

Cat Project of the Month - September 2005

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. For application use this [standardised form](#) (an editable word document)

Pampas cat ecology and conservation in the Brazilian grasslands



The main goal of the study on pampas cats in the Brazilian grasslands is to rise information on the ecology of the species, including data on diseases, genetics and threats.

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Leandro Silveira (photo) is a wildlife biologist (PhD). He is the project leader of the Carnovire Community Project at Emas National Park and is the president of the Jaguar Conservation Fund. Leandro has been a member of the Cat SG since 2002. Since 2003, he is conducting a study on the pampas cat (Photo Jaguar Conservation Fund)



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submitted: 23/09/2005

The pampas cat (*Oncifelis colocolo*) is widely distributed in a variety of South American habitats. It ranges from the forested Andean slopes of Ecuador, Peru and Bolivia, cloud forest in central Chile, Paraguayan chaco, open woodlands of central, western, northeastern and southern Brazil, the Argentine pampas, southern Patagonia, and the pampas of Uruguay (Cabrera 1957, Vieira, 1955; Ximenez, 1961). In Brazil it is restricted to open habitats and it is found in the Cerrado of central Brazil, the Pantanal of western Mato Grosso do Sul, and in southern open grassland and mangrove habitats.

Since its first report by Cope in 1889 the pampas cat has been described as rare (Silveira, 1995). Currently the species is listed as endangered by the Instituto Brasileiro do Meio Ambiente e Recursos Naturais Renováveis and as Near Threatened by the IUCN (IBAMA, 2003), and it is still one of the least known South American cats. The pampas cat is a terrestrial crepuscular-nocturnal species, feeding on small mammals, lizards and ground birds. Although some authors have reported that it prefers low areas with tall grass in or near swamps and marshes, data from Emas National Park, central Brazil, shows that preference is given to drier short grassland habitat, far from water (Silveira, L. unpublished; Cabrera and Yepes, 1960).

The pampas cat ecology and conservation has been studied in Emas National Park since 2003. Field data originated from camera-trapping and radio-tracking of individuals. Camera-trapping has been an efficient and reliable method for assessing species abundance in and around Emas Park (ENP), and should be crucial for determining regional conservation priorities for the species (Silveira *et al.* 2003). On the other hand, data from radio-telemetry yields information on individual movements across habitats, activity patterns, home range, and sociality. Therefore, the combination of both methods will allow a better overall picture of the distribution, ecology, and assessment of their conservation status.



A pampas cat recorded by a camera trap in Emas National Park (Photo Jaguar Conservation Fund)



Objectives

The main goal of this study involves the raising of information on the ecology of the pampas cat.

The specific goals include:

- investigate home range size, habitat use, and movement patterns of the species in Emas National Park and in the surrounding agricultural area (farmland);
- assess potential diseases that may affect the local population (epidemiology);
- raise information on the species reproduction
- assess the genetic status of the local pampas cat population;
- evaluate the impact of the two bordering state roads on the species local population.

Pampas cat road kill on the road bordering of Emas National Park.
(Photo Jaguar Conservation Fund).

Study site. Emas National Park is one of the most representative Cerrado reserves in Brazil. Its 132,000 hectares protects 17 carnivore species, of which, eight are on the country's list of endangered species. Emas is probably the last significant tract of grassland habitat to hold resident populations of carnivore species such as, jaguar (*Panthera onca*), puma (*Puma concolor*), maned-wolf (*Chrysocyon brachyurus*), bush-dogs (*Speothos venaticus*) and pampas cat. However, the natural habitat conversion around the Park for agricultural practices has made the Park virtually an island in a sea of cropland.



Emas National Park is a Cerrado area localized in the south-western part of Goiás state, central Brazil

Methods

Pampas cats are being caught with live traps baited with pigeons. Capture efforts are being concentrated across the Park and the surrounding farmlands. Captured animals are sedated with a combination of tiletamine-zolazepam with a dose of 5,5 mg/kg. Biometry is done and blood samples are taken for disease, reproductive hormone analysis, and future genetic analysis before fitting a radio-collar to the animal. After recovery from sedation animals are released at the capture site.



Pampas cat recorded with camera trap (Photo Jaguar Conservation Fund)

Radio-tracking efforts are concentrated on day and night hours, equally. Radio locations are being accumulated from eight individuals. The future compilation of this data will allow a better understanding of the species activity, movement patterns, habitat use and home-range (White & Garrot, 1990). Camera traps are also being placed in natural game trails to record the presence of the species in Emas National Park and surrounding areas. The photographic records of the species will yield information on the species' distribution patterns and abundance across the study region.

Both roads that border Emas Park are being monitored for road-kills. For every road-killed cat a necropsy is done and biological data and samples are collected. A GPS position is recorded.

Preliminary results

The results presented here are the first ones for the pampas cat from a field study in Brazil. Emas National Park seems to be an important refuge for the pampas cat, probably protecting the largest population in a single site as the Park is the one of the country's largest grassland reserves. Considering that the grassland is the species preferred habitat, Emas Park is important for the future conservation. As the grassland in Brazil has been widely converted to agricultural fields, Emas Park remains the largest protected tract of habitat for the species. So far we know that the pampas cat is widely distributed in Emas National Park as well as in the surrounding farmland. They are tolerant to some degree of habitat conversion; they forage for birds and mice alongside natural grasslands and crop fields. To date, twelve pampas cats were captured in this study, 10 males and two females. Biological measurements can be found in Table 1. Blood sample for epidemiological, genetic and reproduction analyses have been stored for future analyses.



Biometry of a female pampas cat captured in a live trap in Emas National Park (Photo Jaguar Conservation Fund).

Table 1. Mean measurements of pampas cats (n=12) captured in Emas National Park.

| Measurements | Mean (cm) Male (n=10) | SD Male | Mean (cm) Female (n=2) | SD Female |
|-----------------------|--------------------------|------------|---------------------------|--------------|
| Weight (kg) | 3,9 | 0,6 | 4,0 | 0,0 |
| head girth (cm) | 20,7 | 1,0 | 17,7 | 0,2 |
| neck girth (cm) | 16,2 | 1,1 | 14,5 | 0,7 |
| chest girth (cm) | 25,3 | 2,4 | 24,8 | 0,4 |
| head length (cm) | 11,7 | 0,9 | 11,5 | 0,7 |
| body length (cm) | 56,5 | 7,1 | 50,5 | 2,1 |
| tail length (cm) | 25,9 | 4,9 | 26,0 | 0,0 |
| ear length (cm) | 4,5 | 0,6 | 4,5 | 0,0 |
| ear width (cm) | 4,2 | 0,3 | 3,6 | 0,6 |
| height (cm) | 28,7 | 1,4 | 27,5 | 3,5 |
| hind foot length (cm) | 12,0 | 0,5 | 11,8 | 0,4 |

Activity patterns

The pampas cat at Emas Park has shown to major activity peaks, between 8:01 and 10:00 and another between 18:01 and 20:00 (Figure 1). There is virtually no activity during the night. Therefore, contrary to what was stated by Cabrera and Yepes, (1960), the pampas cat appears to be a diurnal species with some crepuscular and occasional nocturnal activity.

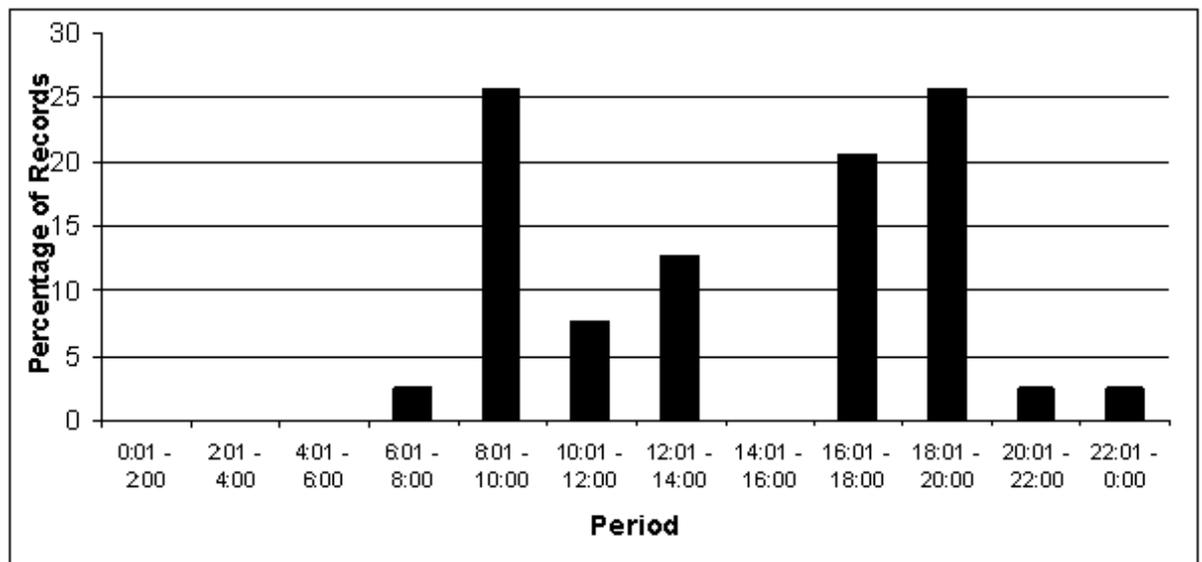


Figure 1. Pampas cat activity pattern recorded by radio-telemetry and camera-traps in Emas National Park and surrounding farmlands.

Home range

For a preliminary analysis of home range size we used the software RANGES VI.211 (Kenward *et al.*, 2003) and only considered data from animals with more than 10 independent locations (bearings) (n=3). Home-range sizes were estimated through two methods: Minimum Convex Polygons – MCP with 100%, 90% and 80% of the location points and the Harmonic Mean method – HM with 100%, 90% and 80% of the locations. Results are presented in Table 2.



Melanistic pampas cat recorded in the study area (Photo Jaguar conservation Fund)

Table 2. Home range size, in km², estimated for three male pampas cat using the Minimum Convex Polygons – MCP 100%, 90% and 80% and Harmonic Mean – HM 100%, 90% and 80% methods.

| | Number of bearings (Mean) | MCP 80% | HM 80% | MCP 90% | HM 90% | MCP 100% | HM 100% |
|------|---------------------------|---------|--------|---------|--------|----------|---------|
| Mean | 47 | 3,07 | 2,61 | 19,47 | 4,60 | 36,98 | 13,02 |
| SD | 23,334 | 2,80 | 1,60 | 3,64 | 2,87 | 1,96 | 8,14 |

Although there is still little known the pampas-cat appears to be the most common small cat in central Brazil, as detected by camera-trapping. The species seems to be well adapted to the grassland habitat but seems tolerant to some level of human disturbance, living in between agricultural and ranching land. There are reports of black pampas cats in captivity but in the wild Emas Park seems to be the only known record. The species similarity with the domestic cat may be allowing it to live virtually unnoticed by locals and therefore is biasing its “non-presence” records as reported in surveys through questionnaires

References

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Duration: 2003-ongoing

Location (see map): Emas National Park - southwest of the state of Goiás, Brazil

Sponsor(s): Memphis Zoo - TN, USA; FNMA/MMA - Barzil; Monsanto; Centrao Nacional de Predadores Nautais/IBAMA

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