Studying one of the least known neotropical mustelids: Lesser Grison (*Galictis cuja*) in Central Chile

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INTRODUCTION

The lesser grison (LG) or "Quique" (*Galictis cuja*) is one of the least known mustelids of neotropics. This medium sized carnivore (length: 443-680 mm; weight: 1.2-2.5 kg) (Fig1.) is found in Brazil, Paraguay, Uruguay, Peru, Bolivia, Argentina and Chile (*3*), were its habitat includes riverbanks, mountains, forest and meadows (*3*, *4*). Its diet is based on small and middle sized preys; in fact, it is known to be an excellent rodent hunter. Despite its broad range throughout the continent, because of its secretive nature, virtually all the species information remains scarce and anecdotal .

In preliminary surveys in rural areas of Central Chile, we have observed that there is a significant lack of knowledge about these species within most of human population. Maybe based on this, there are several legends and myths that surround the species. The LG is basically known as a bad tempered middle size animal that exhibits ferocity and courage, enabling them to confront prey and competitors much bigger than themselves displaying strong teeth and making loud noises. The lack of biological knowledge and the wide number of cultural myths are an interesting topic where human dimensions of conservation should be explored with a multidisciplinary approach. The principal goal of this work was to discover the knowledge of people about LG, and contrast it with existing data, to perform a much needed baseline for the species study.

METHODOLOGY

Between March 2012 and February of 2013 we conducted face to face interviews in the area adjacent to the Natural Reserve "Altos de Cantillana" (Lat-33.906308/Long-71.099971), Chile. The questionnaires included the physical recognition of LG through pictures, basic characteristic of the species and questions about social structure, diet and habitat of LG. The latter questions were asked only to people who were able to identify LG.

We developed a literature search in three scientific databases (Scielo, ISI Web of Knowledge Thomson Reuters and PubMed), looking for the key words "*Galictis+cuja*". All selected articles were classified according to three broad topics selected *a priori*: (i) Richness Assessment: this criterion includes studies of species richness reporting LG presences; (ii) General Biology: including diet, behavior, habitat, reproduction, geographic distribution, molecular biology and population dynamics; and (iii) Pathogens and Parasites: articles including virus, bacteria, fungus, and ecto/ endoparasites related to LG.

The information about the species recorded by the interviews was then compared with the literature information.

Fig. 1: Lesser grison (*G. cuja)*

Fig. 2: LG Social Behavior according to respondents

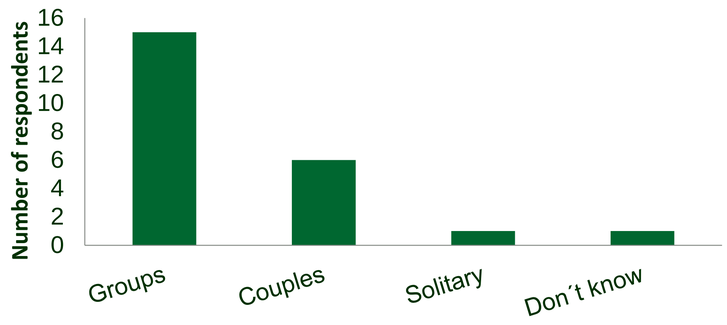


Fig. 3: LG habitat according to respondents

Fig.4: Principal prey of LG according to respondents

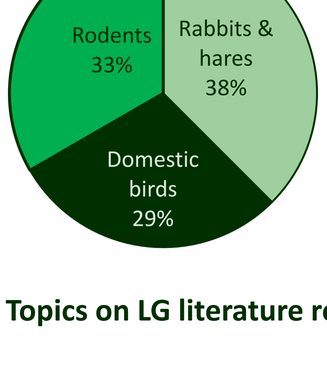


Fig. 5: Topics on LG literature review

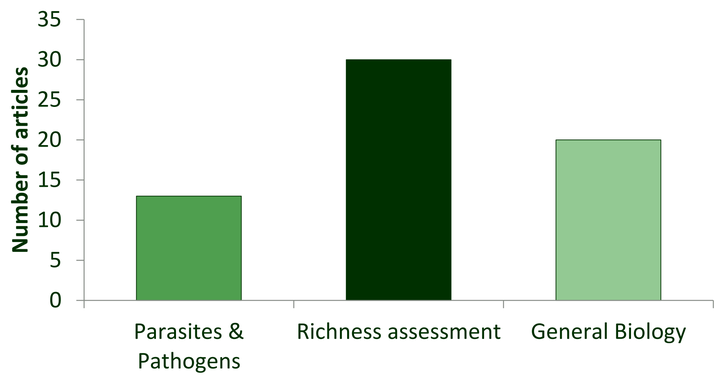
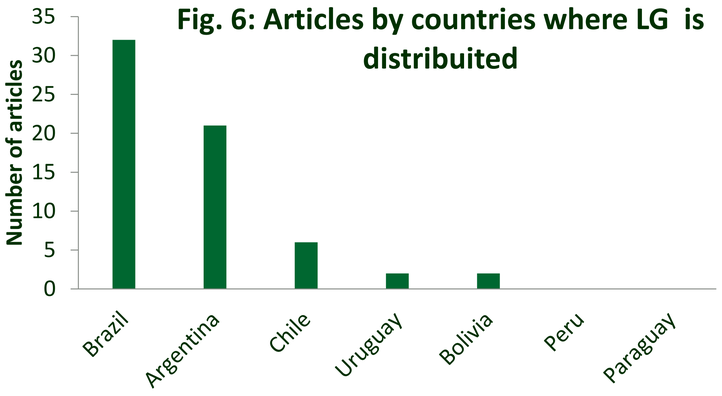


Fig. 6: Articles by countries where LG is distribuited



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RESULTS

We completed 117 surveys, only 18 recognized LG through images, and 23 had heard about the LG. From all, 56.5% had seen LG in free ranging conditions and 65.2% believe that LG lives in groups (Fig.2). People had different perceptions about LG habitat (Fig.3) and they believe its diet is based on rabbits and hares (Fig. 4).

Of 63 articles concerning LG, 47.6% of them related to "Richness Assessment", 31.7% to "General Biology" and 20.6% to "Parasites and Pathogens" (Fig.5). Only 20.6% had LG as target species, and were mainly focused on diet. According to the information available in the literature, in Chile, LG diet includes 80% principally rabbits and hares (*5,6*), habitats including areas near human settlements, and has been observed both in family groups and in isolation (*1*, *3*, *4*). The country with the highest number of publications was Brazil (Fig.6).

DISCUSION & CONCLUSIONS

As expected, recognition and knowledge of this species was scarce (15.4%). However, people who recognizes and had observed the LG, have a similar conception about their diet, habitat, and social structure, information that coincides with literature. We determine that 29% of people have observed or believe that LG diet includes domestic birds, element that could be responsible of some human-carnivore conflicts.

Literature is scarce, with a striking lack of data from Peru and Paraguay, and poor information from Chile, Bolivia and Uruguay. Most of the studies reviewed were about Richness Assessment - without LG as a target species.

We encourage researchers to collect and publish data on this species, even in anecdotal captures, considering the cryptic, elusive and understudied status of the LG. We didn't find specific studies on lesser grison´s conservation threats, such as land use change, human encroachment, invasive species and emerging disease. No articles concerning species abundance or potential distribution models were found. This shows the need of new information generation, which will be useful to improve environmental education and conservation plans.

We suggest that principal topics that should be covered are spatial ecology and movement patterns, phylogeography, behavior, diet -mainly in its northern distribution-, and parasitic fauna of LG. The exploration of these topics should lead to the development of robust baselines to identify and monitor current and emerging conservation threats to the species, and to create public concern about this poorly know mustelid of the neotropics

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