‘Projeto’ Gatos do Mato – Brasil / Project Wild Cats of Brazil

Assessing Small Cats Abundance in Brazil:

Camera Trapping Summary Report – 2018

Tadeu G. de Oliveira, Fábio D. Mazim, Lester Fox-Rosales, Felipe B. Peters, Rosane V. Marques, Breno C. Lima, Paulo Marinho, Lyse P. Meira, Alex Pereira, Diogo G. Silva, Marina Favarini & José Bonifácio G. Soares

Instituto Pró Carnívoros / Instituto Pampa – 2018

Assessing Small Cats Abundance in Brazil:

Camera Trapping Summary Report – 2018

Gatos do Mato – Brasil/Wild Cats of Brazil (PGMB/PWCB) is assessing the abundance, density, and monitoring the populations of the smaller felids in critical habitats of Brazil: Amazon, Cerrado, Caatinga, Atlantic Rainforest, Pampas. In some of these areas, they are the first densities obtained worldwide.

Having cats show up on camera is one thing, but being able to get density estimates from it, is a very different ball game! In the past few years, we have massively intensified our efforts of yielding abundance estimates, ideally in the form of density estimates or relative abundance, for all species in as many places as possible. Some of these estimates are being analyzed as of now. We follow PWCB's standard protocol.

So far we have 30 density estimates made or in the making (and growing) for all the species in the country, and 110 abundance estimates (including relative abundance and density) for all felids, 98 for the small cats and 12 for the big cats – Tables 1, 2.

Our work is leading us to an ever-increasing knowledge of the density patterns found in the medium and small sized cats of Brazil. In the book chapter "Ocelot ecology and its effect on the small-felid guild in the lowland Neotropics" from the book Biology and Conservation of Wild Felids (Oxford University Press, 2010) and some other papers we have shown that the larger ocelot attains higher densities than the smaller cats. Ocelot densities are typically on average 0.3 individuals/km^2 (0.01–1/km^2) – Fig. 1, whereas the tropical species of the smaller cats (< 6 kg), at their highest densities reach 0.25/km^2, and are typically found below 0.15/km^2, most likely on the range of 0.01–0.05/km^2 or lower – Figs. 2, 3. If we bear in mind that densities can be estimated only where animals could have enough number of recaptures, where the species are rarer (without any density estimate possibly attained), values would go lower than those we obtained, which means that where the small cats are rare their densities should be expected to be below

<<0.009/km^2). This is the typical pattern of jaguarundis, margays, northern and southern tiger cats.

Another interesting fact is that we usually manage to estimate densities of the smaller cats almost only where ocelots are either rare or absent – see "ocelot effect".

Table 1. Density estimates obtained by PWCB for small felids in Brazil.

Species	Density Estimates (#)	Biomes
Geoffroy's Cat	2	Pampa
Pampas Cat	1	Cerrado (savanna)
Margay	4	Amazon, Atlantic Forest, Pampa
Southern Tiger Cat	5	Atlantic Forest
Northern Tiger Cat	8	Cerrado, Caatinga (semi-arid thorny scrub)
Jaguarundi	4	Atlantic Forest, Cerrado
Ocelot	6	Amazon, Atlantic Forest, Caatinga
TOTAL	**30**	

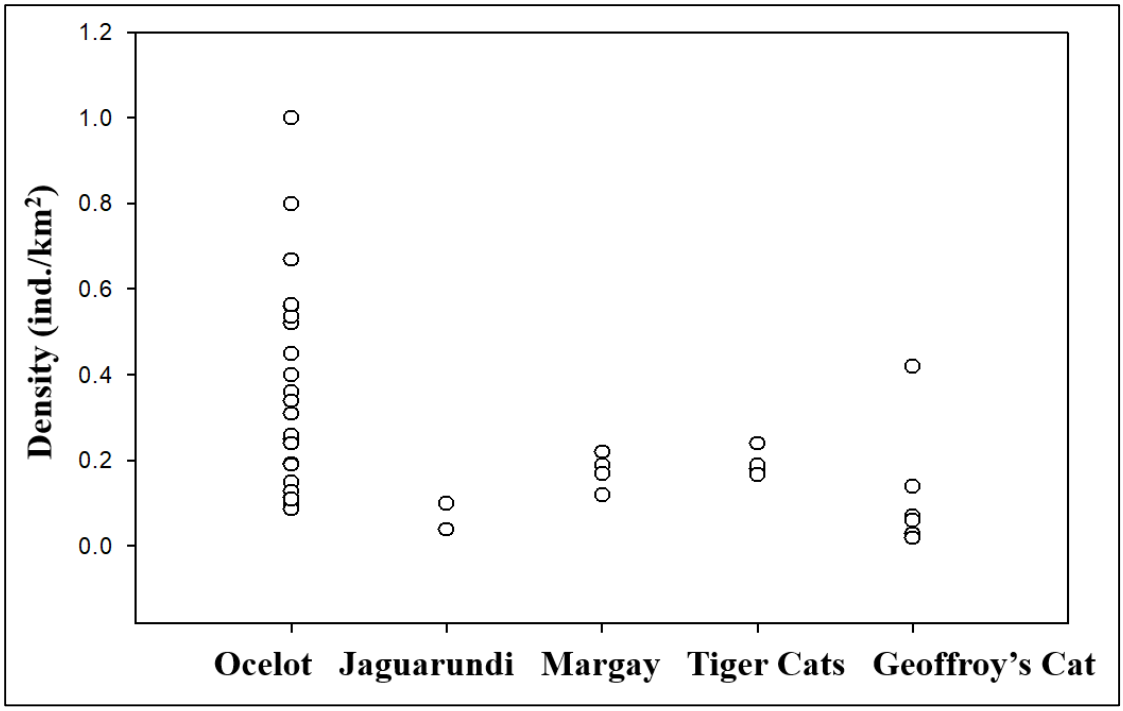

Figure 1. Comparative known densities of medium-small Neotropical felids. (Sources: Ludlow and Sunquist 1987; Emmons 1988; Jacob 2002; Dillon 2005; Maffei et al. 2005; Cuellar et al. 2006; Di Bitetti et al. 2006; Moreno et al. 2006; Oliveira et al. 2010, 2011)

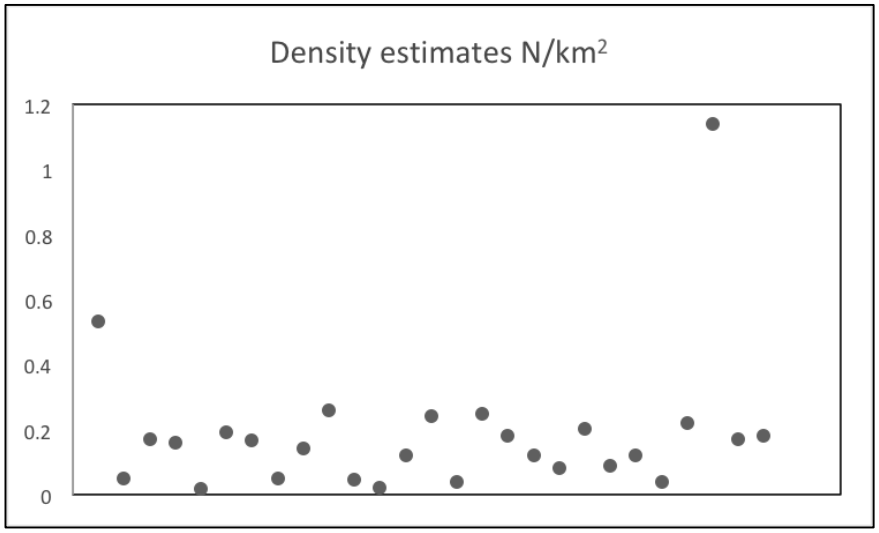

Figure 2. Density estimates of margays, northern tiger cats, southern tiger cats, jaguarundis, Geoffroy's cats, Pampas cats, and ocelots in Brazil, generated by PWCB.

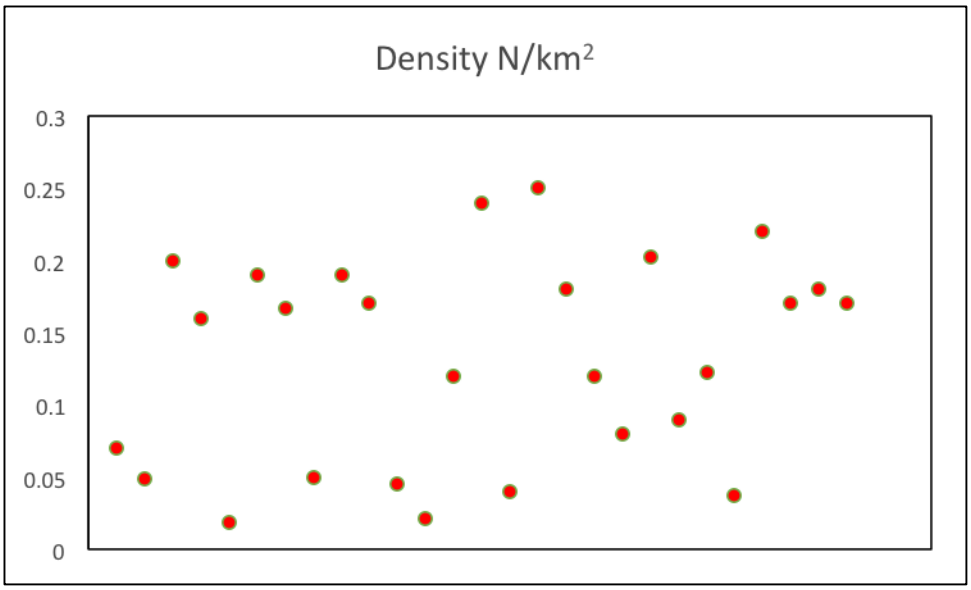

Figure 3. Densities of small cats from tropical America: jaguarundis, margays, northern and southern tiger cats. These are all densities where ocelots are absent or rare. In most areas where ocelots are abundant, small cats' densities should be smaller than the lower values presented here.

We also managed to assess relative abundance. These totaled 98 estimates for all small cats and 12 for large cats, totaling 110 felid abundance estimates – Table 2.

Table 2. Abundance estimates (including relative abundance and density) obtained by PWCB for all felids.

Species	Abundance Estimates (#)	Biomes
Geoffroy's Cat	5	Pampa
Pampas Cat	3	Cerrado (savanna)
Margay	17	Amazon, Atlantic Forest, Pampa
Southern Tiger Cat	10	Atlantic Forest
Northern Tiger Cat	16	Cerrado, Caatinga (semi-arid thorny scrub)
Jaguarundi	26	Atlantic Forest, Cerrado
Ocelot	21	Amazon, Atlantic Forest, Caatinga
Small Cats	**98**	
Puma	8	
Jaguar	4	
TOTAL	**110**	

Species being studied

Ocelot (*Leopardus pardalis*):

Northern Tiger Cat (*Leopardus tigrinus*):

Southern Tiger Cat (*Leopardus gutulus*):

Jaguarundi (*Herpailurus yagouaroundi*):

Geoffroy's Cat (*Leopardus geoffroyi*):

Pampas Cat (*Leopardus colocola*):

Margay (*Leopardus wiedii*):

Support: