacked, Savoie, Haute-Savoie, 2015-2020)



42% of victims were consumed

Victims neither lacerated nor bitten

Lacerated or bitten victims

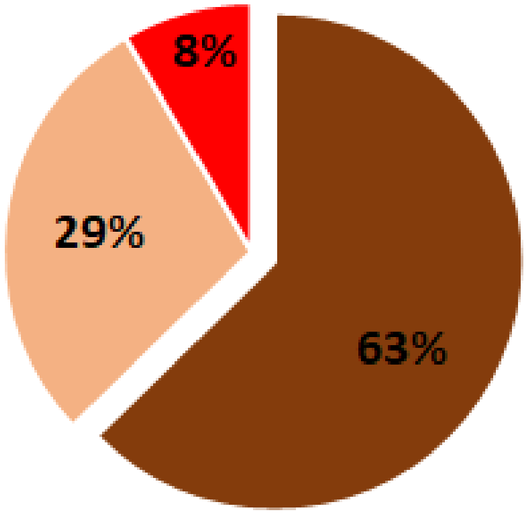
21 % showed lacerations or bites

Localization of lacerations and bites

Among the victims with lacerations and bites on the body:

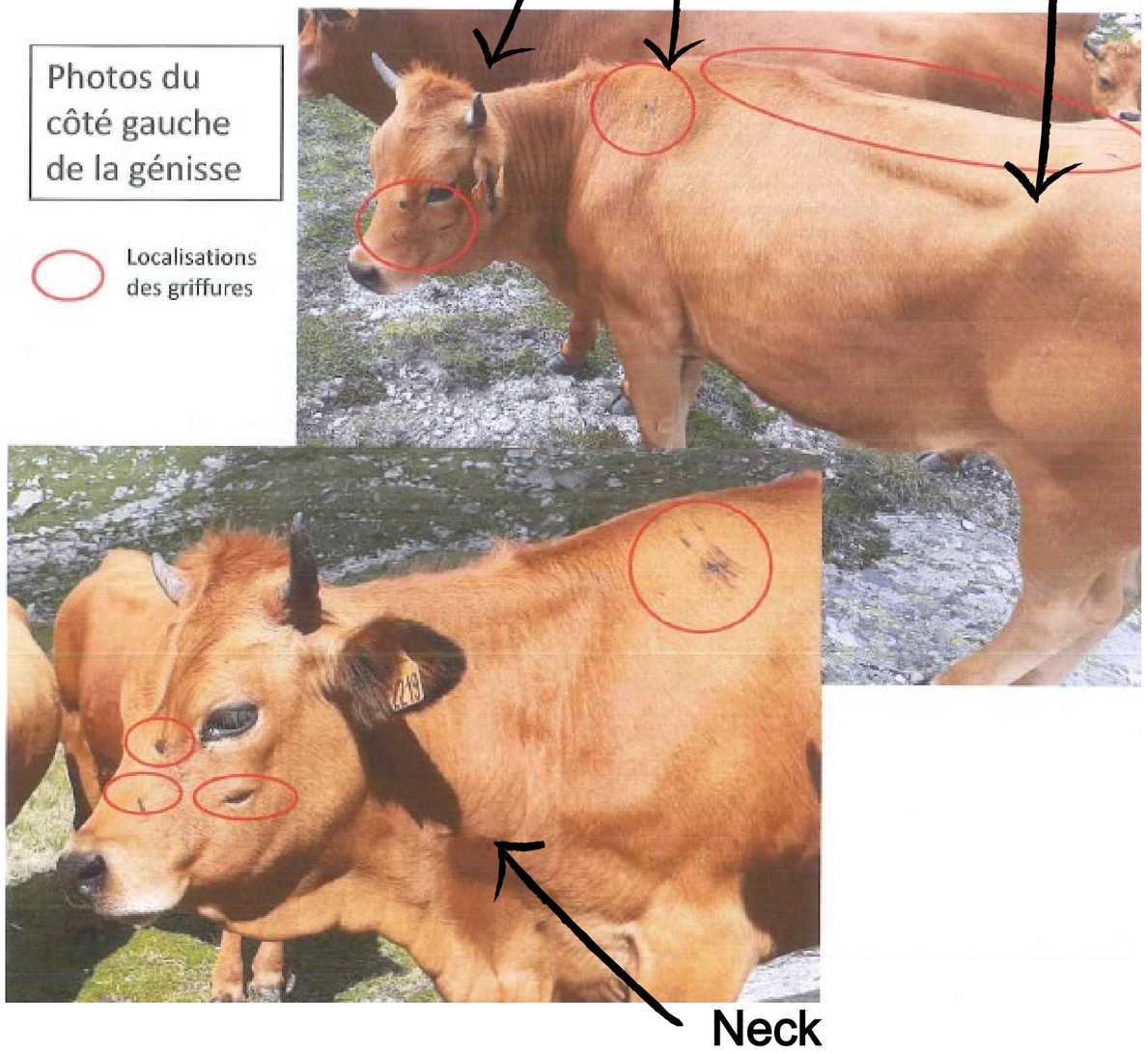
Presence of lacerations and/or bites (59 victims with lacerations and/or bites on the body, Savoie, Haute-Savoie, 2015-2020)

8% with lacerations or bites only on the throat



63% with lacerations or bites on their hindquarters

- on the hindquarters
- on the rest of the body
- on the neck only



"Rest of the body"

Hindquarters

Neck