

Health status of the endangered guigna (*Leopardus guigna*) in the Chilean temperate rainforest

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The guigna (*Leopardus guigna*) is one of the world's smallest wild cats and has one of the most restricted distributions known for felids, occupying a narrow strip within the temperate forests of south-central Chile and adjacent areas in Argentina (30-50°S, 70-75°W). The guigna's diet, made up mainly of small mammals, makes this felid a top predator by controlling the population of some plague rodents. Having a strong preference for native temperate rainforest, habitat loss is considered as one of the major threats for the cat. Considering the progressive encroachment of human settlement into particularly highly fragmented landscapes, it is necessary to conduct more research about potential emergent risk factors affecting survival, reproduction, dispersal and distribution of guignas, such as infectious and parasitic diseases exposure. Pathogens transmission from domestic dogs and cats living within the local communities close to the guigna's natural habitat could be a new threat to the viability of this felid species. Our main goal is to understand the unknown health status of guigna populations and potential diseases transmission from domestic carnivores in a fragmented forest landscape in the Araucanía district of South-Central Chile, representing the still barely studied northern pre-Andean distribution of this species. . The second aim of this project is to involve local people in on-site public awareness campaigns to highlight the importance of responsible pet tenure and its implication to native carnivore conservation. An integration of the knowledge about this cryptic endemic felid and outreach initiatives to explain wildlife-domestic animal issues are an urgent priority to reinforce decision making process of regional conservation and management efforts to protect threatened and endangered species.

The project will generate original scientific data about wildlife and ecosystem health issues in a poorly studied eco-region as the Chilean Temperate Rainforest, where the progressive habitat loss and fragmentation has increased human/domestic animals encroachment into native forested area, affecting carnivore assemblages. The main project outcome is a veterinary description of the health status of guignas in a fragmented rainforest landscape which elucidates pathogen transmission from adjacent domestic carnivore populations. Evidence of wildlife infectious and parasitic diseases transmitted by dogs and cats could become a new emergent risk for the conservation of this endemic felid, thus, this project highlights important variables to incorporate in future assessments of the long-term survival of guigna populations. As a next step this project involves local communities in public awareness campaigns focused on the problems associated with wildlife-dogs/cats interactions, especially regarding endangered species, and derived from irresponsible pet tenure. An intensive educational-outreach program, aimed to children and farmer families, establishes a tool to explain the epidemiological impacts of pets in native carnivores, species of high ecosystem value as rodent controllers, and how these problems can be avoided adopting cost-effective measures. Diverse guidelines about good management practices are given (i.e. keeping pets away from free roaming). The Chilean Agriculture and Livestock Service and other governmental organizations are invited to join the outreach program, thus fostering opportunities to create policy that excludes domestic animals from critical wildlife habitats. The application of scientific findings to management and enhanced public outreach programs will facilitate recovery and maintenance of wildlife populations.