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A PRELIMINARY REVISION OF KNOWLEDGE STATUS OF FELIDS IN ARGENTINA

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ABSTRACT. Argentina is the host of 10 wild felids (28% of the world total). Although the Cat Specialist Group Action Plan has classified the conservation status of Argentine cats as relatively good, the ranking was based on a largely incomplete database for at least 80% of the species. Here we review the current status of knowledge and research effort of Argentine cats, compare it with their distribution, habitat association and conservation status and provide guidelines for their future research. Between 1990 and 2000, cat research has received increasing attention in Argentina. Twenty-four projects have been carried out, but only 13 studies are still in progress. A rank of research priority has been calculated for each felid and ecoregion. Our analysis showed that the Andean and Brazilian Araucaria tropical forests and Patagonia steppe are the three ecoregions with the highest priority for future cat research. The kodkod (*Oncifelis guigna*), Andean mountain cat (*Oreailurus jacobita*) and oncilla (*Leopardus tigrina*) had the highest score. This ranking method is the first systematic attempt to identify research priorities based on the comparison between study effort and conservation priority of both the species in object and their habitats.

RESUMEN. Una revisión preliminar del estatus de conocimiento de los félidos argentinos. En Argentina ocurren 10 especies de félidos silvestres (el 28% del total mundial). A pesar de que el Grupo de Especialistas en Félidos de la UICN ha clasificado como bueno el estado de conservación de los felinos argentinos, esta categorización utilizó una base de datos incompleta en el caso de, por lo menos, el 80% de las especies. En este trabajo se revisan el estado actual de conocimiento y el esfuerzo de investigación sobre los félidos argentinos, se comparan con su distribución, asociación al hábitat y estatus de conservación. Además, se brindan sugerencias para investigaciones futuras. En los últimos 10 años el estudio de los felinos ha recibido mayor atención en el país. Veinticuatro proyectos han sido llevados adelante, pero sólo 13 de ellos se encuentran en progreso. Nuestro análisis de las prioridades de investigación mostró que la selva tropical andina, la selva tropical de araucarias y la estepa patagónica son las ecorregiones de principal importancia para futuras investigaciones en félidos. *Oncifelis guigna*, *Oreailurus jacobita* y *Leopardus tigrina* son las especies de mayor prioridad. Nuestro método de categorización es el primer intento sistemático de identificar prioridades de investigación sobre la base de una comparación entre el esfuerzo de estudio y las prioridades de conservación, tanto de las especies en objeto como de sus hábitats.

Key words: Argentina, carnivores, conservation, diversity, ecoregions, felids, Latin America, *Leopardus tigrina, Oncifelis guigna, Oreailurus jacobita*

Palabras clave: Argentina, carnívoros, conservación, diversidad, ecorregiones, félidos, América Latina, *Leopardus tigrina, Oncifelis guigna, Oreailurus jacobita*

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INTRODUCTION

The diversity of cats in Argentina is high. This country hosts all the 10 Neotropical felids (**Table 1**), corresponding to almost 28% of all cat species in the world (Nowell and Jackson, 1996) (**Fig. 1**). Hence the conservation of Argentine cats may greatly contribute to their global conservation. The effective conservation of a species requires a detailed knowledge of its present distribution, population status, ecological requirements, and genetic identity (Wilson, 2000). These data are not available for most Argentine felids: the global research effort for all this country's small cats has been classified as "Low" or "Very low" in the Cat Specialist Group Action Plan (Nowell and Jackson, 1996). The knowledge status is better only for the puma *Puma concolor*, jaguar *Panthera onca*, and ocelot *Leopardus pardalis.* No review is available of the knowledge status of the felid populations occurring in Argentina, which can provide clear guidelines on what species should be prioritized by future research. However, since the distribution of the different species may overlap, we should not only identify which species to study first, but also where to study them (i.e. which are the priority areas to conduct the studies). Argentina's high cat diversity is likely related to its diversity of ecoregions. Of the 35 Regional Habitat Units that have been identified for Latin America and the Caribbean, 29% are found in Argentina (Biodiversity Support Program et al., 1995), but information about the degree of association between cats and these habitats is still poor. The relationship between cats and habitats has two important consequences for conservation strategies. First, the traditional approach of preserving subspecies can be replaced by aiming to conserve the whole range of adaptations and ecological interactions of a species (Wikramanayake et al., 1998). To adopt this more effective strategy, we must understand the association of each species, and subspecies, with the habitats where it occurs. Second, the conservation of cats may help to preserve the diversity of ecosystems. Carnivores have been widely proposed and used as conservation tools (e.g. Estes, 1996; Mech, 1996; Noss et al., 1996; Schaller, 1996). In most cases, large carnivores are adopted as flagship species in conservation strategies, mainly because they may represent umbrella species due to their large area and habitat requirements (Ginsberg, 2001). Little attention, however, has been given to the role of meso-carnivores in conservation, despite the fact that they could be very important where the large predators are extinct or are close to ecological extinction (sensu Estes et al., 1989). While most felids tend to have relatively broad habitat selectivity, a substantial minority have more specialized requirements (Nowell and Jackson, 1996),

Table 1

List of Argentina cat species with their body size classes
Lista de las especies de félidos argentinos y sus clases de tamaño corporal

Scientific name	Common name	Body size class*
Panthera onca	Jaguar	Large
Puma concolor	Puma, mountain lion	Large
Leopardus pardalis	Ocelot	Medium
Leopardus wiedii	Margay	Small
Leopardus tigrina	Oncilla, little tiger cat	Small
Oreailurus jacobita	Andean Mountain cat	Small
Herpailurus yaguarondi	Jaguarundi	Small
Oncifelis colocolo	Pampas cat	Small
Oncifelis geoffroyi	Geoffroy's cat	Small
Oncifelis guigna	Kodkod	Small

* Small: < 7 kg; Medium: from 7 to 15 kg; Large >15 kg

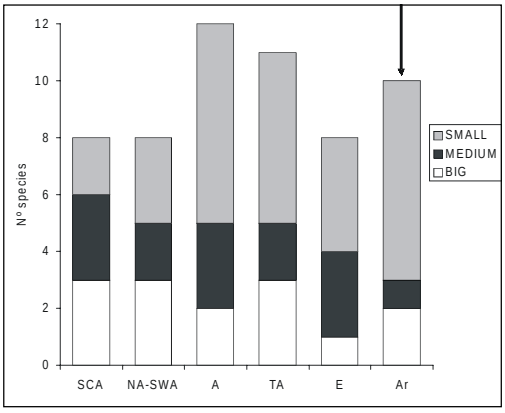

Fig. 1. Number of species in each body-size class (Small: < 7 kg; Medium: 7-15 kg; Large: > 15 kg) in Argentina in comparison to that of each global biogeographical region. SCA: south central Africa; NA-SWA: north Africa-south western Asia; A: America; TA: Tropical Asia; E: Eurasia; Ar: Argentina. Data from the IUCN Cat Specialist Group Action Plan (Nowell and Jackson, 1996).

Número de especies de cada clase de tamaño corporal (Pequeño: < 7 kg; Mediano: 7-15 kg; Grande: > 15 kg) en Argentina en comparación con el número en cada región biogeográfica global. SCA: sur central de África; NA-SWA: norte de Africa - Sudoeste de Asia; A: America; TA: Asia Tropical; E: Eurasia; Ar: Argentina. Datos obtenidos del Plan de Acción del Grupo de Especialistas en Félidos de la UICN (Nowell y Jackson, 1996).

and their specialization and resource selectivity appear generally stronger than that of other carnivore groups (Kruuk, 1986). Therefore, cats may well serve as indicator species of the preservation status of the habitats they are associated with. To identify the potential role of small cats in the conservation of biodiversity in Argentina, however, we need a deeper understanding of the cat diversity in each region of this country.

In this paper, we review the available information, including the gray literature, to understand their distribution in the ecoregions of Argentina, as well as determine the current status of knowledge and research effort on cats in Argentina. The most comprehensive works on the cats occurring in Argentina (Oliveira, 1994; Nowell and Jackson, 1996) used a wide geographic scale approach; this revision will provide a sound basis for the understanding of the cat diversity in Argentina, and the guidelines to draw regional priorities for cat research, which, in turn, may fill the existing gaps in conservation strategies.

SOURCES OF INFORMATION

To evaluate the past and present effort dedicated to research on cats in Argentina, we reviewed the information published on the Argentina cats during the last 10 years, that appeared in Cat News (the Newsletter of the IUCN Cat Specialist Group) and in the abstract books of the two scientific meetings that gather most of Argentina's mammalogists: the SAREM (Argentina Mammal Society) and the ASAE (Argentine Ecological Association) conferences. These data were compared with those reported by the IUCN Cat Specialist Group Action Plan (Nowell and Jackson, 1996), which also provided the source for cat vulnerability rankings. Despite it did not make extended use of local expertise nor specific habitat-based surveys, this action plan is the only global and comprehensive revision available at the moment.

For all project on felids in Argentina (**Appendix I**) we recorded the species studied, study region and habitat, studied aspects (trophic ecology, spatial ecology, distribution, management), duration (in years) and current status, and whether results were published in an international journal.

We used the "Habitat Units" (HUs, hereafter) described in the Regional Analysis of Geographic Priorities for Biodiversity Conservation to analyze the geographic distribution of research effort on cats (Biodiversity Support Program et al., 1995). This report describes the following 10 HUs:

1. **Atlantic tropical forest.** The southernmost portion of this lowland moist broadleaf forest, typically found along the Atlantic coast of Brazil, reaches the northeastern tip of Argentina (Misiones Province).

2. **Aracucaria tropical forest**. The Brazilian Araucaria forest also extends south into the NE of Argentina (Misiones Province).

3. **Tropical Andes fores**t. This is the southern section of the mist mountain forest, which covers the eastern slopes of the Andes beginning from southern Venezuela. In Argentina, it occurs in Salta, Jujuy, Tucumán, and Catamarca provinces.

4. **Chaco**. A lowland dry forest, with grassland patches, that covers the E of Bolivia, W of Paraguay and the north-central portion of Argentina.

5. **Argentine Monte**. Dry shrub and woodland running from north to south between the Andes slopes and the Pampas lowlands.

6. **Pampas/Savannah**. Lowland grasslands with wetlands and sparse trees found in the northeast and centre of Argentina.

7. **Patagonia Steppe**. Lowland grasslands found primarily in southern Argentina, but occurring also in a small portion of Chile.

8. **Southern Andean-Patagonia forest**. A mixed broadleaf and evergreen forest on the wettest parts of the Argentina and Chile Patagonia.

9. **Puna**. The very dry, high-altitude (usually above 4000 m) areas covered with sparse grasslands, of the Andean Altiplano (northwestern Argentina).

10. **Southern Andean Prepuna**. A dry shrub and grassland area that represents an extension of the Puna to the south and at lower altitudes.

The cat association to these Habitat Units was assessed on the basis of a review of Mares et al., 1989; Redford and Eisenberg, 1992; García-Perea, 1994; Oliveira, 1994; Juliá and Richard, 1995; Nowell and Jackson, 1996; Heinonen and Chébez, 1997; Jayat et al., 1999; Pereira et al., pers. com.

RANKING METHOD

We used a two-step procedure, similar to that proposed by Freitag and van Jaarsveld (1997), to rank research priorities for both cat species and HUs. In the first phase, we examined conservation priorities and research efforts. We separately analyzed and scored the following variables:

CAT SPECIES

a) Habitat selectivity: the number of HUs in which the species occurs in Argentina.

b) Vulnerability ranking, as attributed to the species by the Cat Action Plan (Nowell and Jackson, 1996).

c) National research effort: the number of projects on the species in Argentina and the number of aspects studied.

d) Global research effort: a ranking of the species based on the research effort table of the Cat Action Plan (Nowell and Jackson, 1996).

HABITAT UNITS

a) Habitat priority: the ranking attributed to the HU by the Biodiversity Support Program et al. (1995) analysis.

b) Cat total priority: the mean vulnerability ranking attributed to the cats found in the HU.

c) Cat diversity: the number of cat species occurring in that HU.

d) Cat research effort: the number of research projects carried out on cats in the HU.

e) Research representativity: the proportion of species studied with respect to the total number of cats occurring in the HU.

The second step was the integration of the values obtained from the variables considered in the first step. In order to attribute the same weight to all variables, and to avoid a disproportionate contribution of any variable to the final figure, we standardized the values of the variables by dividing each value by the maximum value reached by that variable. The priority score was calculated by assigning equal weighing to each of the variables, i.e. the mean of all their values, and can range from 0 (lowest priority) to 1 (maximum priority).

RESULTS AND DISCUSSION

IUCN ranking and research effort

When we analyze the vulnerability ranking of the Cat Action Plan (Nowell and Jackson, 1996), the overall conservation status of cats in Argentina appears relatively good: Argentina has a smaller percentage of highly vulnerable species and a greater percentage of low-priority species than the rest of the world (**Table 1** and **Fig. 2**). Other data from the same source, however, suggest caution. Until the publication of the Action Plan, the global effort dedicated to research on cats occurring in Argentina was disproportionately low (**Fig. 3**). Argentina has a relatively high proportion of small cat species (70%, **Fig. 1**). Mainly because of their small size, and the difficulties of study that this imply (Nowell and Jackson, 1996), these species have traditionally received little attention. In the case of Argentina, this means that for 80% of the species, the IUCN vulnerability ranking was based on a largely incomplete database. The example of the Geoffroy's cat *O. geoffroyi*, categorized as a low conservation priority, may help to better understand the extent of this lack of information. This species has been reported to be the most common felid throughout its range, which is thought to cover almost the entire Argentine territory and many habitats (Nowell and Jack-

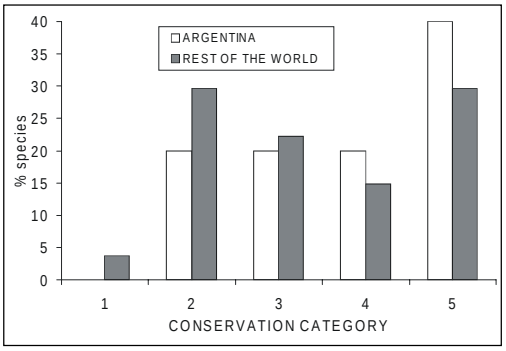

Fig. 2. Proportion of Argentina cats (N=10) in each conservation category with respect to that of the cats found in the rest of the world (N=27). 1: highest conservation priority; 5: lowest priority. Data from the IUCN Cat Specialist Group Action Plan (Nowell and Jackson, 1996).

Proporción de félidos argentinos (N=10) en cada categoría de conservación con respecto a los félidos del resto del mundo (N=27). 1: máxima prioridad de conservación; 5: mínima prioridad de conservación. Datos obtenidos del Plan de Acción del Grupo de Especialistas en Félidos de la UICN (Nowell y Jackson, 1996).

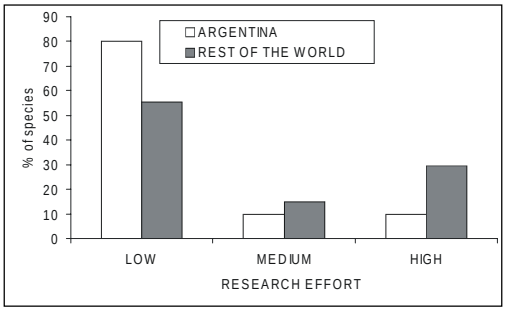

Fig. 3. Proportion of Argentina cats (N=10) in each research effort category with respect to that of the cats found in the rest of the world (N=27). Data from the IUCN Cat Specialist Group Action Plan (Nowell and Jackson, 1996).

Proporción de félidos argentinos (N=10) en cada categoría de esfuerzo de investigación con respecto a los félidos del resto del mundo (N=27). Datos obtenidos del Plan de Acción del Grupo de Especialistas en Félidos de la UICN (Nowell y Jackson, 1996).

son, 1996; Lucherini et al., 2001). Though the research effort was not included within the categorization criteria, the paucity of studies on the ecology of this species (Johnson and Franklin, 1991, in Chile; Brooks, 1992, in Paraguay) led Nowell and Jackson (1996) to state that "it is at present impossible to judge the actual impact of hunting and habitat loss" on its populations. Furthermore, as in the case of *O. geoffroyi*, only a small fraction of the studies on the species living in Argentina was carried out in this country (see below).

Cat–Habitat association

Habitat association is one of the most important criteria for vulnerability ranking, particularly in the absence of direct data on population trends (Reca et al., 1994; Nowell and Jackson, 1996). The degree of habitat selectivity varies widely among Argentine cats (**Table 2**). However, with the remarkable exception of the puma (which lives in all Argentine habitats), no species is significantly associated with (i.e., present with comparatively high population abundance) more than 5 of the 10 HUs recognized for Argentina, and two (*O. jacobita* and *O. guigna*) rely almost exclusively on the resources of a single habitat each (**Table 2**).

The mean number of cat species per HU is 4.8 (S.D. = ± 1.6), but this average decreases (3.8) and variance increases (S.D. = ± 1.9), if only significant habitat-cat associations are considered. The tropical forest of the eastern Andes slope is the most important natural habitat for Argentina felids, since it hosts 8 species (80% of the total), followed by the Atlantic and Araucaria forest (6 species each), while the Andean Patagonia forest, Puna and Patagonia steppe have the minimum number of associated species (**Table 2**). The Puna, the poorest Argentina environment, is the main habitat of only one species (the Andean Mountain cat *O. jacobita*).

Recent research on cats

During the last decade, particularly since the publication of the Cat Action Plan (Nowell and Jackson, 1996), 24 projects have been carried out on cats in Argentina, and all species have been the subject of at least one study (**Table 2**).

Table 2

Association between cats and Habitat Units (HU) in Argentina, and distribution of studies through species and habitats. Each X indicates a different study on that species in that HU. Dark gray indicates significant species/HU association; light gray indicates marginal association. *P.o.: Panthera onca*; *P.c.*: *Puma concolor; L.p.: Leopardus pardalis; L.w.: Leopardus wiedii; L.t.: Leopardus tigrina; O.j.: Oreailurus jacobita; H.y.: Herpailurus yaguarondi; O.c.: Oncifelis colocolo; O.ge.: Oncifelis geoffroyi; O.gu.: Oncifelis guigna.*

Asociación entre félidos y Unidades de Hábitat (HU) en Argentina, y distribución de los estudios en las diferentes especies y hábitats. Cada X representa un estudio diferente en cierta especie y HU. El gris oscuro indica una asociación especie/HU significativa; el gris claro indica asociación marginal. P.o.: Panthera onca; P.c.: Puma concolor; L.p.: Leopardus pardalis; L.w.: Leopardus wiedii; L.t.: Leopardus tigrina; O.j.: Oreailurus jacobita; H.y.: Herpailurus yaguarondi; O.c.: Oncifelis colocolo; O.ge.: Oncifelis geoffroyi; O.gu.: Oncifelis guigna.

HU	SPECIES											
	P.o.	*P.c.*	*L.p.*	*L.w.*	*L.t.*	*O.j.*	*H.y.*	*O.c.*	*O.ge.*	*O.gu.*	N. associated	N. significantly associated
Atlantic tropical Forest	X	X	X	X	X		X				6	6
Aracucaria tropical Forest											6	6
Tropical Andes Forest	X	XX	XX	XX	X		X				8	6
Chaco	X	X									5	5
Argentine Monte		XX					XX		X		5	4
Pampas/Savannah		X					X	X	XXXXX		5	4
Patagonian Steppe											3	2
Southern Andean Patagonian forest		X							X	X	3	2
Puna		X				XX		XX			3	1
Southern Andean/ Prepuna		X				XX		XX			4	2
N. of HU with occurrence	6	10	3	3	3	2	6	7	7	1		
N. of main HU[1]	5	9	3	3	3	1	5	4	4	1		

[1] Habitat Units to which each species is significantly associated

However, the thoroughness of these studies was very variable. Of the felids associated with 3 or more HUs (all species except *O. jacobita* and *O. guigna*), none has been studied in more than 70% of the HUs of occurrence (mean=59.6%; **Table 2**). Most projects (54.2%) included only one study aspect, while only 12.5% covered three or more different aspects. Trophic ecology (i.e. scat analysis, 70.8% of the projects) and distribution (41.7%, mainly at a local or regional scale) were the most frequent study objectives. Spatial ecology was included in only 25% of the projects, and 60% of the species. Radio telemetry data (which are the main source of information on carnivore behavior), however, have been collected on only 4 species (jaguar, ocelot, Geoffroy's cat, and puma).

The lack of long-term monitoring and the rarity with which results are published are important limitations of cat research in Argentina. At present, 13 studies (54.2%) are in

Table 3

Relative rankings of the 10 species of Argentine felids for each variable considered in the research priority index

Ranqueo relativo de las 10 especies de félidos argentinos para cada variable considerada en el índice de prioridad de investigación

	Cat total priority	Cat research effort	Research representativity	Habitat priority	Cat diversity
Atlantic tropical forest	5	3	6	3	4
Araucaria tropical forest	5	1	0	1	4
Tropical Andes forest	6	4	2	3	5
Chaco	4	2	4	2	3
Argentine Monte	4	4	2	1	3
Pampa/ Savannah	4	5	2	2	3
Patagonian Steppe	1	1	0	3	1
S. Andean Patagonian forest	3	3	1	2	1
Puna	2	4	5	3	1
S. Andean/Prepuna	4	4	3	1	2

progress, but only a few lasted longer than 3 years, and, based on our review, less than half of the projects (45.8%) have already produced results available to the international public.

Research priorities

Because of the little attention received until now, both nationally and globally, and its high vulnerability, the kodkod *O. guigna* is the highest research priority in Argentina. The index value of the kodkod is similar to that of the Andean Mountain cat and oncilla *L. tigrina* (**Table 3** and **Fig. 4**). Although projects on these three species have been recently undertaken, our results indicate that the research effort is still insufficient. The puma is the lowest research priority for Argentina, while the rest of the felids have intermediate index values (from 0.49 to 0.67; **Fig. 4**).

Our analysis of the research effort, habitat and cat priority (**Table 4** and **Fig. 5**) shows that, in Argentina, 3 HUs have the highest importance for future cat research: the Andean and the Brazilian Araucaria tropical forests, and the Patagonia steppe. The apparent contradiction between the low ranking of the cat species occurring in the Patagonia and the high priority of this ecoregion is easily explained if we think that no specific project has ever been carried out in the Patagonia steppe. In the case of the Andean tropical forest, the high ranking

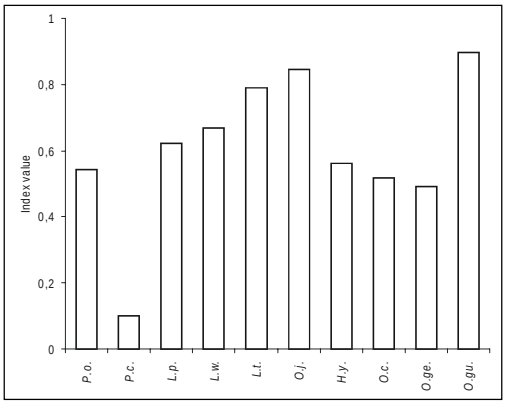

Fig. 4. Research priority for the 10 species of cats ocurring in Argentina. The index weights habitat selectivity, global vulnerability, global and national research effort. Its value ranges from 0 (lowest priority) to 1 (maximum priority). *P.o.: Panthera onca*; *P.c.: Puma concolor; L.p.: Leopardus pardalis; L.w.: Leopardus wiedii; L.t.: Leopardus tigrina; O.j.: Oreailurus jacobita; H.y.: Herpailurus yaguarondi; O.c.: Oncifelis colocolo; O.ge.: Oncifelis geoffroyi; O.gu.: Oncifelis guigna.*

Prioridad de investigación para las 10 especies de félidos que ocurren en Argentina. El índice pesa selectividad de hábitat, vulnerabilidad global, esfuerzo de investigación nacional y global. Su valor varía de 0 (prioridad mínima) a 1 (prioridad máxima). P.o.: Panthera onca; P.c.: Puma concolor; L.p.: Leopardus pardalis; L.w.: Leopardus wiedii; L.t.: Leopardus tigrina; O.j.: Oreailurus jacobita; H.y.: Herpailurus yaguarondi; O.c.: Oncifelis colocolo; O.ge.: Oncifelis geoffroyi; O.gu.: Oncifelis guigna.

Table 4

Relative rankings of the 10 Habitats Units in Argentina for each variable considered in the research priority index

Ranqueo relativo de las 10 HU en Argentina para cada variable considerada en el índice de prioridad de investigación

	Habitat selectivity	National research effort	Global research effort	Vulnerability
P. onca	2	4	3	3
P. concolor	0	6	5	1
L. pardalis	3	2	2	1
L. wiedii	3	4	1	2
L. tigrina	3	1	1	3
O. jacobita	4	2	1	4
H . yaguarondi	2	3	1	1
O. colocolo	1	4	1	1
O. geoffroyi	1	5	2	2
O. guigna	4	1	1	4

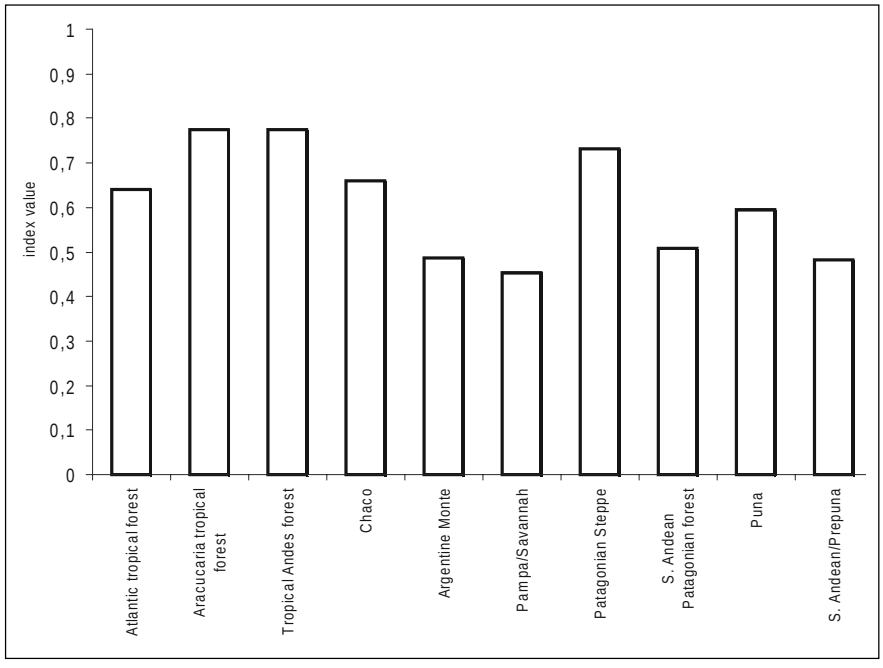

Fig. 5. Cat research priority for the 10 Habitats Units found in Argentina. The index weights cat priority and diversity, the effort and representativity of research on cats, as well as habitat priority. Its value ranges from 0 (lowest priority) to 1 (maximum priority).

Prioridad de investigación de los félidos para las 10 Unidades de Hábitat que se encuentran en Argentina. El índice pesa prioridad y diversidad de félidos, esfuerzo y representatividad de la investigación en félidos y prioridad de hábitat. Su valor varía de 0 (prioridad mínima) a 1 (prioridad máxima).

was mainly due to the great cat diversity hosted by this ecoregion, while both cat diversity and lack of previous research effort contributed to the high value of the priority index of the Araucarian tropical forest. The Chaco, Atlantic forest and Puna are other high-ranking habitats. Interestingly, even if for different reasons (**Table 4**), no ecoregion has a remarkably low index value (**Fig. 5**). This would suggest that future research efforts on felids should be almost equally distributed throughout all Argentina habitats, especially if we are to adopt a strategy aiming to understand, and then conserve, the whole ecological range of each species (Wikramanayake et al., 1998). However, it should also not be disregarded that HUs are not equally represented in Argentina: 60% of them covers less than 5% of the national territory, and hosts 5 exclusive cat species.

CONCLUSIONS

In the last decade, cat research has received increasing attention in Argentina. Though these recent efforts have produced valuable information, which also allowed a categorization of cats within the national conservation status list of mammals (Diaz and Ojeda, 2000), they clearly lacked a common strategy. We are aware that our analysis is not complete, since additional variables might have been included. Nevertheless, it identified the distribution of cat diversity through the range of Argentina natural habitats, produced clear guidelines to recognize the species that are in more urgent need of studies and showed the need for a widespread distribution of the future research efforts through a number of habitats.

To establish conservation priorities is a complex task that requires the analyses of many different factors, including regional and international conservation status, the resources available to conservation programs, the needs for regional social development, etc., and falls outside the aims of this paper. However, a basis of sound scientific data is necessary. The ranking method we used is the first systematic attempt to identify research priorities based on the comparison between study effort and conservation priority of both the species in object and their habitats.

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APPENDIX 1

Information about the Argentinean cat project under analysis.
Información acerca de los proyectos argentinos sobre félidos.

MAIN RESEARCHERS	PROVINCES	HABITAT	P. o.	P. c.	L. p.	L. t.	L. w.	O .j.	H. y.	O. c.	O. ge.	O. gu.	Trophic Ecology	Spatial Ecology	Distri-bution	Manage-ment	Nº topics	Ongoing	Produc-tivity
Aprile Pereira	Buenos Aires	Pampas													X		1	Y	
Canedi	Jujuy	Tropical Andean Forest	X		X	X	X								X		1	Y	X
Canedi	Jujuy	CAPTIVITY		X													1	N	X
Canepuccia	Buenos Aires	Pampas									X		X	X			2	Y	X
GECM *	Buenos Aires	Pampas									X		X	X			2	Y	X
GECM *	Corrientes	Chaco							X		X		X		X		2	Y	X
GECM *	Chubut	Southern Temperate Forest										X	X	X	X		3	Y	X
GECM *	Salta, Jujuy	Puna						X					X		X		2	Y	X
GECM *	Catamarca	Prepuna-Puna		X						X			X		X		2	N	X
GECM *	La Pampa	Pampas									X		X	X			2	Y	X
GECM * -FVSA**	Buenos Aires	Pampas		X						X	X		X	X			2	Y	X
Juliá	Tucumán								X						X		1	N	X
Masseira	San Luis	Pampas		X									X			X	2	N	
Novaro – Perovic	Nordeste	Prepuna-Puna						X					X		X		2	Y	
Pereira	Argentina									X					X		1	Y	X
Pereira	La Pampa	Argentine Monte								X			X	X	X		3	Y	
Perovic	Salta	Tropical Andean Forest	X	X			X						X	X		X	3	Y	X
Pessino	La Pampa	Pampas		X									X				1	N	X
Montanelli Schiaffino	Misiones	Atlantic	X	X	X								X	X		X	3	Y	X
Schiaffino	Misiones	Atlantic	X	X	X	X	X		X				X	X		X	3	N	X
Suhring		LABORATORY											X				1	N	X
Von Thüngen	La Rioja	Argentine Monte		X									X			X	2	N	X
Zapata	Buenos Aires	Pampas							X						X		1	N	X

P.o.: Panthera onca; P.c.: Puma concolor; L.p.: Leopardus pardalis; L.w.: Leopardus wiedii; L.t.: Leopardus tigrina; O.j.: Oreailurus jacobita; H.y.: Herpailurus yaguarondi; O.c.: Oncifelis colocolo; O.ge.: Oncifelis geoffroyi; O.gu.: Oncifelis guigna.

* GECM: Grupo de Ecología Comportamnetal de Mamíferos
** FVSA: Fundación Vida Silvestre Argentina