Cat Project of the Month – June 2009

The IUCN/SSC Cat Specialist Group's website (www.catsg.org) presents each month a different cat conservation project. Members of the Cat Specialist Group are encouraged to submit a short description of interesting projects

Connecting biological and socio-cultural dimensions of conservation: a strategy to engender positive attitudes towards the kodkod cat, within rural communities in Southern Chile

Detail from a poster inviting the public to get to know more about the kodkod cat (Photo F. Vidal).

We are working to inform rural communities in Southern Chile about the kodkod - helping those best placed to influence the species' future conservation to appreciate its unique value within the context of its temperate rainforest habitat. Our approach combines ecological research with intergenerational environmental education in the Andean foothills.

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Felipe Hernández (left) and Nicolas Gálvez at a winter sampling site.

Background

The kodkod, known locally as the *guiña*, is one of the world's smallest cats, considered by the IUCN to be "Vulnerable with a declining population trend". Habitat loss and retribution killing are considered the main conservation threats. The kodkod cat has a strong preference for native temperate rainforest, with dense understory and watercourses (Acosta & Simonetti, 2004). Various land management practices, related to agriculture and forestry, have affected its forest habitat. In addition, research shows that protected areas in Chile are not sufficient to assure long-term conservation of this species (Simonneti & Mella, 1997, Acosta et.al. 2003). Conservation-orientated educational campaigns and research in non-protected areas are a priority.
Conflict between kodkods and farmers in rural areas of Chile has left a negative image, supported by personal experience or stories of poultry predation (Sanderson et al. 2002, Silva et al. 2007). A common anecdote is of a farmer killing the kodkod inside the chicken coup. Through time, negative rural attitudes have influenced perceptions of the species at a national level, even in urban areas where people have no personal contact, or even know that this feline exists (!). In fact, the name güiña in common parlance refers to someone who is a fast and effective thief.
Research efforts to date have studied kodkod in the coastal VII and X Regions of Chile (Dunstone et al. 2002, Sanderson et al. 2002, Acosta & Simonetti 2004). This is the first effort to understand more about the Güiña populations in the Andean Araucanía (IX Region).


Camera trap photo of a spotted kodkod cat in Huerquehue National Park from a camera set up during a park ranger training course. (Photo N. Gálvez).

Goals

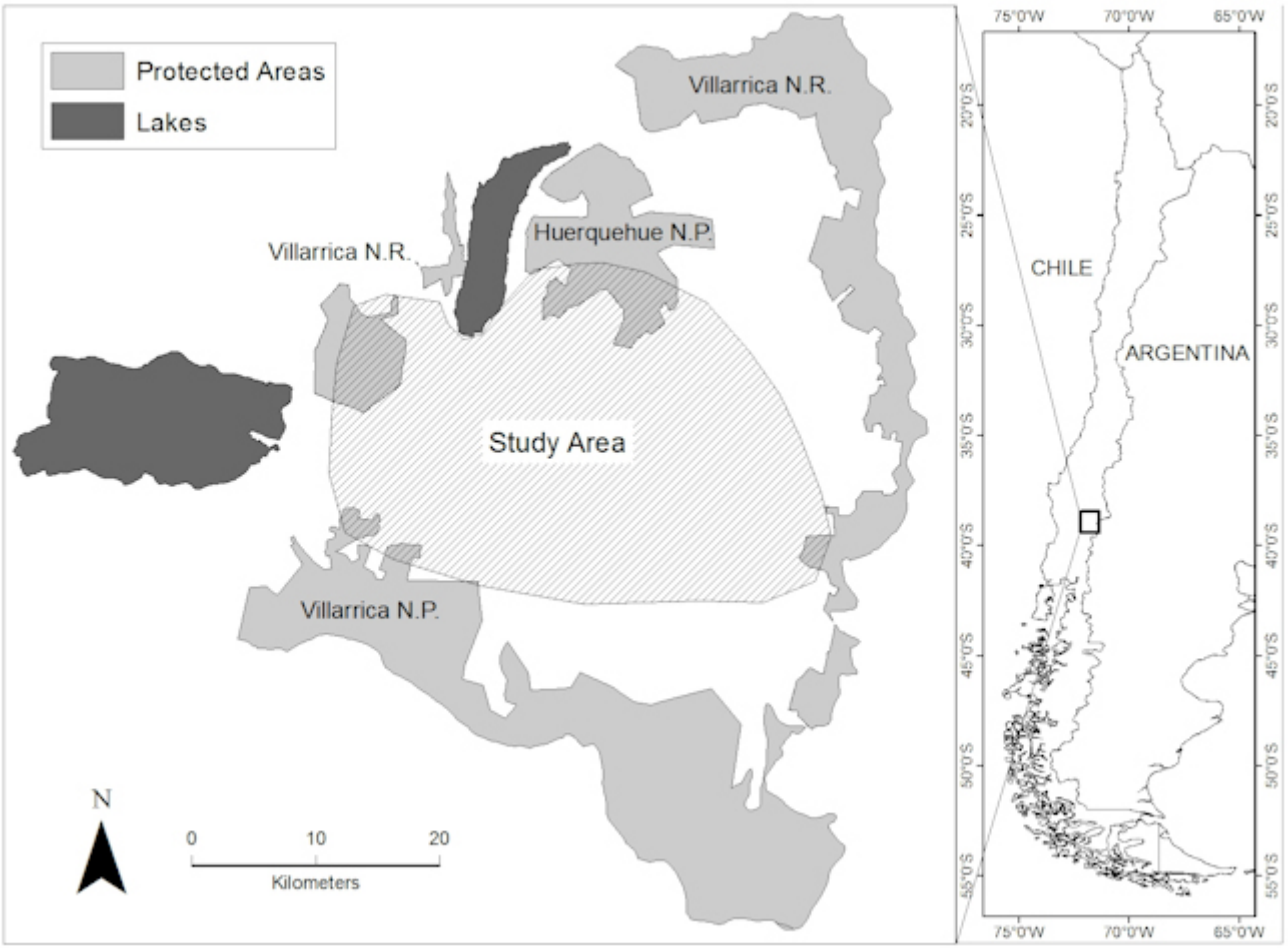
Our overarching goals are to understand more about the species' distribution and habits, mitigate habitat degradation in private lands, motivate farmers not to retaliate against the species and expose rural children to some positive messages about the value of the species.

The specific objectives are:

- Explore species-landscape relationships.
- Evaluate Occupancy parameters and models.
- Establish a long term monitoring network.
- Evaluate local knowledge and perceptions.
- Train young "Ambassadors" for the Güiña.
- Hold workshops with local communities.
- Develop and distribute innovative outreach material.

Study Area

Our study area, in the pre-Andean zone of the Araucanía district of southern Chile (IX region), represents the northern limit of the temperate rainforest in Chile (39º15´S, 71º48´W). The landscape is characterized by farmed lowland valley, surrounded by lakes, volcanoes and forested mountains. Our research and educational programme are being conducted in sites peripheral to the National Protected Areas System.



Our study area in the Pre-Andean zone of the Araucanía district of Southern Chile is surrounded by the main protected areas of the Region; Huerqueque National Park (NP), Villarrica NP and the Villarrica National Reserve (N.R.).

N. Gálvez at a continuous forest study site. The typical landscape of pre-Andean valleys of the Araucanía. Cameras were set up in forest habitats surrounding these valleys (Photo J. Laker).

Fragmented native woodland patches in the lower land agricultural matrix of our study area (Photo N. Gálvez).

Methods

Güiña ecology

Pilot studies with camera traps began in 2006. A final sampling design for the kodkod was established during 2008/early 2009 (i.e. summer) with 27 permanent camera sites, at a minimum distance of 2 km that summed a total of 6400 camera trap nights. We classified two landscape classes:

1) Native continuous forest (n=18 sites) and
2) fragments of native forest in the agricultural matrix (<20há; n=9).

We are obtaining detection-non detection data from sampling occasions set at 10 day intervals. We are exploring occupancy models for the area with landscape and habitat variables.

Melanistic individual of *L. guigna* at a continuous forest site. At this site we have records of melánic and spotted individuals suggesting home range overlap that has been described in previous studies.(Photo N. Gálvez).

One of the five workshops with committees of small farmers in our study area (Photo F. Hernández).

Educational approach

The educational strategy involved a three step process. First a selected group of children (10-12 years old), from 8 rural schools, and local ecotourism guides were trained as "Ambassadors" for the species. These participants had the unique opportunity to see and interact with the species they had only heard stories about from their elders, by us taking them to the reproduction and rescue center, Fauna Andina (www.fauna-andina.org). The selected students were later to be the main speakers in environmental education workshops at their schools. Afterwards, five workshops with the farmer committees in the same communities were conducted. Many of the farmers were parents or grandparents of the schoolchildren.

The workshops emphasized the role of the kodkod as a rodent predator, and its contribution to the control of *Oligoryzomys longicaudatus*, an important reservoir host of the deadly Hantavirus pulmonary syndrome. The main victims of this virus are men, around 30 years of age, that work in agricultural and forestry activities. Thus, this approach was quite effective to inspire farmers to avoid killing the kodkod and to protect the species and to conserve its habitat. Also, we described proper construction of chicken coups to lessen probabilities of attacks. We also held a workshop with all the park rangers of the National Parks and Reserves surrounding our study area.

Outreach material

Hand-outs (n=550) and posters (n=150) are being distributed throughout the study area to engender positive attitudes towards the kodkod, together with practical information on proper identification of the cat, its role as a rodent predator, habitat description and what rural landowners can do to support Güiña conservation efforts in their region. As final outputs of the project we constructed an interactive Multi-media CD with educational activities and information on temperate rainforest wildlife, for long-term use in rural schools to support the national course guidelines for 5th and 6th grade students

Findings

Kodkod ecology

A total of 57 photos of *Leopardus guigna* were obtained during the study. 75% of the photos were taken between 20:00 and 8:00 hours consistent with the peak activity of the species during crepuscular and night hours. From photo captures deemed to be independent (n= 49) (i.e. taken at different sites and or separated by 24 hr time lapse between photos), 29% were melanic cats, possibly indicating higher incidence of the spotted phenotypical trait. However, we report an intermediate level of melanism compared to other regions of Chile. Preliminary analysis shows similar occupancy in continuous forest and small fragments, suggesting that small forests in the agricultural matrix should be considered valuable habitat for this species, possibly as stepping stone connectors in the landscape between continuous forests.

Spotted *L. guigna* in a small forest fragment of the agricultural matrix (Photo N. Gálvez and F. Hernández).

A melanistic kodkod killed by road traffic in the study area, near a small forest fragment in which we had confirmed presence of the species (Photo N. Gálvez).

Perception, knowledge and conflict

Perceptions and knowledge about the species seems variable (e.g. colour, patterns, ear and tail size, habitat etc). Most are aware that the kodkod is a wild cat, but many recognise some domestic cat traits. A prevailing perception is that it is a harmful animal, because it often enters chicken coups and will kill all the birds inside. Most farmers stated that they had last seen a kodkod a long time ago, and believe that the cat will go locally extinct in the next 20 years. It seems that at present the conflict is low given the number of farmers that reported direct recent experience of predation. These perceptions contrast with the widespread presence of kodkod in small fragments within these farming communities. The implication is that poultry predation occurs at a low frequency. However, it has had a strong negative impact on the perceptions of the community towards the kodkod.

Next steps

During 2009, we will continue with workshops in other schools as part of the educational strategy. Also, we will design new outreach material for distribution. A post-project evaluation of the impact in the community with both parents and children is planned for late 2009. Our 2008 data is being further analyzed for publication. Camera trapping surveys will continue in other areas of the Araucanía. Long-term monitoring has priority in order to understand the population trends of the kodkod in this area.

Children had the unique opportunity to have a first hand experience with the kodkod, of which most had only heard negative stories from their elders. This captive individual at the reproduction and rescue centre Fauna Andina, cannot be re-introduced, so it participates with small groups of students for educational purposes (Photo N. Gálvez).

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Project Information

Duration:	2006 - 2009
Location (see map):	Araucanía District of Southern Chile
Sponsor(s):	Darwin Initiative project 15/06 and Fund for environmental protection (FPA) of the Environmental Agency of Chile, CONAMA
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