Habitat fragmentation a bigger threat to Chile's güiña wildcat than persecution by humans

January 16 2018

Güiña. Credit: Jerry Laker

Research by conservationists at the University of Kent has found that habitat fragmentation, and the subdivision of large farms into smaller

ones, are the biggest threats facing the güiña wildcat in Chile.

This forest living cat is surprisingly tolerant to deforestation and direct killing by people as retaliation for lost livestock (poultry) is not common, according to findings published today in the *Journal of Applied Ecology*.

The güiña has been in decline for many years, with its population estimated to be fewer than 10,000 individuals, and it has been listed as Vulnerable on the IUCN Red List since 1996.

The güiña has a reputation for attacking livestock and, therefore, is perceived negatively by rural inhabitants in the region. As a result, it had been assumed that a major threat to the future of the güiña was human persecution, coupled with extensive farming and logging that has seen its habitat reduced by almost 70% since 1970.

However, through a series of questionnaires, camera trap data and remote-sensed images the researchers, led by Nicolas Galvez studying at the Durrell Institute of Conservation and Ecology (DICE), found that the güiña is remarkably adaptable to forest loss.

In particular the team found that large, intensive agricultural areas are actually well suited for the güiña and should not be dismissed as poor quality habitat. This is because there are often unfarmed areas that provide refuge, food resources and suitable conditions for rearing young.

Dr. Nicolas Galvez, now a lecturer at the Pontificia Universidad Católica de Chile, commented: "Land subdivision and fragmentation have a far bigger impact on güiña survival. This is because there is a higher risk of human interaction and persecution in areas where there are more farms, a greater pressure on natural resources through increased timber extraction and livestock grazing, and even competition for food from domestic animals kept as pets."

Professor Zoe Davies, from DICE at Kent, said: "Notably, though, while the risk of a güiña being killed by a human is higher in more densely populated farming areas, our questionnaires indicate that only 10% of the rural inhabitants have killed a güiña over the last decade. This suggests that persecution is much less of a threat to their survival than the subdivision of farms."

As a result of this, the researchers suggested that farmers with large properties are key stakeholders in the conservation of this species and must be at the centre of any conservation interventions that aim to protect existing land where the güiña is usually found.

The findings also highlight a framework that can be used to spatially match social and ecological data which could help with conservation efforts for other similar small to medium sized carnivores in other parts of the world. The framework provides a clearer understanding of how habitat loss, land fragmentation and human interactions affect species survival.

Other academic institutions involved in the research were: the Pontificia Universidad Católica de Chile and the university´s Centre for Local Development (CEDEL-UC), University of Melbourne, Bangor University, Helmholtz Centre for Environmental Research in Germany and the Wildlife Conservation Research Unit (wildCRU) at University of Oxford.

More information: Gálvez N, Guillera-Arroita G, St. John FAV, Schüttler E, Macdonald DW, Davies ZG. A spatially integrated framework for assessing socioecological drivers of carnivore decline. J Appl Ecol. 2018;00:1–13. DOI: 10.1111/1365-2664.13072

Provided by British Ecological Society