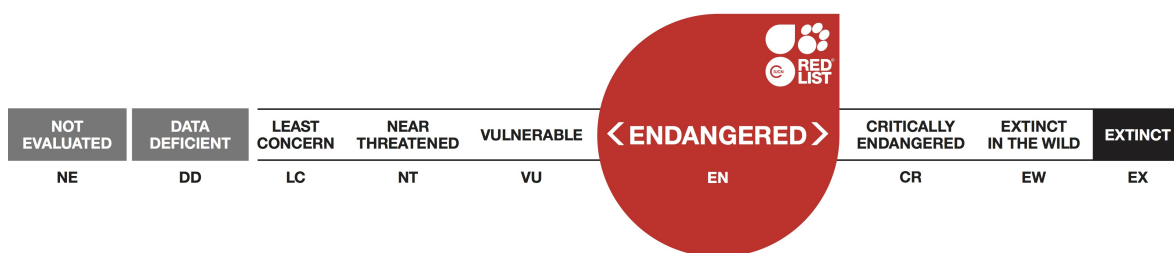


## *Leopardus jacobita*, Andean Cat

Assessment by: Villalba, L., Lucherini, M., Walker, S., Lagos, N., Cossios, D., Bennett, M. & Huaranca, J.



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**Citation:** Villalba, L., Lucherini, M., Walker, S., Lagos, N., Cossios, D., Bennett, M. & Huaranca, J. 2016. *Leopardus jacobita*. The IUCN Red List of Threatened Species 2016: e.T15452A50657407. <http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T15452A50657407.en>

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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Felidae

**Taxon Name:** *Leopardus jacobita* (Cornalia, 1865)

### Synonym(s):

- *Felis jacobita* Cornalia, 1865
- *Oreailurus jacobita* (Cornalia, 1865)
- *Oreailurus jacobitus* (Cornalia, 1865) [orth. error]
- *Oreailurus jacobitus* (Cornalia, 1865)

### Common Name(s):

- English: Andean Cat, Andean Mountain Cat, Mountain Cat
- French: Chat des Andes
- Spanish: Chinchay, Gato Andino, Gato Lince

### Taxonomic Notes:

Taxonomy is currently under review by the IUCN SSC Cat Specialist Group. Previously recognized as belonging to a monotypic genus *Oreailurus* (Cabrera 1940, Wozencraft 1993, Nowell and Jackson 1996, Yensen and Seymour 2000), the Andean Cat is included in the genus *Leopardus*. The genus *Leopardus* includes most small Neotropical felids, and speciation within it has been relatively recent compared to other felid lineages (Johnson *et al.* 2006). While there is strong support for inclusion of the Andean Cat in this genus based on genetic analysis, how closely it is related to the Pampas Cat *L. colocolo* remains unclear. The classification of the Andean Cat as *Oreailurus* was based in part, from very few specimens, on the relative size difference in the skull's auditory chambers, but this trait is also found in other felid species (Johnson *et al.* 1998, Garcia-Perea 2002). The specific name, *jacobita*, is in honour of Jacobita Mantagazza (Cornalia 1865) and should not be declined to *jacobitus* (Yensen and Seymour 2000) as is sometimes seen in the literature. This is one of only two felids for which no subspecies have been classically described (Nowell and Jackson 1996).

## Assessment Information

**Red List Category & Criteria:** Endangered C2a(i) [ver 3.1](#)

**Year Published:** 2016

**Date Assessed:** April 20, 2014

### Justification:

The most recent information confirms that the Andean Cat is a rare species, occurring at low densities and with a patchy distribution due to a specialization for rocky habitats.

New records of the Andean Cat in Argentina extended its distribution range to the south and outside the Andes, into Patagonian steppe and shrub habitats, at elevations as low as 650 m (Novaro *et al.* 2010, Martinez *et al.* 2008). However, a study of the population genetics of the Andean Cat throughout most

of its range (Cossios *et al.* 2012) indicated that the species has a very low mitochondrial and nuclear genetic diversity and identified two distinct Andean Cat populations that should be considered as two "Evolutionary Significant Units" (ESUs), the highland cats from the previously-known distribution and the newly-discovered population in the Patagonian steppe. Moreover, the northern ESU contains two genetically different groups, showing limited or no exchange of individuals between them, which should be considered as two "Management Units" (MUs).

Habitat loss and degradation is an increasing concern in most areas where the Andean Cat is present, due to the expansion of the agricultural frontier, inadequate livestock management and water extraction, as well as water and soil contamination for a growing mining and petroleum industry activity in the South American highlands and the Patagonian steppe. The Andean Cat will be affected negatively by global climate change throughout most of its range by a decrease in the geographical distribution (Bennett *et al.* submitted) and more recently by rapid expansion of exploitation of shale oil and gas through hydraulic fracturing or fracking in northern Patagonia (Walker *et al.* 2013).

Additionally, Andean Cats are being killed by herders in Patagonia in retaliation for predation (Novaro *et al.* 2010) and in northwestern Argentina high mortality rates due to hunting by local people have also been inferred (Lucherini and Merino 2008). More recently, information gathered from monitoring Andean Cats and Pampas Cats with GPS collars in north-western Argentina suggests that competition between these two species may affect negatively Andean Cat populations and make them more susceptible to the mentioned threats (Tellaache 2015).

Based on Andean Cat distribution records an extent of occurrence (EOO) of 1,530,818 km<sup>2</sup> was estimated. However, due to the specificity of Andean Cat to steep rocky environments, this area encompasses large areas between sites of records that are uninhabitable. In a preliminary estimation in a study area of 6,863 km<sup>2</sup> in Patagonia, only 1.4% of the total area was steep rocky areas. Additionally, in a study area of approximately 65,000 km<sup>2</sup> in Patagonia, only 3% of the cells in a grid size of 10x10 km were occupied, based on confirmed and unconfirmed Andean Cat records (Walker and Palacios, unpublished data).

This estimation can have more than one source of error (for example it uses still unconfirmed records) and was calculated for the Patagonian steppe, an environment that is different from that of the highland habitats in the northern and central part of the Andean cat distribution, where there is a greater proportion of rocky habitat. Therefore, to be conservative we estimated that 10% of the current EOO of the Andean Cat could actually be occupied.

Taking into account 10% of the EOO and the lowest density of 0.018 ind/km<sup>2</sup> (Huaranca *et al.* 2013), estimated for a region considered to have one of the most favourable climatic conditions for the Andean Cat (Marino *et al.* 2011), the total population of the Andean Cat is estimated at 2,755 individuals. Because no information about population structure is available, using a default value of 50% for the proportion of mature individuals within the Andean Cat population, only 1,378 would be mature individuals (see Table 1 in the Supplemental Material).

No information exists on trends with regard to habitat modification or destruction in the distribution area of the Andean Cat; but as early as 2002, the conservation status of the Patagonian Steppe and the Central Andean Puna were considered as Critically Endangered (CR) and Vulnerable (V), respectively,

with habitat loss and fragmentation the most serious threats affecting their conservation status (Olson and Dinerstein 2002). There is no evidence that this situation has improved; an evaluation of the progress in the implementation of the Strategic Plan for Biodiversity 2011-2020 mentioned that most of the different habitats, including grasslands and wetlands, are still fragmenting and degrading (SCDB 2014).

Mining activities have increased and the associated use of water resources is impacting negatively most of the areas where the Andean cat presence has been confirmed; in the case of northern Argentinean Patagonia, fracking is an additional threat (Walker *et al.* 2013). In Bolivia, mining is a priority activity and mainly situated in the Andean mountain range; extractive mining without environmental precautions is increasing (Ribera 2013). In Chile, mining industry is an important part of the country's economy and is mainly developed in the northern region, where the Andean cat is distributed and water is a scarce resource. There, the fragile high Andean ecosystems are being degraded and a reduction of the wetlands is predicted in Chile because of the effects of climate change (IEB, CASEB, CCG-UC - CONAMA 2010). In the Peruvian report to the Biodiversity Convention, it is mentioned that in recent years the transformation of natural ecosystems has increased due to changes in land use, particularly by extractive activities such as mining; a trend of transformation, desertification and erosion is mentioned for the fragile wetlands and grasslands in the Peruvian Andes (Ministerio del Ambiente 2014).

Considering the threats to the Andean Cat, the natural fragmentation of the habitat and the increasing trend in fragmentation due to habitat loss and degradation, a continued decline of the population number is inferred.

Based on the available data on Andean Cat distribution and genetic analysis of samples from most areas, 10 subpopulations were identified for the Andean Cat (see Table 2 and Figure 1 in the Supplemental Material). Three subpopulations in Peru (1=north, 2=west, 3=east); two in Bolivia (4=north, 5=centre east); one subpopulation shared among south Peru, centre west Bolivia and northern Chile (6); one subpopulation shared among south-western Bolivia, centre east Chile and north-western Argentina (7); and three subpopulations in Argentina (8=north centre, 9= centre west and 10=southern west). Although some of these could be connected, more studies and more samples for genetic studies are needed. In the meantime, as a precautionary measure these 10 subpopulations are identified.

The estimate of the number of mature individuals for each subpopulation was made in the same way as for the estimation of the total number of mature individuals of the whole Andean cat species. The area of each subpopulation polygon was estimated using the Minimum Bounding Geometry, Convex hull function in ArcGIS. As these polygons are all occupied areas within the EOO, we did not reduce the area to 10% as we did for the overall range. However, even within these occupied areas, occupancy and habitat use by Andean cats is patchy, and they are constrained to rocky places associated with wetlands and/or shrublands. Thus, considering new detailed information on space use (Lucherini *et al.* unpublished data, Huaranca unpublished data, Lagos unpublished data), we estimated that only 40% of each subpopulation polygon is actually used by Andean Cats, and reduced the size of all polygons accordingly (see Table 2 and Figure 1 in the Supplemental Material). The largest subpopulation is estimated to contain 172 mature individuals.

A further reason for concern about the conservation of this cat species, and for adopting a precautionary approach to its categorization is climate change. According to Bennett *et al.* (submitted)

the current bioclimatic distribution of the Andean Cat is clearly affected by climate change. By 2080, under the scenario A2 (medium to high emissions) the distribution area is expected to decrease between 15 and 30%, depending on the cut-off point used in the distribution model. Parallel to this, the model shows an increase in elevation in the north and central distribution, which puts the species even more at risk, because the environmental conditions at higher elevations do not provide the habitat requirements necessary for the Andean cat (Bennett *et al.* submitted).

More studies are needed to confirm the definition of the subpopulations presented here and to improve our estimates of the population size of each one of them, but considering the precautionary principle, the analysis described above supports the classification of the Andean Cat as Endangered.

For further information about this species, see [Supplementary Material](#).

### **Previously Published Red List Assessments**

2008 – Endangered (EN) – <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T15452A4586989.en>

2002 – Endangered (EN)

1996 – Vulnerable (VU)

1994 – Insufficiently Known (K)

1990 – Rare (R)

1988 – Rare (R)

1986 – Rare (R)

1982 – Rare (R)

## **Geographic Range**

### **Range Description:**

The Andean Cat has a patchy distribution due to a specialization for naturally fragmented rocky habitats and most presence records are from the central Andes above 3,600 meters in Argentina, Bolivia, Chile and Peru. However it has also been found at lower elevations in the southern Andes of Argentina at 1,800 m (Sorli *et al.* 2006) and more recent records of the Andean Cat in Argentina and Chile extend its distribution range to the south and outside the Andes, into Patagonian steppe and scrub habitats in Argentina, at elevations as low as 650 m (Novaro *et al.* 2010, Martinez *et al.* 2008), and at 2,200 m in Chile in the Atacama Region (Villalobos *et al.* in prep.).

Within the high Andes the Andean Cat was recorded at an average elevation of 4,236 m in Argentina (Perovic *et al.* 2003), above 3,800 m in Bolivia (Villalba *et al.* 2012), between 3,714 and 4,414 m in Chile (Napolitano *et al.* 2008), and at 4,000 m or higher in Peru (Cossios *et al.* 2007).

Until the end of the nineties, Andean Cat records were scarce and restricted to southern Peru, southwest Bolivia, northwest Argentina and northern Chile (Yensen and Seymour 2000). Similarly, sightings of this species were very few (Scrocchi and Halloy 1986, Sanderson 1999), and museum specimens were equally few (Garcia-Perea 2002). However in the last two decades the number of

distribution records has greatly increased due to the efforts of the Andean Cat Alliance ([www.gatoandino.org](http://www.gatoandino.org)), a network of specialist researchers.

Currently the known northern and southern limit for the Andean cat respectively is central Peru (10°13'S), and central Argentina (38°23'S) (Cossios *et al.* 2007, Novaro *et al.* 2010), but throughout this range the Andean Cat populations are patchily distributed. The results of modelling the Andean Cat distribution considering four bioclimatic variables (annual mean and mean diurnal range temperature, annual precipitation, and coldest season winter), shows the presence of three biogeographic barriers that affect the species' distribution: i) at the north in Peru that coincides with the Huancabamba depression, known as "Peruvian low" and defines the northern boundary of its distribution range, ii) at the centre in Bolivia, with the "Andean knee", an extremely arid transition zone between the wet and dry Puna and where there are no records of Andean cats, and iii) at the south with the "Arid Diagonal" in Chile and Argentina, that is also an hyper-arid zone and with very few records of Andean Cats (Marino *et al.* 2011).

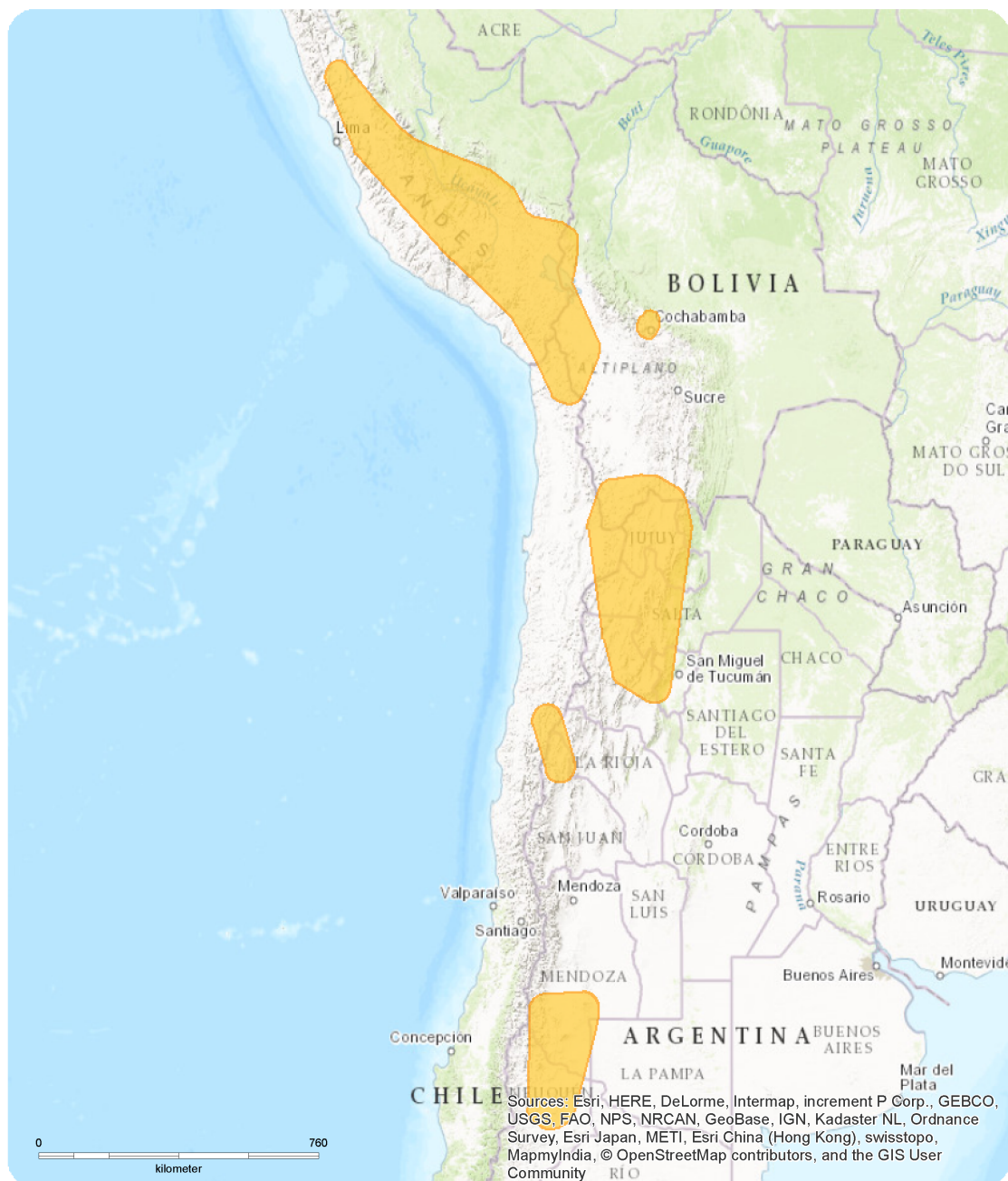
According to this model and despite the differences in elevation over the current geographic range of the Andean Cat, there are common climatic conditions that favour for their presence, which are cold, dry and extreme diurnal variations in temperature (Marino *et al.* 2011).

**Country Occurrence:**

**Native:** Argentina; Bolivia, Plurinational States of; Chile; Peru

# Distribution Map

*Leopardus jacobita*

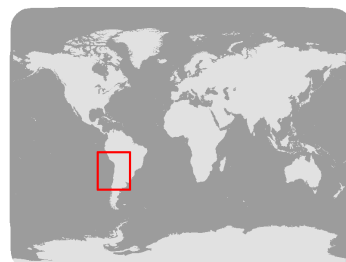


## Range

Extant (resident)

## Compiled by:

Villalba, M.L., Lucherini, M., Walker, S., Lagos, N., Cossios, D., & Bennett, M. 2015. *Leopardus jacobita*. IUCN Red List of Threatened Species



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



## Population

Until now three population estimates on Andean Cat were carried out. Napolitano *et al.* (2008), based on genetic sampling estimated five individuals to occur in a 25,000 ha area in northern Chile, around the Salar de Surire National Monument, resulting in a density of two Andean Cats in 100 km<sup>2</sup>. More recent estimates based on systematic camera trapping resulted in 7-12 Andean Cats in 100 km<sup>2</sup> in northwestern Argentina (Reppucci *et al.* 2011) and in central western Bolivia, a preliminary estimate of 1.8 Andean cats in 100 km<sup>2</sup> was calculated by dividing the minimum number of identified Andean Cats by the area covered (164 km<sup>2</sup>) (Huaranca *et al.* 2013). In the last two studies, densities of sympatric Pampas Cats were also estimated, resulting 74-79 Pampas Cats in 100 km<sup>2</sup> in Argentina and 4.9 Pampas Cats in 100 km<sup>2</sup> in Bolivia. Reppucci *et al.* (2011) also estimated the detection probabilities for both species, which were higher for Andean Cat (0.07) than Pampas Cat (0.02). Other studies based mainly on faecal sample collection have found records of the Pampas Cat much more frequently than the Andean Cat (Lucherini and Vidal 2003, Perovic *et al.* 2003, Cossios *et al.* 2007, Viscarra 2008, Torrico 2009, Novaro *et al.* 2010, Villalba *et al.* 2012). All this information confirms that the Andean Cat is much rarer than the Pampas Cat.

The three surveyed areas outlined above are located within the two regions that are considered to have the most favourable climatic conditions for Andean Cat, and that coincide with those places where a larger number of Andean Cat records have been obtained (Marino *et al.* 2011). In this context, it is expected that Andean Cat density in those areas with less favourable conditions will be much lower.

A study of the population genetics of the Andean cat throughout most of its range (Cossios *et al.* 2012) indicated that the species has a very low mitochondrial and nuclear genetic diversity and two distinct Andean Cat subpopulations, which are latitudinally separated between 26 and 35° S, were identified that should be considered as two "Evolutionary Significant Units" (ESUs). Moreover, the northern ESU contains two genetically different groups, showing limited or no exchange of individuals between them, which should be considered as two "Management Units" (MUs).

The geographical separation between the northern and southern ESU concurs with the third biogeographic barrier, the South American Arid Diagonal and the separation between the two northern management units coincides with the transition zone between the wet and dry Puna (Cossíos *et al.* 2012); thus, the authors remark that these three groups of Andean Cat populations could have developed special adaptations because significant differences exist in rainfall patterns over this range.

**Current Population Trend:** Decreasing

## Habitat and Ecology (see Appendix for additional information)

The Andean Cat is found primarily in rocky and steep terrains, in arid and sparsely vegetated areas of the high Andes above the timberline, and in scrub and steppe habitats within the Andean foothills of Central Argentina and the Patagonian steppe ecological region (Napolitano *et al.* 2008, Novaro *et al.* 2010). In general, climatic conditions are extreme with very low temperatures, large daily thermal variations and low precipitation that determine the presence of adapted plants such as bunchgrasses, cushion plants, and low shrubs with small or resinous leaves (Cabrera and Willink 1973). The presence of high Andean wetlands known as "bofedales" and "vegas" is characteristic in the high Andes and are



an important resource for wildlife and domestic animals (Villalba *et al.* 2004).

The Andean Cat distribution is similar to the historic range of the Short-tailed Chinchilla (*Chinchilla chinchilla*) and current range of the mountain vizcacha (*Lagidium* spp.) (Yensen and Seymour 2000), which are its major prey (Walker *et al.* 2007, Napolitano *et al.* 2008). According to the results of diet studies in Argentina, Bolivia and Chile, and compared with that of other Andean carnivores, the Andean Cat occupies narrower niche with a wide overlap with the Pampas Cat diet (Walker *et al.* 2007, Marino *et al.* 2010). Rodents constitute the main prey item and the Mountain Vizcacha in three out of five diet studies was the more frequent prey: 52% and 43-53% in southern Bolivia and 44.1% in northern Chile (Viscarra 2008, Napolitano *et al.* 2008, Torrico 2009). In a diet study with samples mostly collected in northern Argentina, unidentified small rodents were the most frequent prey (37.3%), followed by the mountain vizcacha 28% (Walker *et al.* 2007); Tellaeche (2010) for a single locality in northern Argentina, also reported that small mammals were the item most frequently consumed by the Andean Cat (93.3% of the faeces), particularly rodents of the genus *Phyllotis* (found in 76.9% of the samples). Among the Andean Cat prey items, the mountain vizcacha has the greatest body mass by far; consequently it contributes significantly to the Andean Cat diet (Walker *et al.* 2007, Napolitano *et al.* 2008).

The Andean Cat is thought to be a solitary species, but may be seen in pairs or with kittens during the mating season and after the births of kittens respectively (Villalba *et al.* 2004). Mating season, according to local people in Bolivia, is between July and August (Villalba and Bernal 1999); however, it is possible that this period could be much longer, because small cubs have been observed in October and from April to September (Villalba 2002, Villalobos *et al.* In prep., Lucherini Unpublished data). Two kittens were seen by Villalba (2002), and what appears to be an older single cub by Sorli *et al.* (2006).

Most of the reported sightings of Andean Cats have been during daytime; however the radio-tracking of the first radio-collared Andean Cat in southern Bolivia recorded main activity peaks at dusk or at night, between 18:00 and 23:00 hours (Villalba *et al.* 2009); similarly the results of 1,596 camera-trap photos from different localities in Argentina, Bolivia and Chile showed the following proportions for Andean Cat activity: 37.6% at night, 34.4% crepuscular, and 28% during the day (Lucherini *et al.* 2009). Additionally, the results indicated that the Andean Cat activity overlaps largely with that of the mountain vizcacha, a diurnal and crepuscular species (Galende *et al.* 1998).

Data on territoriality is absent, however, as occurs with most felids (Sunquist and Sunquist 2002), it is possible that male territories are larger than those of females and that there could be a certain degree of territory overlap between the sexes. Because the conditions of the Andean Cat habitat are severe and naturally fragmented, it is probable that territory and home ranges are very large; a radio-tracked female Andean Cat, between April and December 2004, had a home range of 65.5 km<sup>2</sup> (95% minimum convex polygon: Villalba *et al.* 2009).

The Andean Cat is a medium-sized felid; from measures of skins the total length in adults varies from 740 to 850 mm and in sub-adults varies from 577 to 600 mm; tail length is from 410 to 485 for adults and 330 to 420 mm for sub-adults. Only two records on the weight are available, the first from a sub-adult specimen from Peru, which weighed 4 kg (Pearson 1957, García-Perea 2002) and the second is from an adult female from Bolivia which weighed 4.5 kg (Delgado *et al.* 2004).

Andean Cat fur is mainly ash grey with brown-yellowish blotches that are distributed as vertical lines at

both sides of the body, giving the appearance of continuous stripes. The tail of the Andean cat is very characteristic. It is very long (66 - 75% of the head and body length), thick and cylindrical, with a fluffy aspect and with 6 to 9 wide rings of dark brown to black colour (García-Perea 2002). The legs also have dark and narrower blotches or stripes, but they don't form complete rings.

Apparently the species is not sexually dimorphic in terms of fur colour, but comparisons among Andean Cat skulls carried out by García-Perea (2002) suggest that sexual dimorphism is present. Differences between juvenile and adult specimens were also found, with juveniles having a lighter coloration and more and smaller blotches (García-Perea 2002). Because of these features, sub-adult or juvenile Andean Cats can be confused much more easily with Pampas Cats (García-Perea 2002).

**Systems:** Terrestrial

## Use and Trade

In Argentina, Bolivia, Chile and Perú people of Aymara origin, and in some cases Quechua, have similar beliefs regarding the Andean Cat and Pampas Cat (both known as titi or osqollo). A common tradition is the use of a skin or a stuffed cat during ceremonies that people perform for marking their domestic livestock, mainly llamas or alpacas; the titi is considered a sacred animal related with abundance and fertility of the livestock or quality of crops. It is important to note that both the Andean Cat and Pampas Cat are part of these traditions and beliefs, and in general, are used indiscriminately. There are some local variations within and between countries and in some cases the influence of western culture has resulted in a total or partial loss of the values of Andean cultures and the distortion of ancestral customs regarding the titi (Villalba *et al.* 2004).

Cossios *et al.* (2007) also reported the hunting of Andean and Pampas Cats for food and for traditional medicine in central Peru.

## Threats (see Appendix for additional information)

In the early 2000s the Andean Cat Alliance considered traditional hunting the top threat, followed by prey reduction and habitat loss and fragmentation (Villalba *et al.* 2004), four years later a re-evaluation of the threats affecting the Andean Cat, established that habitat loss and habitat degradation are the main current threats; hunting (opportunistic/palliative or traditional) and reduction of prey populations are considered as the 3<sup>rd</sup> and 4<sup>th</sup> threats, in order of importance (ACA 2011: Andean Cat Alliance Strategic Plan).

Expansion of the agricultural frontier, inadequate livestock management and water extraction for a growing mining and petroleum industry activity in the South American highlands and the Patagonian steppe are altering the Andean Cat habitat. The Andean Cat will be affected negatively by global climate change throughout most of its range by a decrease in the geographic distribution (Bennett *et al.* in progress) and more recently by rapid expansion of exploitation of shale oil and gas through hydraulic fracturing or fracking in northern Patagonia (Walker *et al.* 2013).

Hunting by local people who consider the Andean Cat a predator of their small domestic livestock has been frequently reported particularly in some regions of Argentina, Chile and Peru (Iriarte 1998, Cossíos and Madrid 2003, Lucherini and Merino 2008). Andean Cats are being killed by herders in Patagonia in

retaliation for predation (Novaro *et al.* 2010). These cats are also killed by dogs accompanying local shepherds and in north-western Argentina high mortality rates due to hunting by local people have also been inferred (C. Tellaecche and M. Lucherini unpub. data). Cossios *et al.* (2007) also reported the hunting of Andean and Pampas Cats for food and for traditional medicine in central Peru.

Particularly in Bolivia, Peru and northern Chile, the Andean Cat (as well as the Pampas Cat) is considered a sacred animal according to indigenous Aymara and Quechua traditions. Throughout much of its range, dried and stuffed specimens are kept by local people for use in harvest festivals (Iriarte 1999, Sanderson 1999, Villalba *et al.* 2004, Cossios *et al.* 2007, Villalba *et al.* 2012). Hunting for such cultural practices may represent a significant threat to the species.

The Short-tailed Chinchilla was likely to have been a major prey species for the Andean Cat, but the species was hunted nearly to extinction for the fur trade (Nowell and Jackson 1996). In most of its range, the main prey of the Andean Cat is now the Mountain Vizcacha (Walker *et al.* 2007, Viscarra 2008, Napolitano *et al.* 2008, Torrico 2009), which lives in patchily distributed small colonies and has also been reduced by hunting pressure. This may result in a highly fragmented distribution for the Andean Cat. Intra-guild competition, especially with the Pampas Cat, for Mountain Vizcacha prey, could negatively impact the Andean Cat (Lucherini and Luengos Vidal 2003, Walker *et al.* 2007, Reppucci 2012).

## **Conservation Actions (see Appendix for additional information)**

Included on CITES Appendix I (as *Leopardus jacobitus*). The Andean Cat's conservation status in the range countries was also re-assessed. The species is listed as Critically Endangered in Bolivia, Endangered and Rare in Chile, Endangered in Peru and Vulnerable in Argentina; it also has full protection at the national level across its entire range, as described below. However, law enforcement is problematic, and hunted specimens are regularly observed in the field and for sale, although with less frequency than before, in special markets to be used in religious ceremonies.

After developing the actions outlined in the Andean Cat Conservation Action Plan (Villalba *et al.* 2004) and the information generated in the last 10 years, the Andean Cat Alliance elaborated the Strategic Plan for Andean Cat Conservation (AGA 2011) with the following objectives and maintaining the three main lines of action: Research, Education and Conservation:

- a. To ensure long-term conservation of the Andean Cat and its natural environment, including the restoration or rehabilitation of the environments that have suffered degradation.
- b. To integrate the conservation of the Andean Cat and its natural environment within local policies in the four countries where the species is present, working locally but with a global approach.
- c. To strengthen activities of conservation and research in protected areas with Andean Cat populations, and to promote the creation or extension of existing protected areas to provide connectivity and/or protection of habitats and Andean cat populations.
- d. To promote research on the conservation threats, ecological requirements of the species, its principal prey, and other sympatric carnivores.
- e. To standardize the activities of working groups under common and more effective goals.

- f. To train protected areas staff and local communities in activities in research, education and conservation, within and outside protected areas.

The Andean Cat is found in several protected areas across its range and some were prioritized for promoting effective conservation of the species as well as their habitats and others for the need to carry out surveys and promote effective conservation actions.

Mining and oil/gas extraction are a priority economic activity in South American countries, even in protected areas, therefore lobbying with authorities and the industry sector, as well as promoting and/or supporting the implementation of mitigation plans to minimize impacts are fundamental actions to be addressed (Walker *et al.* 2013).

Similarly, community-based conservation is an essential approach that is being implemented by promoting or supporting sustainable economic initiatives, favouring better practices in livestock management or other activities oriented to mitigate human-wildlife conflict. Community education and support for law enforcement are also important activities to minimize or stop Andean Cat hunting and encourage positive attitudes towards Andean cats and high Andean biodiversity.

## **National legislation**

### Argentina

The Andean Cat is protected by National Law 22421 of wildlife conservation and its Statutory Decree 666/97. Also, Resolution N°63/86 of the Secretary of Agriculture.

### Bolivia

Along with other wild species of fauna and flora, the Andean cat is protected by the Supreme Decree N° 22641, promulgated in 1990, which establishes a general and undefined ban for the pursuit, capture, storing and conditioning of wild animals and its derivative products.

### Chile

All felid species are fully protected since 1972 by Law N° 19473. The illegal hunting of felines in Chile is penalized with fines up to US\$ 6.000 and imprisonment up to 3 years.

### Peru

In 2014 a new regulation listed the Andean cat as Endangered and along with other wild species of fauna its hunting, commerce and hunting, capture, possession, trade, transport or export for commercial purposes is prohibited (Supreme Decree N°004-2014-MINAGRI).

## **Credits**

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## Citation

Villalba, L., Lucherini, M., Walker, S., Lagos, N., Cossios, D., Bennett, M. & Huaranca, J. 2016. *Leopardus jacobita*. *The IUCN Red List of Threatened Species 2016*: e.T15452A50657407.  
<http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T15452A50657407.en>



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## External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

# Appendix

## Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
3. Shrubland -> 3.7. Shrubland - Subtropical/Tropical High Altitude	-	Suitable	Yes
4. Grassland -> 4.7. Grassland - Subtropical/Tropical High Altitude	-	Suitable	Yes
0. Root -> 6. Rocky areas (eg. inland cliffs, mountain peaks)	-	Suitable	Yes

## Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
11. Climate change & severe weather -> 11.2. Droughts	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
3. Energy production & mining -> 3.1. Oil & gas drilling	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
3. Energy production & mining -> 3.2. Mining & quarrying	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.2. Unintentional effects (species is not the target)	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.3. Persecution/control	Ongoing	-	-	-
Stresses:		2. Species Stresses -> 2.1. Species mortality		

## Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions in Place</b>
In-Place Land/Water Protection and Management
Occur in at least one PA: Yes
In-Place Education
Subject to recent education and awareness programmes: Yes
Included in international legislation: Yes
Subject to any international management/trade controls: Yes

## Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions Needed</b>
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
3. Species management -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation
4. Education & awareness -> 4.2. Training
4. Education & awareness -> 4.3. Awareness & communications

## Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Research Needed</b>
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
1. Research -> 1.6. Actions
3. Monitoring -> 3.1. Population trends

## Additional Data Fields

<b>Distribution</b>
Lower elevation limit (m): 650
Upper elevation limit (m): 5000
<b>Population</b>
Number of mature individuals: 1378
Continuing decline of mature individuals: Yes
Population severely fragmented: Yes
No. of subpopulations: 10
Continuing decline in subpopulations: Yes
All individuals in one subpopulation: No

## The IUCN Red List Partnership



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