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

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VetAgro Sup







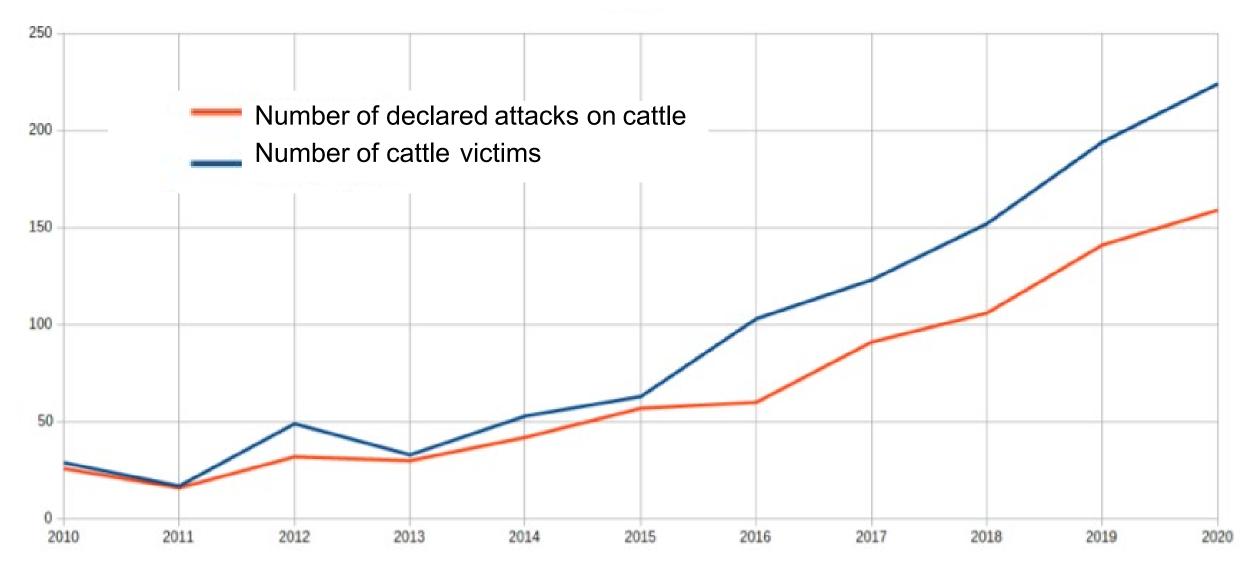


### 1/ Context and objectives

# 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

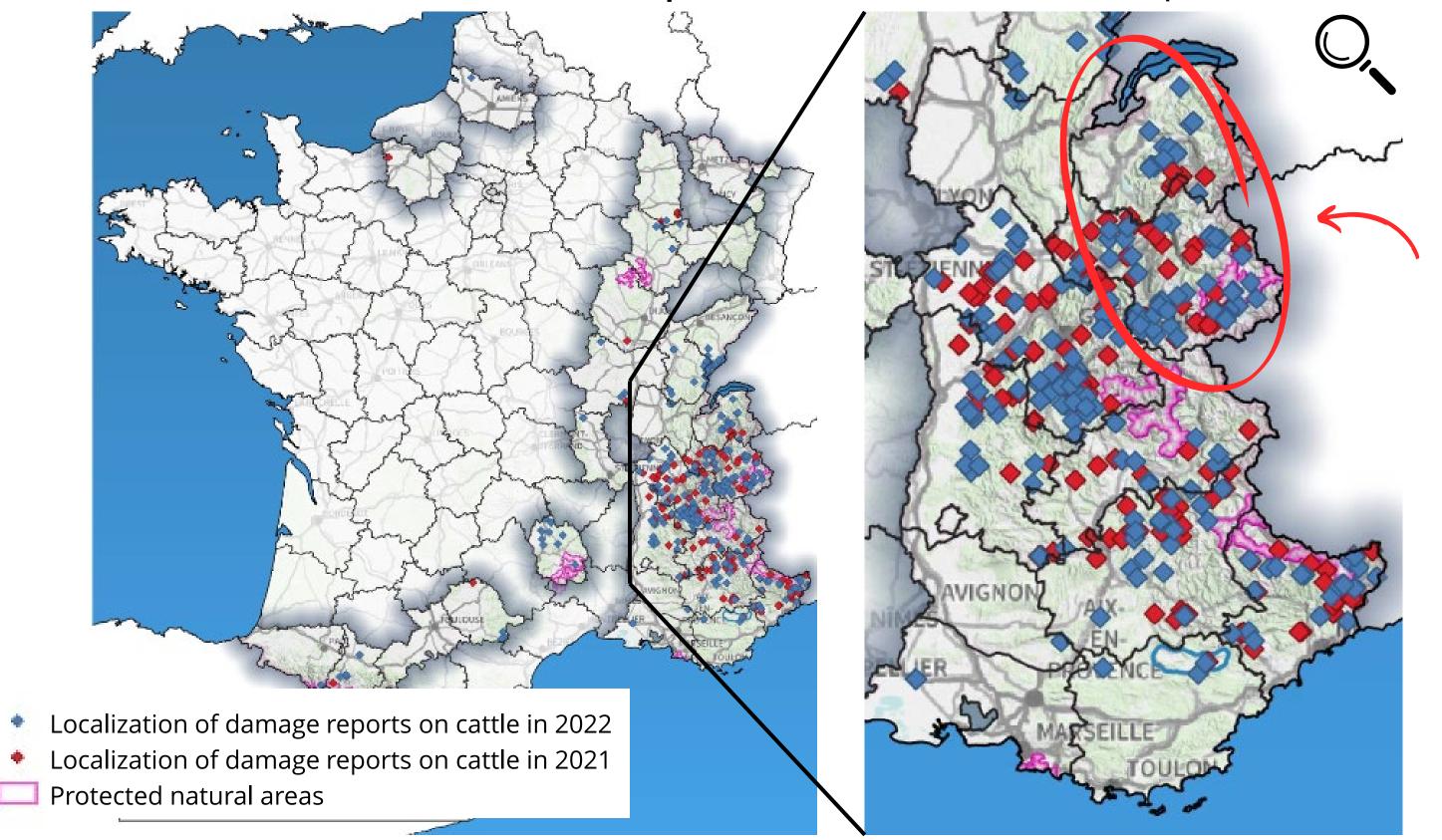
Source: Data Dreal Aura-DDT(M)



# 1.1/ A recent increase in damage to cattle



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



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





# 2.1/ Setting up the database

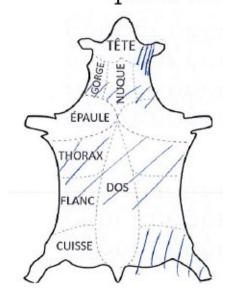


The database was compiled from all reported damage on cattle in Savoie and Haute -Savoie, over the period 2015 -2020.

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

| <b>Parties</b> | consommées  | ollows, marries a 50 . "  |
|----------------|---|---|
| 19             | Aucune partie consommée   | 1 2 3 4 5 6 7 8 9 10  |
| 20             | Consommation totale des chairs  | 1 2 3 4 5 6 7 8 9 10  |
| 21             | Cou ou nuque  | $\begin{smallmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ \hline \bullet & \bullet \end{smallmatrix}$      |
| 22             | Membre(s) antérieur(s)  | 1 2 3 4 5 6 7 8 9 10  |
| 23             | Membre(s) postérieur(s)   | $\begin{smallmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ \hline \mathbf{M} & \Box \\ \end{smallmatrix}$                 |
| 24             | Viscères rouges (cœur, poumons, foie, rate)   | $ \begin{smallmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ \hline \square & \square \\ \end{smallmatrix} $ |
| 25             | Viscères blancs (panse, intestins)  | 1 2 3 4 5 6 7 8 9 10  |
| 26             | Pis   | $\begin{smallmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ \hline 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \end{smallmatrix}$   |
| 27             | Chairs du poitrail  | 1 2 3 4 5 6 7 8 9 10  |
| 28             | Dos   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10   |
| 29             | Flanc   | 1 2 3 4 5 6 7 8 9 10  |
| 30             | Tissus mous en périphérie des orifices naturels (yeux, lèvres, museau, oreilles, vulve) | 1 2 3 4 5 6 7 8 9 10  |
|                |   |   |

#### Mode de consommation

| 31 | Proie recouverte par grattage (herbe, humus, feuillage, neige)   | $\begin{smallmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ \hline \bullet & \bullet \end{smallmatrix}$ |
|----|--|--|
| 32 | Os longs des membres brisés nets   | 1 2 3 4 5 6 7 8 9 10   |
| 33 | Cage thoracique ouverte ET sternum absent  | 1 2 3 4 5 6 7 8 9 10   |
| 34 | Os des membres décharnés ET en connexion anatomique  | 1 2 3 4 5 6 7 8 9 10   |
| 35 | Ouverture de la cavité abdominale ET panse intacte,<br>OU contenu de la panse à proximité de la carcasse | 1 2 3 4 5 6 7 8 9 10   |

# 2.1/ Setting up the database



147 damage reports

264 cattle victims

109 farmers concerned

|  | diameter. | ment totale, | des victime | de Pattage |         | Mencken                     | and the same        | Part                         | de MAIR | Det                     | ults corps l | Etut gini  | bul .         | Dibal                |       | Palitral |             | Menheer    |                | Pi                  |  | Arrites                                     | train                      | Blers     | ures .         | equate at | Shows no         | Made d                            | e concessation                |  |  | Origine et                  | responsabil                      | last           |
|--|-----------|--------------|-------------|------------|---------|-----------------------------|---------------------|------------------------------|---------|-------------------------|--------------|------------|---------------|----------------------|-------|----------|-------------|------------|----------------|---------------------|--|---|----------------------------|-----------|----------------|-----------|------------------|-----------------------------------|-------------------------------|--|--|-----------------------------|----------------------------------|----------------|
| finales<br>for<br>decident<br>stat de<br>strages | elline    | enter        | e speller   | Spelar     | Entitor | Birarkas<br>estrenti<br>est |                     | Rarranck<br>Martine<br>Mouse |         | Property<br>de<br>Trime | Time.        | - Division | Mari          | Ganzana<br>stina Can | outle | dar      | distribute. | B CONTRACT | Hember         | Onerena<br>ottas Po | Marrar<br>arttar<br>tradian<br>rest<br>terpiar | Constant<br>Carolina-<br>Carolina-<br>Crain | code<br>artises<br>retires | President | Person<br>made | - Aller   | Tierre<br>Tierre | Made de                           | Hala de<br>seurementie<br>+ E | Farries<br>dar<br>character<br>ritranius | Communicative  | faura da<br>la<br>mantentin | Barganarabil<br>ISS lang         | Informi        |
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| 4  | -         | +            | 9           | 4          | 4       | - 2                         | Athlant Stock       | 14                           | 2       | -                       | 19           | 2          |               | - 10                 |       | - 19     | H           |            |                | - 13                | H  | - 11  | 1                          | - 1       |                | 19        | 9                |                                   |                               |  |  | -                           | Plan Souristic                   | britanni,      |
|  | _         | -            | -           |            | _       | -                           | Additor Differed    |                              | _       | -                       | - 1          | _          | _             | _                    | -     | - 11     | -           | -          | -              | -                   | - 11   |   |                            | _         | -              | -         | - 0              |                                   |                               |  |  |                             | New hours for                    |                |
| -  | -         | +            | - 1         | 1          |         | -                           | Abbert Sand         | -                            |         | -                       | - 19         | -          | -             |                      | -     | - 11     | H           |            |                | - 1                 | - 11   | - 15  | _                          | - 1       | -              | - 1       | 1 1              | _                                 | _                             | _  |  |                             | Plan Scott Sec                   |                |
| + +  | -         | - : -        | -1          | -1-        |         | - 2                         | Addres Critical     | - 11                         |         |                         |              | -          | -             |                      | -     | 1 2      | - 1         |            | <del>- :</del> |                     | <del>- 11 - 1</del>                            |   | -                          |           |                | 1 3       | <del>  8</del>   | _                                 | _                             | _  | Observa<br>embens pet ridle, elitricile incominge, consumention con-   |                             | Plan Source(So<br>Plan Source(So |                |
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| 1  |           | +            | 4           |            | ,       |                             | Addres (19) and     | "                            | ,       |                         | н            |            |               |                      | ,     | 0        | 0           |            |                | н                   | H  | - 0   | ,                          | 0.        |                | 0.        | . 0              |                                   |                               | 0  | nichtien der bereicht diese geberteut filt versteuts, par de trace de  | - 1                         | Contin                           | Bath           |
| ,  |           |              | - 4         |            | ,       |                             | or Windows Dwar     |                              |         |                         |              | 2          |               |                      |       | - 11     | H           |            |                | - 12                | H  | - 1   | -                          | - 2       |                | - 13      | - 11             |                                   |                               |  | manuscaminatorian district request on prioria.  prioria for annota specificación perior diferences in describer  | ,                           | Then becoming                    | to the same is |
| _  | _         |              | _           |            |         |                             | Additor Et General  | - 11                         | _       | -                       | - 11         | -          |               |                      | -     | 9        | H           |            |                | - 11                | H  | -   | _                          |           | _              |           |                  |                                   |                               | -0                                       | 2 de para  |                             | Ecortic                          | Bath           |
| -  | -         | +            | - 4         | 4          |         | -                           | eribiscen/Jea       | <u> </u>                     | -       | -                       | 19           | 1          |               |                      | + +   | - 11     | H           | -          | -              | - 11                | H  | - 1   | -                          | - 1       | 1 4            | - 12      | H                | _                                 | _                             |  | Mark   |                             | Esstia                           | Bath           |
|  | _         | +            | - 4         | 4          |         | -                           | or Winteres Charac  | -                            | ,       | •                       | - 19         | -          | -             |                      | -     | -        | H           | -          | -              | - 13                | - "  |   | -                          |           | -              | - 1       | - "              | _                                 | _                             | _  | Printed to the Control of the Contro |                             | Contin                           | Bath           |
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| -  | -         | -            |             | -          |         | -                           | Transition (Inc.    |                              | -       | -                       | -            | -          | $\rightarrow$ |                      | -     |          |             | -          | <del></del>    | <del>-</del> -      |  | - 7   | -                          | -         | -              | 1 2       | - 1              | Parameter and a first             |                               |  | and the second s | - 5                         | Nan hour for<br>then hour for    | la forma       |
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| 1  | -         | 4            | 4           | 4          | -       | -                           | Athles (-Good       |                              |         |                         | 19           | - 5        | - 5           | - 10                 | -     | 14       | H           |            |                | 11                  |  |   | -                          |           |                | - 19      | 14               |                                   |                               |  | Physical advanta   | -                           | Plan Installa                    | Indiana's      |
| 5  |           |              | _           | -          |         |                             | Trong Silvines      | 11                           |         | - 4                     |              |            |               |                      |       | -        | 1           |            |                |                     | -  | _   |                            |           |                |           | -                |                                   |                               |  | per de précision   |                             | Man boardie                      |                |
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|  |           | +            | 4           | 4          |         |                             | hard Winters Own    | 14                           | 2       | - 0                     | 19           |            | 2             | - 8                  |       | 0        |             | 7          |                | - 11                | H  |   | 2                          | x         | 7              |           |                  |                                   |                               |  | A sa jeurous distina da plada o no la mergantia  | -                           | Then become to                   |                |
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| 1  |           |              | 4           |            | ,       | 9                           | or Biston One       | H                            | 2       |                         |              |            |               | N.                   |       | . 11     | н           |            |                |                     | н  | п   | 3                          | x         | 2              | . 11      | н                |                                   |                               | 0  | Manhatrofficate contact balls disputed 1998  | 1                           | Ecotto                           | Rate           |
| 1  |           | +            | 4           | *          | 1       | 9                           | officient() no      | н                            | 2       |                         | -            |            |               | к                    |       | н        | н           |            |                | н                   | н  | н   |                            | x         | 1              | н         | н                |                                   |                               | 0  | Hadistorilano contra tahu Capata 1966  | 1                           | Esstis                           | Eat            |
| P  |           | +            | 4           | 4          | - 2     |                             | orWeigner Gen       |                              | -       |                         |              | ,          | •             |                      | ,     | н        |             |            | •              | н                   | н  | н   | ,                          | 9.        |                | н         | н                | Si formanico                      |                               | 0  | Hedwise West content balts in patter MINE  | 1                           | formir.                          | Bath           |
| ,  |           | *            | 4           | •          | •       | •                           | Year(NiNess)        | н н                          |         | *                       | н            | •          | •             |                      | ,     | н        |             |            | •              |                     | *  |   |                            |           |                | н         |                  | Andreaders to a secondary         |                               | 0  | discourse magnes in marries, announced monthly but<br>beth, if Dettis  | 1                           | Ecorio .                         | Bath           |

Extract from the database

264 rows (1 row per victim) x

30 columns (indicators of interest linked to the report)



# 2.2/ Dynamic cross -table

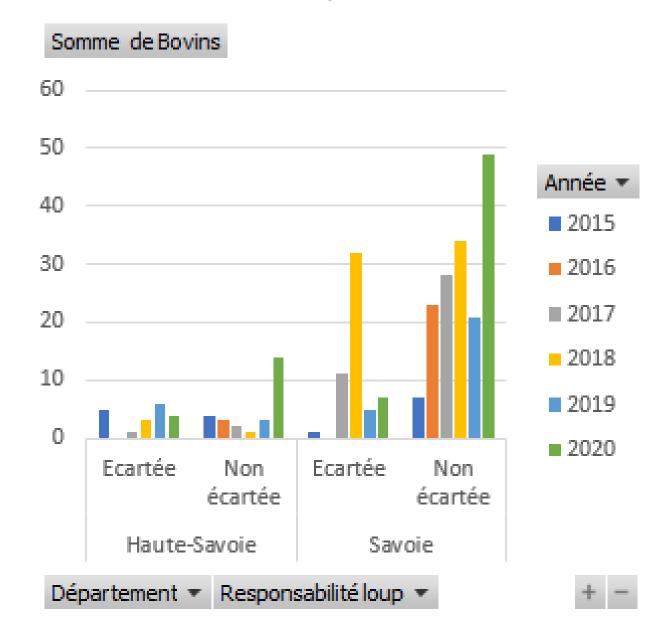


With pivot tables, we were able to group data according to one or more of the fields , and to perform data cross-referencing operations.

#### Dynamic cross table Criteria for cross table Champs de tableau croisé... Étiquettes de lignes ▼ Nombre de Numéro Géoloup **■ Ecartée** 74 Choisissez les champs à inclure dans le rapport : 30 →BN Number Adultes (+2ans) 18 Rechercher of victims Génisse/Génisson (6mois-2ans) 3 ✓ Numéro Géoloup Veau (0 à 6 mois) ✓ Responsabilité du loup **→**□**O** 41 Cause de la mortalité Adultes ( +2ans) Dérochement/accident Génisse/Génisson (6mois-2ans) ✓ Typologie de la victime Veau (0 à 6 mois) Retrouvé Mort ou Blessé ±Χ Décès par le suite/Euthanie OuiNon ⊕ (vide) ✓ Présence de consommation ∃Non écartée 190 Consommation totale des chairs 107 →BN Adultes (+2ans) 63 Faites glisser les champs dans les zones voulues ci-dessous: Génisse/Génisson (6mois-2ans) **T** Filtres III Colonnes Veau (0 à 6 mois) **⊕**⊟O 81 Adultes (+2ans) 16 Génisse/Génisson (6mois-2ans) 19 Veau (0 à 6 mois) 46 Lignes ∑ Valeurs ±Χ Responsabilité d... \* (vide) Nombre de Numéro... ▼ Présence de con... ⊕ (vide)

264





Criteria 1 : Responsability of the wolf

Total général

Criteria 2 : Presence of consommation

Example of a dynamic cross table and automatic graphs

Typologie de la ... ▼

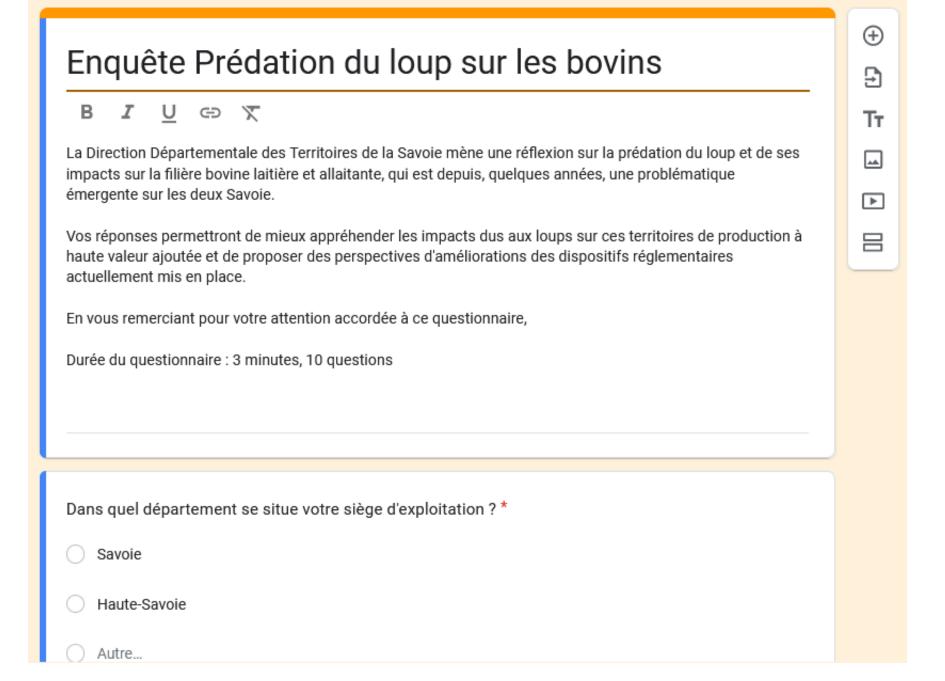
Criteria 3: Typology of victims

# 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:

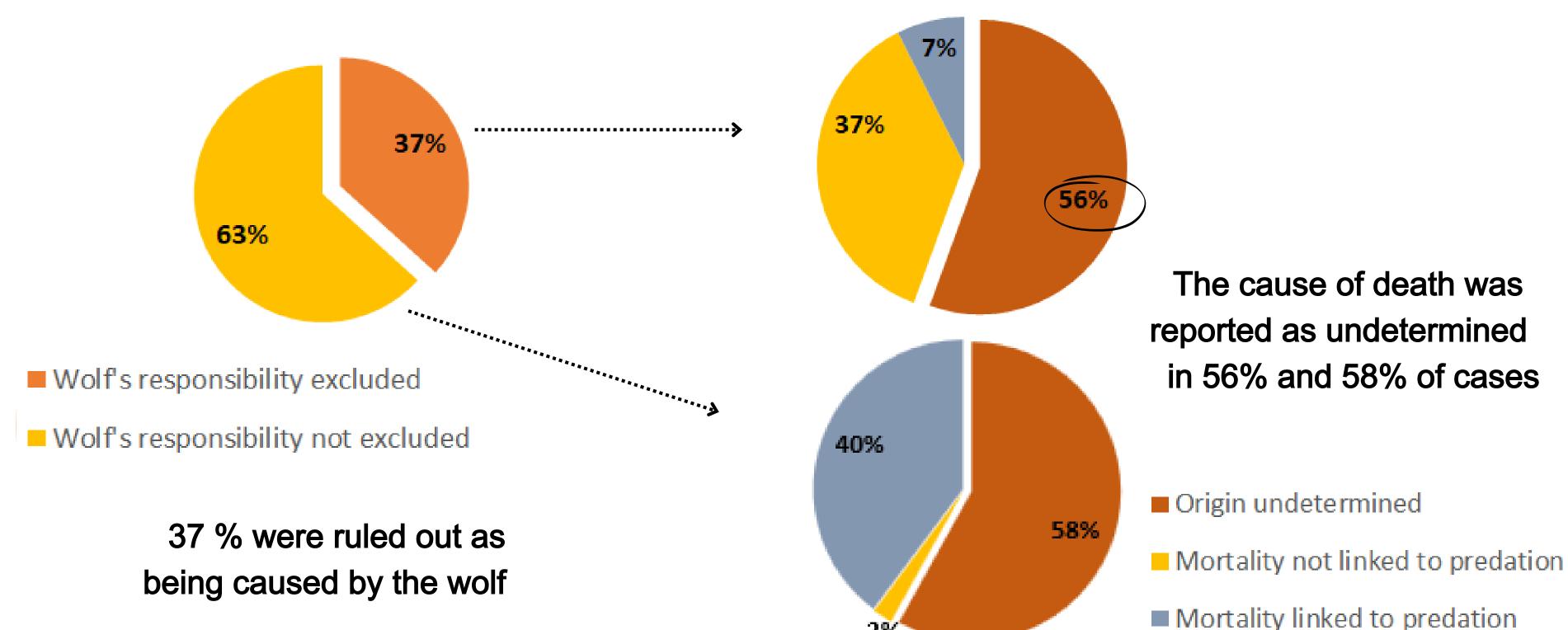
- -the **presence of wolves** in grazing areas
- -the reporting and non-reporting of victims
- -the number of unreported victims
- -the year and nature of the various unreported events
- -the reasons for the non-reporting
- -and **knowledge** of the steps to follow to report a damage

## 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)

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

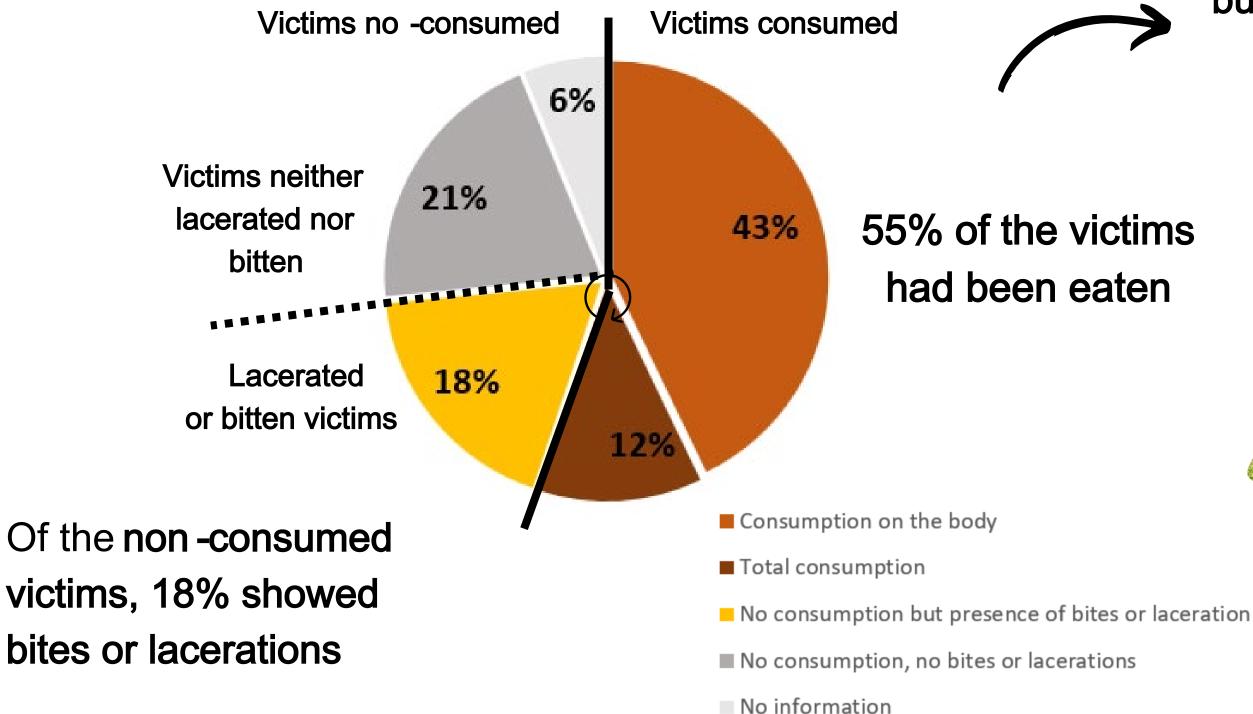


### 3/ Results of damage report analysis

#### 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



Yes, once

No, never

# 3.3/ The absence of damage reports

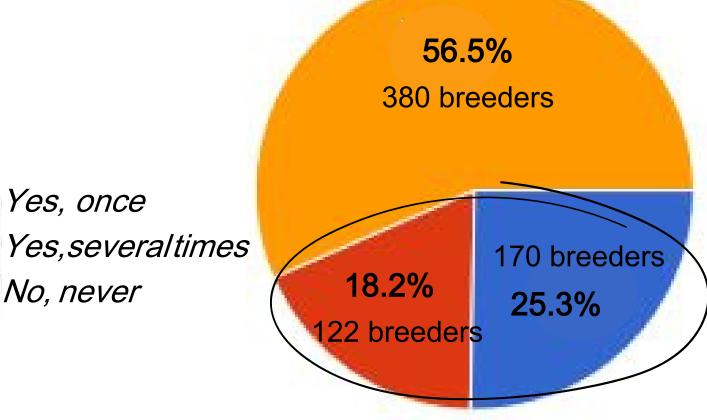
10%

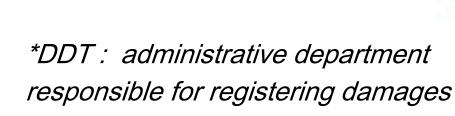
Have you ever reported a bovine victim to the DDT\*?



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

672 responses

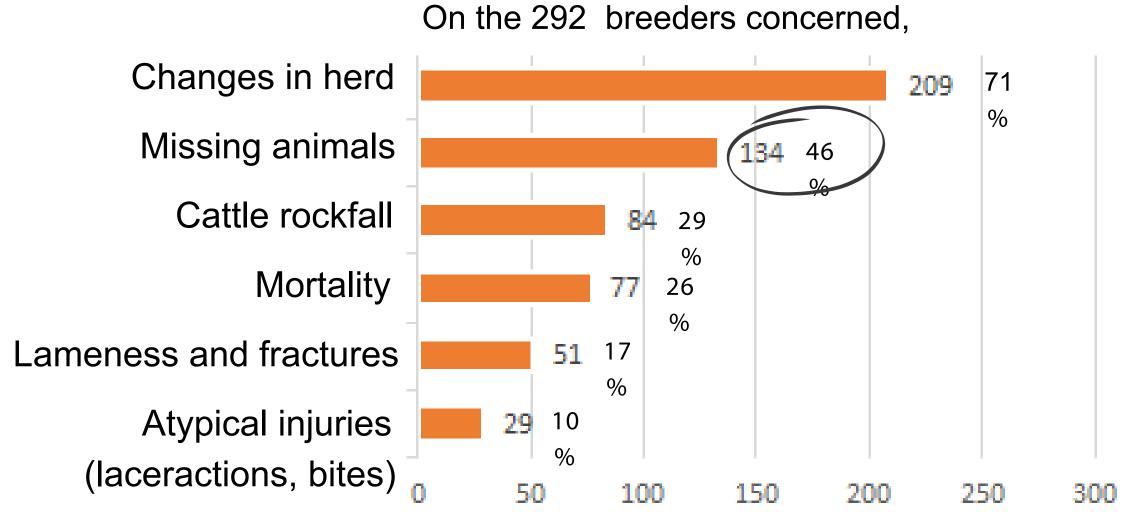




90%

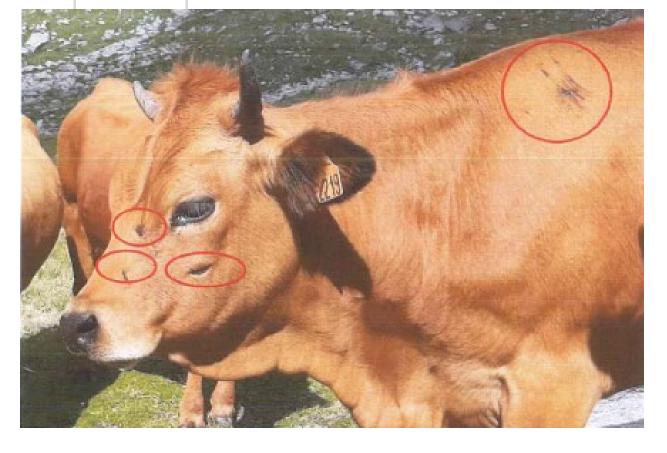


# 3.3/ Type of unreported damage



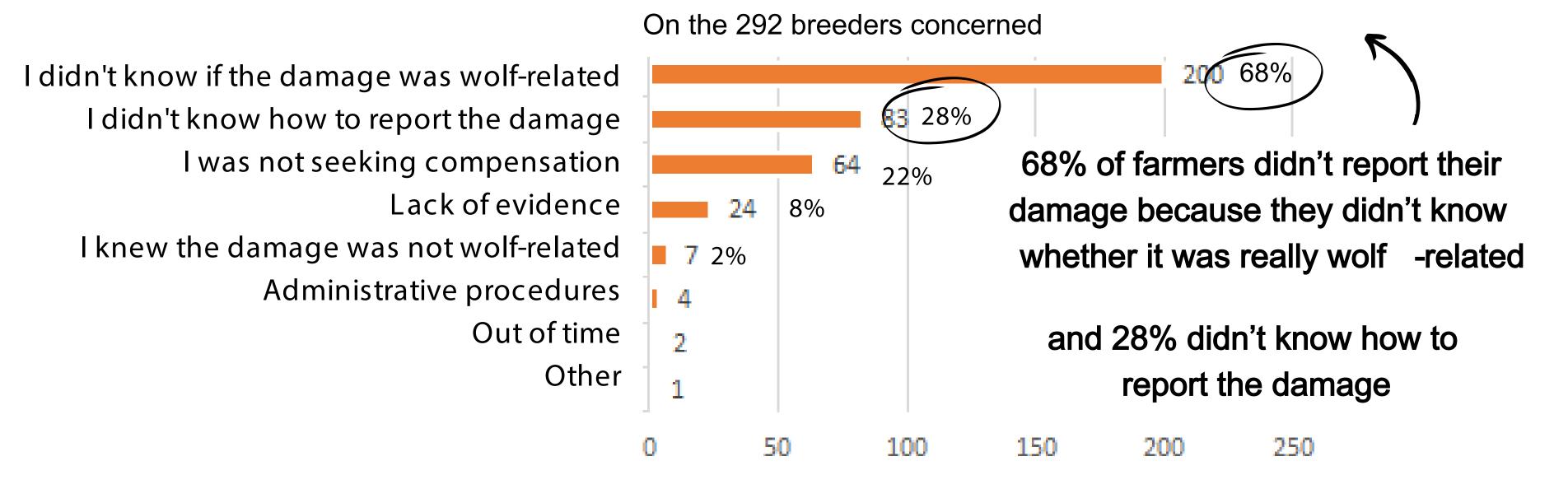
Unreported damage concerned also cattle rockfall, mortality, lameness, fractures, and atypical injuries

46% of breeders concerned reported missing animals



# 3.4/ Reasons of the unreport

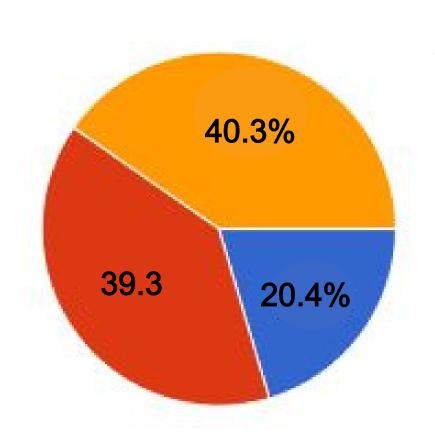
There is a form of self-censorship...



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



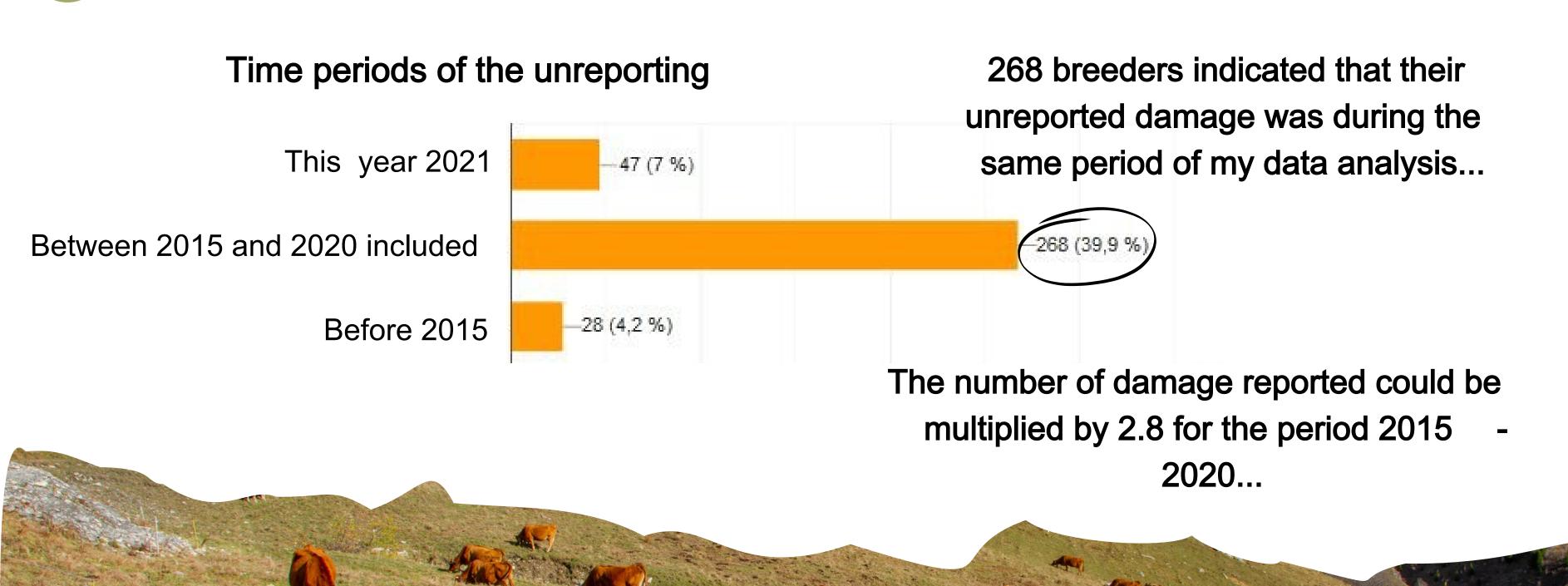
Do you know how to report a damage?

- 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).



# 3.5/And when did these undeclared damages occur?



# 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?

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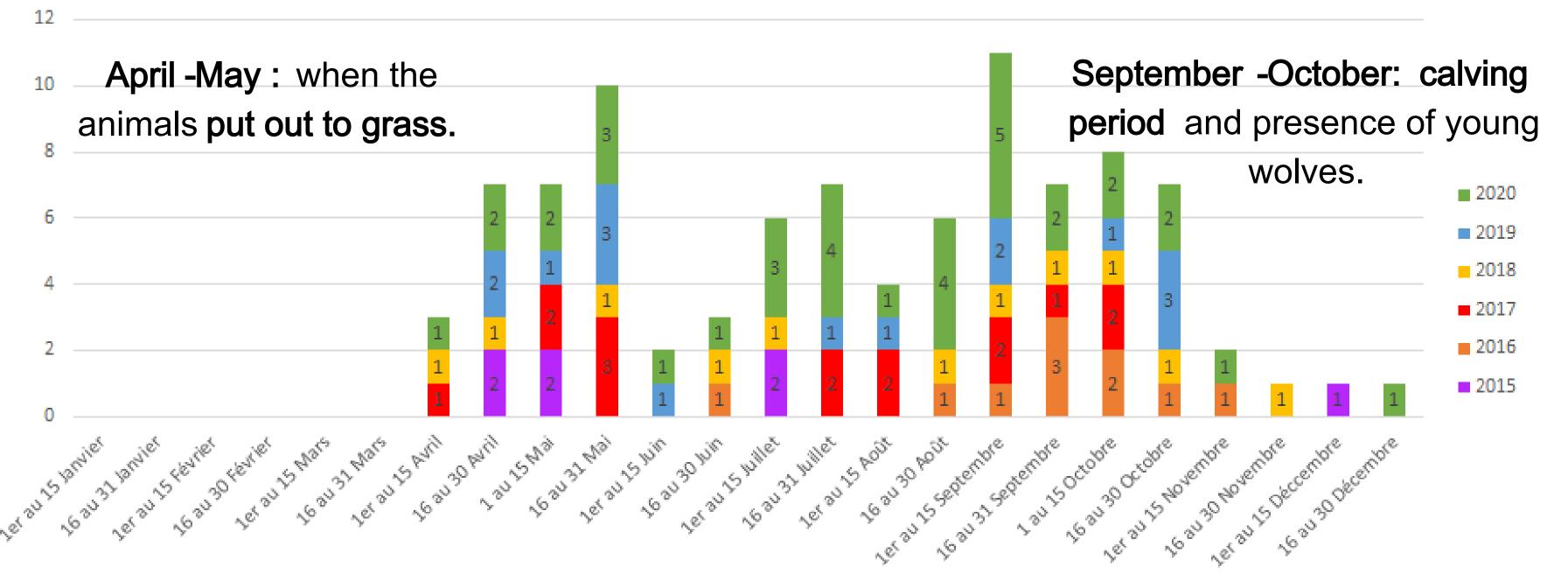


# Relatively marked seasonal variations



Two peaks in wolf predation on cattle have been observed:

Distribution of recorded damage by fortnight of the month (Savoie, Haute-Savoie, 2015-2020, 93 attacks)

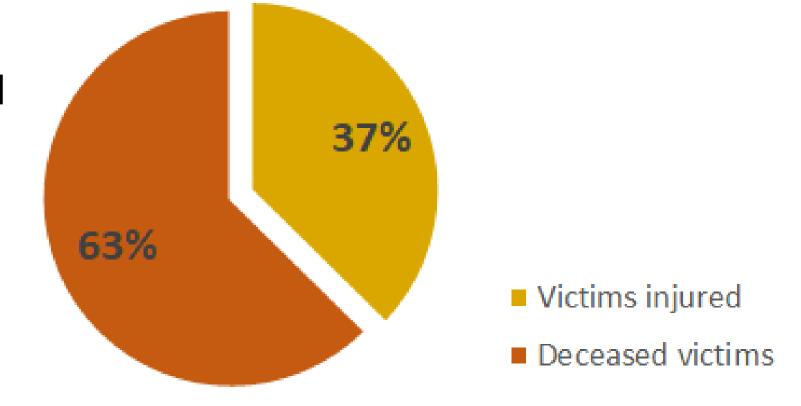


# A share of injuries to be taken into account

The damage reports do not only concern dead victims :

Percentage of deaths and injuries
(190 victims, 93 attacks, Savoie, Haute-Savoie, 2015- 2020)

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



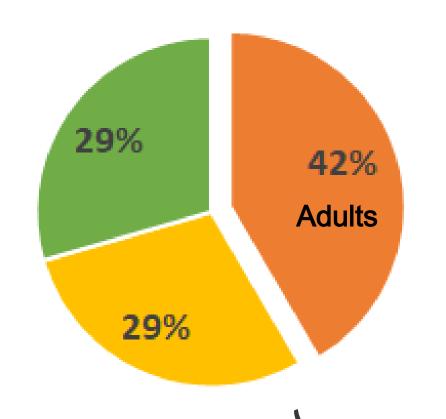
Many adults cattle are affected (71 victims, 93 attacks, Savoie, Haute-Savoie, 2015-2020)

found dead

by predation

#### Typology of victims

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

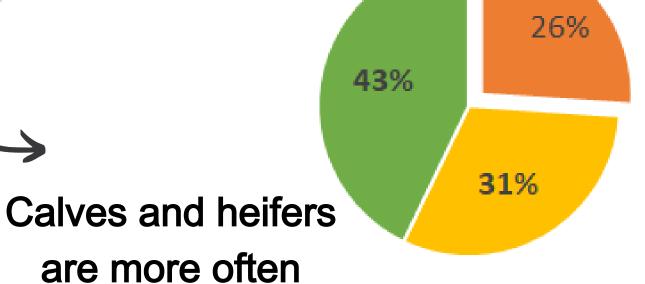


Typology of deceased victims

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

**Adults** 

68%



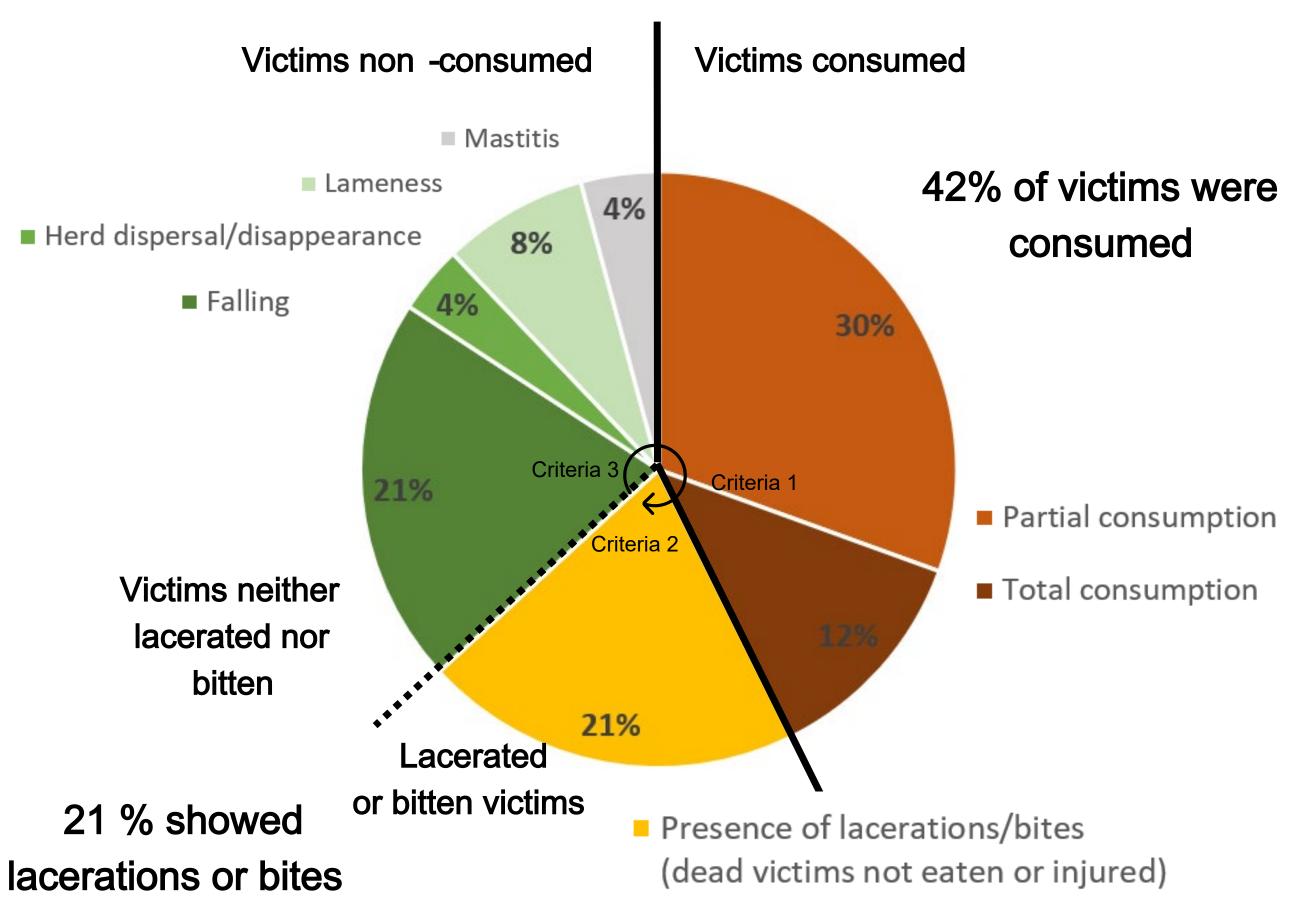
25%

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



# General characteristics of victims

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



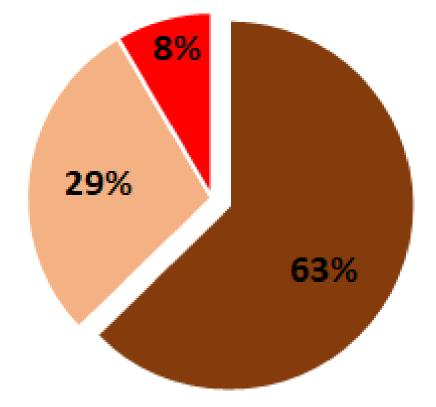


# Localization of lacerations and bites

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



on the hindquarters

on the rest of the body

on the neck only

63% with lacerations or bites on their hindquarters

