



Disease threats to the endangered Iberian lynx (*Lynx pardinus*)

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Abstract

The Iberian lynx, (*Lynx pardinus*), is the most endangered felid in the world. To determine whether sympatric carnivores are reservoirs of pathogens posing a disease risk for the lynx, evidence of exposure to 17 viral, bacterial and protozoan agents was investigated in 176 carnivores comprising 26 free-living lynx, 53 domestic cats, 28 dogs, 33 red foxes (*Vulpes vulpes*), 24 Egyptian mongooses (*Herpestes ichneumon*), 10 common genet (*Genetta genetta*) and 2 Eurasian badgers (*Meles meles*) in the areas inhabited by the last two populations of Iberian lynx, both in Andalusia (South-Western Spain).

The results indicated that the lynx had low rates of contact with viral pathogens, with one seropositive finding each for feline leukemia virus, parvovirus and canine adenovirus-1, whereas contact with bacteria and protozoa appeared more frequent. Active infections with parvovirus, *Ehrlichia* spp., *Mycobacterium bovis*, *Leptospira interrogans* and *Cytauxzoon* spp. were confirmed. In contrast, 53% of the domestic cats were exposed to some infectious agent (prevalence range 4.5–11.4%). Antibodies to canine distemper virus and parvovirus were frequently found in dogs (32% and 42%, respectively) and foxes (30% and 12%). Past or present infections with parvovirus, *Ehrlichia* spp., *Chlamydomphila* spp., *M. bovis*, *Salmonella enterica*, *L. interrogans*, *Toxoplasma gondii*, and *Neospora caninum* were also detected in these and other species surveyed.

Questionnaires to owners revealed that 14% of the dogs but none of the cats had been vaccinated, and no cat had been neutered. Based on the apparent absence of acquired immunity of the lynx against infectious agents, the frequent detection of agents among sympatric carnivores, and the reported lack of immunocompetence of the Iberian lynx, a disease outbreak among the local abundant carnivores may pose a serious disease risk for lynx conservation.

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Introduction

Epidemics can be a serious conservation threat for free-living populations of endangered species (Thorne and Wil-

liams, 1988; Roelke-Parker et al., 1996) and can cause mortality, reduce host fitness and/or alter dispersal and movement patterns of infected animals (Scott, 1988). As any of these outcomes may have dire consequences for the persistence of small populations, monitoring the prevalence of disease should be a priority in conservation (Scott, 1988).

Menaced species are less likely to sustain infectious agents because intra-species interactions are infrequent,

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