



Policy analysis

Impacts of pet–wildlife interactions: Bridging the gap between EU animal welfare and nature conservation laws

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ABSTRACT

Public awareness of animal conservation has evolved over time. The social approach to animal conservation is becoming increasingly polarized, with conflicting perceptions of conservation among conservationists, the public, and policymakers. While there is some overlap between the goals of animal welfare advocates and wildlife conservationists, priorities remain misaligned, especially where companion and wild animals interact. These differences in priorities and frameworks can create significant challenges when addressing conservation strategies that involve the interaction of pets and wild animals. This article examines the divergent objectives of animal welfare advocates, traditionally focused on domestic species, and those of wildlife conservation. It reviews the main impacts resulting from interactions between pets and wild animals—whether due to feralization, free-roaming, or pet walking in natural habitats—and proposes strategies to harmonize legislative approaches to these conflicts within the legal and political framework of the European Union (EU). This can be implemented by amending these directives, or through mandatory European regulations. At the same time, the incipient development of animal welfare legislation in the EU allows us to rethink how to address the impact of pets on wildlife, both from the perspective of owners' responsibility to prevent their pets from free-roaming or becoming feral, and in terms of mechanisms to reduce their impact (e.g. euthanasia). While it would be reasonable to focus on the robustness of European nature protection directives and their strict enforcement, EU member states continue to evade this responsibility. Therefore, it is essential to secure a firmer commitment from European authorities to strengthen and enforce legislation that protects wild animals from domestic ones.

1. Introduction

Public awareness of animal conservation has evolved over time. As species decline and extinction rates continue to rise, concern for biodiversity conservation has intensified. Nonetheless, the social approach to animal conservation is becoming increasingly polarized, with conflicting perceptions of conservation among conservationists, the public, and policymakers (Van Eeden et al., 2019, 2020; Boulet et al., 2021; Palmer et al., 2025). There is growing concern for animal welfare, driven by the need to minimize animal suffering caused by human activities (Feber et al., 2017).

Traditionally, the focus on animal welfare has been more closely associated with pets and farm animals than with wild ones, but the current underrepresentation of wild animals in welfare studies is fueling the emergence of a new paradigm focusing on wild animal welfare (Browning and Veit, 2023; Beaulieu, 2024). While there is some overlap between the goals of animal welfare and wildlife conservation advocates

(Dubois and Fraser, 2013), such as the prevention of harm to animals, a misalignment persists in how these harms are defined and in the prioritization of companion versus wild animals, particularly when these groups interact.

These differences in priorities and frameworks can create significant challenges when addressing conservation strategies that involve both domestic and wild animals. For instance, wildlife conservation efforts often emphasize the preservation of natural ecosystems, with a primary focus on species survival, while animal welfare advocates may prioritize the individual well-being of animals, regardless of their ecological role (Boulet et al., 2021; Palmer et al., 2025).

Certain emerging paradigms can further complicate this divergent vision of animal conservation. For example, Compassionate Conservation emphasizes that many animals are sentient, intelligent, and social beings with intrinsic value and individual well-being (Coghlan and Cardilini, 2022; Lynn et al., 2025). Animal welfare is critically important for conservation, yet compassionate conservation alone is ineffective in

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achieving this goal. Consequently, such approaches can undermine public and governmental support for conservation, given the limited understanding of conservation issues among the public (Hayward et al., 2019). This divergence in objectives can lead to conflicting policy recommendations and undermine the effectiveness of conservation programs.

Moreover, many animal welfare stakeholders perceive public governments and politicians as slow drivers of regulations, leaving room for private governance (Hårstad, 2024). This gap has encouraged animal welfare organizations to strengthen their forces in society, empowered by the lack of progress on legislation to protect domestic animals, both for farm animals and pets.

The increasing interaction between domestic animals and wild species—whether through habitat encroachment, human-wildlife conflict, or zoonotic disease transmission—highlights the need for a more integrated approach (López et al., 2023; Blanco-González et al., 2024). In particular, the growing importance of human-induced environmental changes, such as habitat loss and climate change, raises critical questions about how to reconcile the ethical considerations of animal welfare with the ecological imperatives of conservation. Therefore, there is an urgent need for a unified framework for animal conservation that balances the needs of both wild and domestic animals while addressing the complexities of their interactions.

Here I explore the potential for reconciling these divergent perspectives and propose strategies to more effectively align animal welfare and wild animal conservation objectives within the legal and political framework of the European Union (EU). Transnational regulatory consistency and the availability of directives applicable in all Member States make the EU an excellent unit of analysis for studying these divergent perspectives. The interactions between nature conservation directives and animal welfare policies and emerging legislation in the EU are reviewed. Case studies are used to demonstrate that there is a misalignment between the conservation targets of both fields and a regulatory gap in addressing the impacts of interactions between companion and wild animals, which is undermining the conservation of some threatened species.

2. The misalignment of animal conservation regulations in the European Union

There is a wide range of European legislation in force concerning nature conservation. Directives to conserve biodiversity are long-standing, and have contributed to the strict protection, firstly of bird species (Directive 2009/147/EC, initially adopted in 1979) and subsequently for other animals and plants (Habitats Directive 92/43/EEC). Nevertheless, legislation on animal welfare relating to companion animals is still in its incipient stages.

The treaty on the Functioning of the EU (2016: Article 13) recognizes that animals are sentient beings and stipulates that Member States shall consider animal welfare requirements in formulating and implementing the Union's agriculture, fisheries, transport, internal market, research and technological development and space policies. Given the activities and policies mentioned above, it is clear that the legislators were not thinking about wildlife.

The lack of animal welfare legislation has encouraged the proliferation of independent bodies (Feber et al., 2017). In Europe, the European Forum of Animal Welfare Councils (EuroFAWC) oversees animal welfare councils. Significant gaps in EU legislation and policy on animal welfare are evident. The lack of a general law has led to several priorities for the development of new legislation in the EU (Broom, 2017). In 2020 the European Commission (EC) promised to revise the EU's animal welfare legislation to align it with scientific evidence and citizen demands. The latest Eurobarometer survey shows a high level of support for stricter animal welfare legislation across EU citizens, and 74 % of respondents consider that the welfare of companion animals in their country should be better protected than it is now (European

Commission, 2023a). There are many differences in animal welfare standards between EU countries and the EC wants to harmonize them. The EC has therefore started reforms in the farming and pet sectors, introducing minimum standards for the breeding, housing, care, traceability and treatment of cats and dogs.

Animal welfare has been linked only to domestic species, leaving wild ones to environmental legislation (Broom, 2017). Nevertheless, there are no European regulations that address the issues arising from the interaction between companion animals and wild species. And this is the cornerstone of the controversy: What happens when pets cause damage to wildlife? (Fig. 1).

More than six in ten Europeans are in regular contact with companion animals in their daily lives, around 44 % of all households in the EU have a companion animal, and over 90 % are dogs or cats (European Commission, 2023b). There is a growing tendency to incorporate pets into our homes, which has been exacerbated by the COVID-19 pandemic. Indeed, the European pet population is estimated to grow by 11 % in 2022 reaching 340 million, mostly cats (127 million) and dogs (104 million) (Data from the European Pet Food Industry Federation, FEDIAF). This pet boom has increased the number of dogs and cats roaming outdoors, amplifying conflicts with wild animals.

The challenge that authorities face is to balance this social demand with nature conservation. But this challenge calls for the adoption of a consensus in our understanding of the harm that pets may cause to wild animals and the need to reconcile environmental and animal welfare laws.

3. Insights into the misalignment between animal welfare and wild animal conservation

This section focuses primarily on dogs and cats because (i) they represent the majority of companion animals in EU households, (ii) the scientific literature on their impact on wildlife is extensive, and (iii) they have been repeatedly mentioned in EU policy debates. Parrots are also used as illustrative case studies because they represent paradigmatic examples of how companion animals become feral and turn into invasive species that are difficult to eradicate due to the socio-environmental conflicts involved in their control.

3.1. Pets that became feral

Pet abandonment in urban and natural areas has led to the establishment of feral populations worldwide ("feral" describes formerly domestic animals that have established self-sustaining wild populations). Parrots are among the world's leading pet birds. The intelligence and innovativeness that has motivated their use as pets has also driven their successful establishment outside households following constant escapes and releases (White et al., 2019; Hernández-Brito et al., 2022; Romero-Vidal et al., 2023). The European Alien Species Information Network recognizes 11 alien parrot species in the EU, and the Ring-necked Parrot (*Psittacula krameri*) is listed as one of the 100 worst invasive alien species (IAS) in Europe but remains unlisted on the List of IAS of Union concern (Regulation (EU) 1143/2014).

While there is a consensus to consider parrots as invasive species, their management represents a complex socio-environmental conflict (Luna et al., 2019; Pirzio-Biroli et al., 2024). Parrots are charismatic species primarily found in urban areas, but there is evidence of a decline of some native species threatened by competition for breeding sites or by aggressive interactions (Hernández-Brito et al., 2014, 2018). While conflicts with agriculture and wildlife conservation exist (White et al., 2019), most parrot control initiatives fail because of opposition from a non-representative sector of citizens (Crowley et al., 2019).

Cats are at the forefront of concerns about feral pets. Domestic cats are considered one of the most damaging invasive predators for wild animals, causing around 25 % of contemporary extinctions of reptiles, birds, and mammals worldwide (Doherty et al., 2016). Under

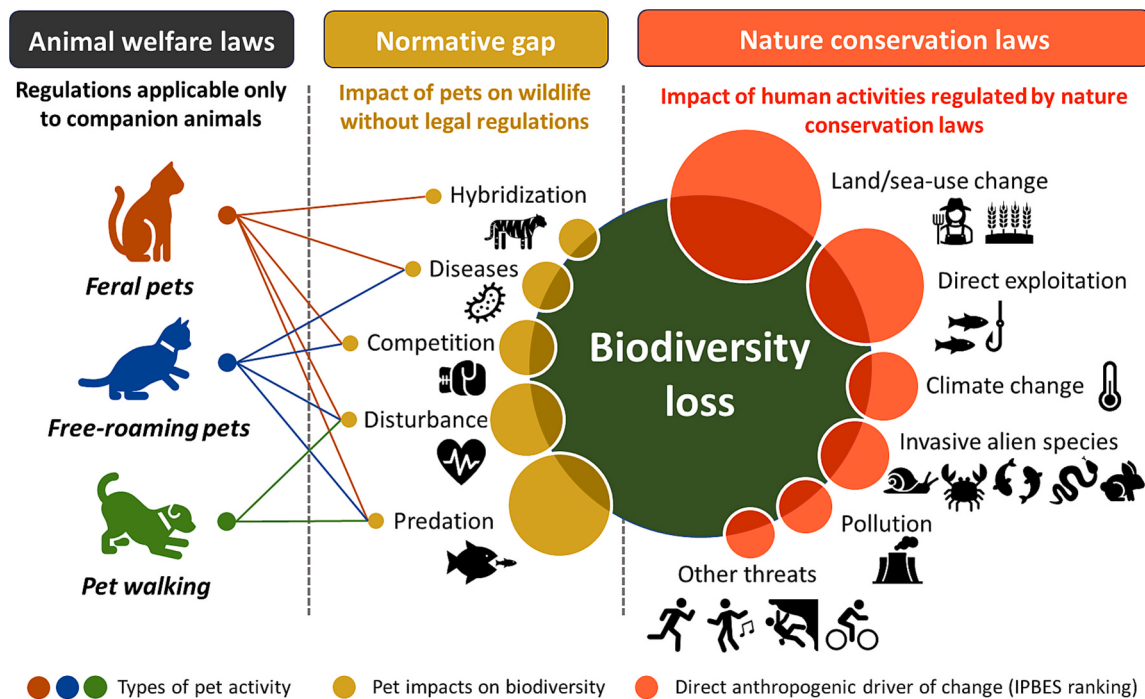


Fig. 1. Conceptual framework of pet–wildlife interactions according to the origin and activity of pets in nature. The upper section illustrates the legal categories governing the protection of companion animals (left) and nature conservation (right). In the center, circles represent the relative impact of direct anthropogenic drivers on biodiversity loss, with the scale of importance derived from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) ranking (Purvis et al., 2019) for impacts regulated by nature conservation laws. Note that concerns related to pet–wildlife interactions (amber circles) are subject to a normative gap. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

international law—including the Convention on Biological Diversity, the Convention on Migratory Species, and the World Heritage Convention—many national authorities around the world are required to adopt and implement policies to prevent and mitigate the impacts of free-roaming domestic cats on biodiversity (Trouwborst and Somsen, 2020). However, authorities consistently fail to enforce these legal requirements, often citing ethical concerns, feasibility issues, and, inexplicably, scientific uncertainty. Although feral cats meet all criteria to be classified as an invasive species, authorities have largely avoided acknowledging this designation. While the EU possesses the legal framework to address this issue—most notably through the 2014 EU Regulation 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species—it is evident that European authorities currently lack the political commitment to include cats on the invasive species list.

3.2. Free-roaming pets

Free-roaming dogs—those not restrained or under direct human control, whether owned or unowned—are estimated to constitute approximately 75 % of the global dog population, which may exceed 700 million. Most research on dog–wildlife interactions has focused on two major impacts: predation and disease transmission (Hughes and Macdonald, 2013; Doherty et al., 2017). Nonetheless, despite the growing interest on these interactions, few solutions have been proposed to address the conservation challenges posed by free-roaming dogs (Young et al., 2011; Doherty et al., 2017).

Conversely, domestic cats represent the cornerstone of discussions about how to manage the impact of pets on wildlife. Indeed, free-roaming cats (domestic or stray) play a key role in the defaunation of their home ranges (Loss et al., 2013). On the one hand, free ranging movement of owned cats’ compromises biodiversity surrounding inhabited areas (Lepczyk et al., 2023). While owners of domestic cats are responsible for wild animal mortality caused by their pets, there is a

manifest difficulty in verifying and prosecuting these crimes that begin and end within homes. Furthermore, the authorities are unlikely to legislate to limit this freedom of cat movement, which perpetuates the problem. In the absence of binding legislation and willingness to control, cats have become a major cause of wild animal mortality worldwide (Trouwborst and Somsen, 2020).

On the other hand, opportunities for legal regulation are expanding for cats managed by government agencies or specific animal-welfare organizations. Human subsidies keep cats at high densities near inhabited areas, resulting in high predation pressure (Cove et al., 2023). Consequently, stray-cat colonies represent one of the main wildlife conservation issues, especially when they are in natural areas near bird breeding colonies or sensitive habitats for endangered species. While the responsibility of the authorities appears to be clearer here, their management is compromised by the polarization of society about cat control.

Divergent perspectives on assessing the impact of domestic cats in European Union countries have led to disagreement between conservation biologists, managers, animal welfare groups, and the public. The conflict centers mainly on control methods, which determines the management approach to stray-cat colonies and even the lack of control measures while the debate is ongoing.

At this stage, the management of stray dog and cat populations does not fall within the competencies of the EC. Member States are responsible for this management, leading to a wide variety of approaches to manage the same problem across the EU, ranging from removal of animals to Trap-Neuter-Return (TNR) programs. TNR involves trapping stray cats, spaying or neutering them, and then releasing them into the environment, usually in the same place where they were captured. Such programs aim to slowly reduce cat populations over time, but scientific evidence has shown that instead of reducing stray cat populations, colonies persist and may even increase in size (Longcore et al., 2009). Considering that the TNR method has proven to be expensive and inefficient in reducing the stray cat population in the short term, some authors suggest that unowned cats can be effectively controlled by

intensive adoption and responsible euthanasia when necessary (Gunther et al., 2022; Calver et al., 2023).

Notwithstanding the scientific evidence opposing the TNR method, governments are betting on more popular measures, that are aligned with sentiments towards cats as sentient beings, to the detriment of wildlife. For instance, in 2023 the Spanish government approved the animal welfare law, which establishes the TNR method as the only viable alternative for the control of stray-cat colonies, despite widespread opposition from scientists (Carrete et al., 2022).

Bearing in mind that there are international conventions that provide protection for migratory species, and that many of these species (mainly birds and bats) are heavily preyed upon by free-roaming pets, a common approach to this impact would be required across countries that share the flyways of these species.

The EU Birds and Habitats Directives impose key obligations, particularly regarding Natura 2000 sites and species protection, with

significant implications for managing free-ranging domestic cats. The Nature Directives require EU Member States to prohibit and effectively prevent cats from roaming freely outdoors to mitigate predation and disturbance to wild animals. Accordingly, national authorities should inform the public of this restriction or implement additional legislation explicitly banning free-roaming cats (Trouwborst and Somsen, 2020).

3.3. Pet walking in nature

Dog-walking has become one of the most widespread daily leisure activities. Dog owners want to share their spare time with their pets, so their well-being is a priority when deciding on destinations and outdoor activities. With 25 % of EU households owning at least one dog, interest groups, including the pet industry and welfare organizations, have advocated for greater social accommodation of companion animals in the private sector (pet-friendly establishments), but also in public spaces



Fig. 2. Examples of interactions between domestic and wild animals. (a) A dog walking on a beach where dogs are prohibited; (b) a male Kentish plover appearing to hide from an off-leash dog on a breeding beach; (c) a stray dog captured by a camera trap roaming along a dry Mediterranean watercourse; (d) Monk Parakeets (*Myiopsitta monachus*) nesting in a semi-urban environment in a Mediterranean village; (e) and (f) camera trap images showing a Black-winged Stilt (*Himantopus himantopus*) chick and a cat shortly after coming from an illegal cat colony located within the Albufera de Valencia Natural Park reserve area. Black-winged Stilt pair lost three of their four chicks within a few days at this location. All images were captured in Mediterranean coastal ecosystems in Spain. Images credit: Miguel Ángel Gómez-Serrano.

(Weston et al., 2014). A good example of this trend is the growing popularity of dog-friendly beaches. This type of management is probably good for the health of pets and their owners, but not for wild animals (Comber and Dayer, 2022). While it would make sense to locate these dog-friendly beaches in urban environments, because of better accessibility from homes, dog-friendly beaches tend to be located on natural sites away from urban areas to reduce disturbance to other beach goers (Weston et al., 2014; Schlacher et al., 2015). Not surprisingly, these natural beaches are home to a very specialized fauna, often exclusive to this coastal ecosystem (Defeo et al., 2009), triggering tensions between leisure and wildlife stakeholders.

Breeding birds will once again be at the forefront of this conservation conflict. Beach-nesting birds locate their nests directly on the sand. Plovers (*Charadrius* and *Anarhynchus* genera), for instance, nest in open habitats such as the dry beach to maximize predator detection (Gómez-Serrano and López-López, 2014), which leaves the nests highly accessible to dogs. Obviously, most domestic dogs do not prey on eggs, but their instinct may lead them to capture chicks when moving along the beach to feed or flee from disturbance. Indeed, most beach-nesting shorebirds bring their chicks to feed on the shore, where their main food source is located, and it is here that the main conflicts with recreational uses occur. Nevertheless, the non-lethal effects from the presence of dogs on beaches are also important (Fig. 2). For instance, plovers see dogs as potential predators, which causes them to stop incubating their nests more frequently than when they are disturbed by people walking (Gómez-Serrano, 2021).

One of the main concerns of policymakers and managers is encouraging coexistence between recreation and wildlife (Carter et al., 2012). Logically, coexistence is possible, as demonstrated by many successful models based on spatio-temporal separation of uses. On many beaches, fences are installed to separate recreational activities from bird nesting areas. This keeps people away from the most sensitive areas, and birds can become habituated to the non-lethal stimulus of human presence. The same is not true for dogs. Their erratic behavior stimulates defensive responses from birds and premature abandonment of incubation tasks. Leashing dogs seems to be a good measure to reduce roaming and control these harmful effects. But dog owners highly value walking their dog off-leash, which explains why studies on dog disturbance report high rates of non-compliance with dog leash laws and other regulations (Williams et al., 2009; Miller et al., 2013; Weston et al., 2014).

But beyond the Dog-friendly authorized beaches, the real concern is that off-leash dog walking in prohibited areas is growing on beaches worldwide, and although there are legal restrictions in many countries, there is little commitment from the authorities to enforce these regulations (Schlacher et al., 2015; Schneider et al., 2020). Indeed, surveys reveal that dog owners are aware of the regulations, but do not feel the obligation to comply with them if there is no strict surveillance (Weston et al., 2014; Comber and Dayer, 2022).

The European Commission has an important task here, to encourage Member States to prevent the decline of coastal birds linked to increased dog-walking in their breeding, feeding and resting areas. One way to do this would be to ban dog-walking and dog-friendly spaces within Natura 2000 protected areas (SPAs and SACs), implementing regulations that would require their application to be extended to all European Union member countries. Action is needed to prevent the only wild animals we observe on our nature walks will be our own pets.

4. Conclusion

National authorities worldwide are required, under international law, to implement policies aimed at preventing, reducing, or eliminating the impacts of pets on biodiversity. Particularly relevant to this objective are obligations related to protected areas, protected species, and the control of invasive alien species. However, factors such as scientific uncertainty, the feasibility of control measures, resistance from pet owners, and ethical considerations can hinder the implementation of

these policies. From a legal perspective, such challenges offer limited justification for noncompliance with international wildlife law (Trouwborst et al., 2020).

The European Union has additional legal instruments, such as nature conservation directives, to enhance legal certainty regarding the regulation of pet-related impacts on wildlife (Trouwborst and Somsen, 2020). These instruments present an opportunity to develop transnational strategies that could improve biodiversity conservation at a continental scale. This can be implemented by amending these directives, requiring member countries to develop legislation that allows them to achieve a common goal, or through mandatory European regulations. However, European authorities have so far adopted a cautious approach (e.g. not including feral pets in the List of Invasive Alien Species of Union concern), limiting the effectiveness of these legal tools in addressing this conservation challenge comprehensively.

At the same time, the incipient development of animal welfare legislation in the EU allows us to rethink how to address the impact of pets on wildlife, both from the perspective of owners' responsibility to prevent their pets from free-roaming or becoming feral, and in terms of mechanisms to reduce their impact (e.g. euthanasia).

As biodiversity declines and pet populations rise in European households, the conflict between wildlife conservation and animal welfare advocacy intensifies. Urgent action is needed to reconcile these differing perspectives and align their respective legal frameworks. A stronger commitment from European authorities is essential to strengthen and enforce legislation that protects wild animals from their unexpected domestic travel companions.

CRedit authorship contribution statement

Miguel Ángel Gómez-Serrano: Writing – review & editing, Writing – original draft, Visualization, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

I have nothing to declare.

Data availability

No data was used for the research described in the article.

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