



# Incidents between Griffon Vultures and livestock: an analysis of evidence and recommendations for mitigation

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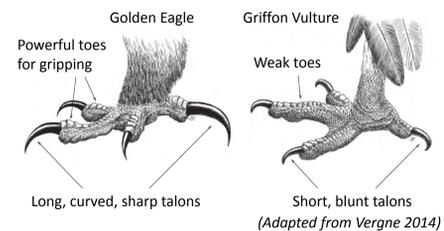
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## 1. Background

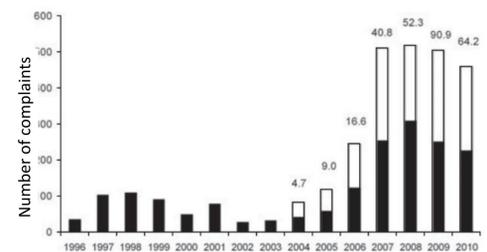
- As **obligate scavengers** vultures in the *Gyps* genus are the only terrestrial vertebrates that **feed exclusively on carrion**, playing an important role in **disposing of livestock carcasses**
- They provide essential ecosystem services by **maintaining nutrient transfer** through food webs and **limiting** the development and spread of **disease** [1]
- Griffon Vulture morphological characteristics mean that they **cannot catch or kill live prey** e.g. weak foot structure
- For millennia there has been a very close relationship between vultures and humans due to the **influence of farming and hunting on the distribution and availability of carrion** from domestic livestock and wild ungulates [2]
- The distribution, size and behaviour of vulture populations change in response to changes in land use practices and food availability
- In recent decades the frequency of reports of Griffon Vultures injuring or killing domestic livestock has increased in Spain and France but there has been very little scientific investigation into the validity of the reports**
- We review existing evidence to describe patterns, trends and underlying causes of vulture-livestock incidents in Europe and discuss potential solutions to mitigate the perceived problem**



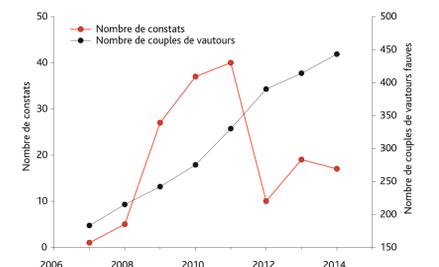
## 2. Review of existing evidence

### Patterns, trends and underlying causes of vulture-livestock interactions:

- Since the nineteenth century domestic livestock carcasses have been the main food source for vultures after wild ungulate populations were reduced across much of Europe [3]
- As farming systems became more intensive the availability of carrion decreased and carnivorous animals, including vultures, were killed to remove the perceived threat to livestock [4]
- In recent decades increased protection and intensive conservation efforts have resulted in the recovery of many vulture populations:
  - > **>200% increase in the European Griffon Vulture population in the last 30 years** [5]
- Historical reports of *Gyps* vultures eating live animals **date back >200 years** but are **very rare** [6]
  - Nearly always occurred during severe shortage of carrion and when affected livestock were wounded, sick or trapped and unable to move, particularly during the birthing period [6]
- Since the early 2000s there has been an increase in complaints about vulture-livestock incidents [5,7]
  - These incidents stimulated concern and negative perceptions of vultures among farming community, often driven by **inaccurate and sensationalist media coverage** [5, 8]
  - In NE Spain **69% of complaints were rejected** due to a lack of evidence [5]
  - The majority of cases occur during the **birthing period** (April-June) and many involve new-born calves or lambs or pregnant mothers unable to move
  - Incidents remain **very rare** e.g. ~2 confirmed cases per year out of >3,000 carcasses in Grands Causses, France, and **vultures were never the primary cause of death** [7]
- The increase in incidents coincided with:**
  - Implementation of EU regulations that prevented the deposition of livestock carcasses in the open in response to the BSE crisis, resulting in an 80% reduction in the number of carcasses available to vultures** [9]
  - Declines in traditional livestock herding practices** due to rural abandonment and economic pressures limiting the sustainability of extensive farming systems [3], resulting in less regular monitoring of livestock during birthing periods and less use of livestock guarding dogs
- Reported incidents must be responded to and investigated sensitively to reduce negative perceptions of vultures**



Margalida et al. 2014. Number of complaints about Griffon Vulture-livestock incidents in NE Spain. White bars indicate accepted complaints, numbers above bars indicate compensation (1000s EUR)



Duriez et al. 2017. Number of Griffon Vulture-livestock incidents in Grands Causses, France, in relation to the Griffon Vulture population

Contributing Factors	Recommendations for Prevention / Mitigation
Unattended animals in open fields are injured, sick or giving birth and unable to move	<ul style="list-style-type: none"> <li>Daily checks of livestock herds especially during birthing periods.</li> <li>Treatment and/or housing of sick or injured animals.</li> <li>Close attendance of animals during and after difficult birthing cases.</li> </ul>
Limited capacity for active shepherding or regular monitoring of livestock	<ul style="list-style-type: none"> <li>Investigate the use of traditional shepherd dogs to guard livestock (supported by conservation NGOs if necessary)</li> <li>Investigate the possibility of volunteer shepherds (e.g. from conservation NGOs) to check livestock herds</li> <li>Government/municipal authorities to visit farms more frequently in areas of relatively frequently reported incidents</li> <li>Request other farmers in the area to assist with shepherding duties (e.g. through vulture-friendly farming networks)</li> <li>Establish a stable, uncontaminated supply of carrion by modifying legislation to allow for the abandonment of livestock carcasses in areas where vultures are abundant</li> </ul>
Reduced carrion availability for vultures in the wider landscape	<ul style="list-style-type: none"> <li>Promote and support (financial, logistical) traditional extensive livestock grazing systems and shepherding practices at local, regional, national and continental scales</li> </ul>
Lack of awareness of vulture ecology and the ecosystem services that they provide	<ul style="list-style-type: none"> <li>Establish vulture-friendly farming networks, led by farmers, to increase knowledge of the ecology and role of vultures and promote suitable animal husbandry methods</li> <li>Target "hotspots" of potential negative vulture-livestock incidents for educational and awareness-raising campaigns</li> </ul>
Misinformation, misdirected and sensationalized media coverage	<ul style="list-style-type: none"> <li>Distribute educational materials relating to vulture ecology and feeding behaviour to media organisations</li> <li>Encourage responsible, evidence-based reporting by media organisations by emphasizing and illustrating the potential negative impacts on vulture populations, and the socio-ecological impacts, of misinformed and misdirected coverage</li> </ul>
A lack of evidence to accept or reject claims that vultures have caused injury or death of livestock	<ul style="list-style-type: none"> <li>Relevant authorities and agencies to implement rigorous, standardized procedures to investigate all reports of vulture-livestock incidents, including necropsies by qualified veterinarians or equivalent</li> <li>Records and dossiers of reported incidents are independently assessed and reported on a regular basis</li> </ul>

### References

1. De Vault et al. (2003); 2. Moleon et al. (2014); 3. Margalida & Ogada (2018); 4. Cortés-Avizanda et al. (2015); 5. Margalida et al. (2014); 6. Mundy et al. (1992); 7. Duriez et al. (2017); 8. Choisy (2013); 9. Cortés-Avizanda et al. (2010).