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BBIO 485 Conservation Biology

The Pampas Cat (Leopardus pajeros)

Species Introduction:

The Pampas cat (*Leopardus pajeros*) is a small feline found throughout many regions of South America. If the Pampas cat is being grouped together with other cats as a subspecies of *Leopardus colocolo* then the Pampas cat is found in almost all of South America. When the Pampas cat is classified as its own species then the range shrinks dramatically to mostly the eastern slopes of the Andes.

Researchers have had a great deal of difficulty categorizing the species since it was first described in the early 1800s, and has belonged to a variety of different genera, as well as grouped or separated from other cat species in South America. (Garcia-Perea, 1994). The history of the Pampas cat's classification has been long and confusing. Even to this day confusion on classification still exists. The Pampas Cat has been split into its own species (*Leopardus pajeros*), with several of its own subspecies, but many still consider it as a subspecies of the species *L. colocolo*. When grouped into the species of *L. colocolo* the group of cats, Pampas cat (*L. pajeros*), the Pantanal cat (*Leopardus braccatus*) of Brazil and the actual colocolo cat are all referred to as a group as the Pampas cat (Garcia-Perea, 1994) adding to the confusion when trying to gain information or classifying any of the group. The Pampas cat was split from this group due to differences in color of their fur and cranial sizes, a split which is not supported by genetic research (Garcia-Perea, 1994).

There are currently five subspecies recognized today of the Pampas Cat (Wozencraft, 2005), but the actual validity of some of them are still questioned as whether they are the same

species or should be differentiated from the *L. pajeros* at all (Garcia-Perea, 1994). Each of these subspecies are geographically isolated from each other and seem to prefer different habitats (Garcia-Perea, 1994). The five subspecies are; *Leopardus pajeros pajeros, Leopardus pajeros crespoi, Leopardus pajeros garleppi, Leopardus pajeros steinbachi,* and *Leopardus pajeros thomasi. L. p. budini* is another possible subspecies which a determination has yet to be made on (Garcia-Perea, 1994). According to "The Pampas Cat Group" by Rosa Garcia-Perea, each of the subspecies is found in unique geographic locations, living in different types of habitat. Garcia-Perea reviewed hundreds of museum specimens with well documented places of collection, as well as written accounts of observations of each subspecies to determine the area of distribution for each subspecies. This paper will focus on the Pampas cat (*L. pajeros*) as a separate species from colocolo. Some of the information obtained about the species *L. pajeros* is taken from papers which still classifies it as a subspecies of colocolo, and all efforts will be made to distinguish between these species and noting when they are grouped together when the information is presented.

Species Description:

The Pampas cat is a small wild cat that ranges in body length from 52 to 70 cm from nose to dorsal base of tails, weighs approximately 2-3 kg and has a tail length of 29-32 cm (Garcia-Perea, 1994). The fur of the Pampas Cat ranges greatly in color but almost all varieties have two dark lines running parallel along its cheek (Garcia-Perea, 1994). All subsets of the species living in Chile have coats that are a yellowish to reddish-brown hue (Quintana *et al.,* 2009, Iriarte 2008). The coloration of the coat seems to vary between the different regions, mostly in striping, rings and spots in three main variants, which may be the cause of the difficulty in classification of the species (Garcia-Perea, 1994). Outside of the previous mentioned differences in striping, etc. the Pampas cat in each region seems to share some common patterns. Facial patterns of striping, coloration of the ears, spinal crest coloration, and chest patterns and colors as well as a few other details are seen throughout the entire species of the Pampas cat (Garcia-Perea, 1994).

Species Ecology:

The only study found that deals with the diet and behavior of the Pampas Cat has L. pajeros categorized under the "family" of the Pampas Cat, L. colocolo. Even though this study groups all of the species together, the data observed can still be useful in determining the diet and habits of L. pajeros, as the study takes place in an area where L. pajeros would be found, at 3000m on the eastern slope of the Andes in northern Chile. Also, the genetic diversity of the Pampas Cat is shown to be very high, indicating that there were possibly different species and subspecies of the Pampas cat and the data can be used to infer habits of L. pajeros, when information is so lacking. The study also mentions that some of the genetic markers found in the scat contained markers unique to *L. colocolo* parejos (identifying the Pampas Cat as a subspecies of the Colocolo) and one of the now subspecies of the Pampas cat. Napolitano, et al. use fecal samples collected from the Pampas cat and the Andean mountain cat to study the diets, habitats, ranges and ecology of these felines. All samples were collected above 3000 meters above sea level in northern Chile. 75 of those samples were confirmed by using DNA analysis as belonging to the Pampas Cat. By studying the scat of the Pampas Cat, researchers were able to determine the composition of their diets and therefore their hunting schedules, species preyed upon, niche differentiation and overlap with the Andean Mountain cat, as well

as its ecological function. The study also studied the relative abundance of the main prey species, using a catch and release method, as well as noting the location of scat collected to include the altitude, slope, distance to water and distance from human settlements.

Many important details of the habitat, density, activity level, and hunting strategies were discovered. The Pampas cat was mostly found at altitudes of between 3670- 4487 meters above sea level, becoming scarcer as the altitude increased. The slope of the hill is also important with most samples only found in areas where the slope is an average 13 degrees or less.

Most of the scat discovered were contained in "latrines" containing massive amount of scat found primarily in or around caves in rocky areas. This suggests that the Pampas cat returns to the same spot to defecate and may sleep close by in those rocky areas.

The Pampas Cat's diet consists of 71% rodents and 27.5% birds. Of the feces found to have bird DNA 25% of that was from only 3 different types of Flamingoes. The evidence of rodents was broken down by which species was found, the percentage of that species, if diurnal or nocturnal, and the average relative biomass. The most common rodent is the leaf-eared mouse (31.5%). Nocturnal rodents made up 37% and diurnal 33%. The Mountain Viscacha was determined to be the most important prey item based on relative biomass (74.8%). This data shows that the Pampas Cat is active both in the day and at night, depending on prey availability at the time, with a relatively flexible schedule. The diversity of the diet corresponds with the Pampas Cat having a very large trophic niche, suggesting the Pampas Cat plays the role of one of their habitats top predators. The locations of these prey items help to shed light on the hunting habits as well. During the study researchers calculated the relative density of different prey species to different locations and correlated that data with the percentage of the Pampas Cat diet. It would seem that the Pampas cat most likely stalks the grasslands and the wetlands and due to the variability in the location of each prey item the Pampas cat is most likely an opportunistic predator feeding off the prey it finds as it moves around.

No correlation between location of human settlements or water sources and the density of the Pampas Cat was seen. Based on the studies of Quintana et al. there should be a density of 0.9 cats per 1,000 hectares, and by that calculation, Napolitano et al. determined there should be 22 cats in the 25,000 ha, and through their analysis of the DNA samples, 21 different cats were in the area. This seems to confirm that relative density is approximately 0.9 cats / 1,000 ha. The low density of the Pampas cat in its habitat suggests a very large territory for each individual. The Pampas cat could make an excellent umbrella species for conservationists as saving the Pampas cat's territory means saving a larger area. This is also bad news for conservationists as low population density means that the population of any area is low, and smaller populations have greater variability and are at a higher risk of extinction.

Population Status and Trends:

Very little is known about the current or historical population of the Pampas Cat. This is due to the seclusion, topography and weather of the habitat that the Pampas Cat lives in, as well as the confusion in classification of the species (Garcia-Perea, 1994). Another issue is that many people who see the Pampas Cat may mistake it for a large pet cat because of similar markings (Villalba, 2012). The best estimate is 50,000 breeding pairs (Nowell & Jackson, 1996), however, this source includes the Pampas cat as a subspecies of *L. colocolo*, along with a few other species. This means that the population of the Pampas cat is much lower than this.

Protected Status:

The IUCN Red List lists the Pampas cat (*L. pajeros*) as not yet assessed (IUCN, 2014), but does list the "Pampas Cat" (*L. colocolo*) as near threatened (IUCN, 2014). IUCN also considers *L. pajeros* as a subspecies of *L. colocolo*, and the most current listing disagrees with it being classified as its own species, and states "Subspeciation and geographic divisions in this species requires further study." (IUCN, 2014). The species is protected by national legislation across most of its range, with hunting prohibited in Argentina, Bolivia, Chile and Paraguay, and hunting regulations in place in Peru (Nowell and Jackson, 1996). The laws are hard to enforce due to the remoteness of the habitat of the Pampas cat, as well as the poverty and religious views of the local people (Villalba, 2012)

Threats:

The Pampas cat is most under threat from habitat loss due to an increasing human population as well as mining operations that cover large areas and change the layout of the land permanently even after mining has ceased (Villalba, 2012). One of the main prey species of the Pampas cat is the Mountain Viscacha which is very sensitive to habitat loss and is an abnormally slow breeding rodent only producing an average of two offspring (Napolitano, 2008). Falling prey numbers, as well as encroachment from humans has forced the Pampas cat to predate on livestock. Many farmers consider the Pampas cat as a nuisance because it eats their chickens (Villalba, 2012) and the farmers kill any Pampas cat found on their property, they also believe that sacrificing the Pampas cat and stuffing its skin will help lead to a good harvest (Villalba, 2012). Works Cited:

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