



Letter to the Editor

Dogs and Cats Put Wildlife at Risk

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Populations of domestic dogs and cats are increasing worldwide and affecting ecosystems (Medina et al. 2011, Hughes and Macdonald 2013), which is especially relevant when they live near protected areas (Lessa et al. 2016). Free-ranging dogs and cats interact with wildlife in several ways through predation, harassment, disease transmission, or hybridization. They can also compete with wildlife by reducing the availability of prey or by altering activity patterns through interference (Hughes and Macdonald 2013). Most of the time these interactions are negative for wildlife, which lead dogs and cats to be considered the cause of more than half of the global extinctions of bird, mammal, and reptile species (Medina et al. 2011, Doherty et al. 2017). Regrettably, despite the fact that these effects have been studied around the world, the presence of free-ranging dogs and cats near protected areas is not perceived as an important problem for most people and policy makers (Schüttler et al. 2018).

One example of this problem is happening in northwestern Argentine Patagonia. This geographical area is one of the most pristine sites in the world, including important protected areas such as Nahuel Huapi and Lanín national parks, which cover approximately 12,000 km² of land under protection. These national parks protect several species of conservation concern such as the near threatened Andean condor (*Vultur gryphus*), monito del monte (*Dromiciops gliroides*), and southern pudu (*Pudu puda*), and the endangered Patagonian huemul (*Hippocamelus bisulcus*; International Union for the Conservation of Nature [IUCN] 2018). Human density in this area is low (1–5 inhabitants/km²), but surrounding or even inside these protected areas, there are important human settlements such as San Carlos Bariloche with 140,000 inhabitants (Instituto Nacional de Estadística y Censos [INDEC] 2010), and other smaller villages from where effects associated with free-ranging dogs and cats spread.

These urban sites present owned free-ranging dogs and cats that have been responsible for several wildlife deaths. Worryingly, in some sites of Bariloche there are 2.2 dogs/house and 55% are free-ranging (Garibotti et al. 2017), reaching potentially a minimum of 50,000 free-ranging dogs in the entire city according to the total number of houses reported (41,976; INDEC 2010). Similarly, in San Martín de los Andes (35,787 inhabitants; INDEC 2010) 5,480 dogs were reported and 39% were free-ranging (Brusoni et al. 2007). Cats reach similar figures in those cities. Cats are attacking and putting predation pressure on native species (Seijas 2018). Recently, ≥4 southern pudu and 1 huemul died from dogs attacks in Nahuel Huapi National Park (Seijas 2018).

The authorities and policy makers of some urban sites surrounding these national parks are not developing effective programs to mitigate the effects generated by free-ranging dogs and cats. Neuter programs are not enough, and most dogs are not neutered (~40–55%; Brusoni et al. 2007, Garibotti et al. 2017). For some officials, neutering cats is not a priority. Additionally, there is little control on the health status of dogs and cats and parasite control is low (Brusoni et al. 2007, Garibotti et al. 2017). Regrettably, this is not an exclusive problem of Patagonia but of many regions in the world (Lessa et al. 2016).

We call on the local authorities and policy makers to enforce existing laws, particularly laws to ensure that owned free-ranging dogs and cats be kept within the property limits of their homes. It is also important to develop more effective neutering programs for dogs and cats that are free of charge to reduce their populations in all urban sites surrounding protected areas. We also suggest controlling the health status of dogs and cats, especially to control parasites and reduce potential transmission to native wildlife (Hughes and Macdonald 2013). The implementation of color collars with bells to diminish predation success (Gordon et al. 2010) should be mandatory in cats, but more alternatives for dogs and cats are being developed and need to be updated. Additionally, educative actions encouraging homeowners to keep dogs and cats within property limits to reduce their negative impacts on wildlife are necessary. It is time to minimize the threat of domestic dogs and cats to benefit

Received: 7 December 2018; Accepted: 16 December 2018

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biodiversity in the world, especially in sites where this problem is not well recognized like in Patagonia. If current programs are not working, we should be creative and enforce the existing policies to solve this threat.

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