Natureza & Conservação
Brazilian Journal of Nature Conservation
Supported by Boticário Group Foundation for Nature Protection
http://www.naturezaeconservacao.com.br

Research Letters

# Illegal hunting and fishing in Brazil: a study based on data provided by environmental military police

*Aline Torres de Azevedo Chagas, Maisa Aparecida da Costa, Ana Paula Vimieiro Martins, Leonardo Cardoso Resende, Evanguedes Kalapothakis**

*Laboratório de Biotecnologia e Marcadores Moleculares, Department of General Biology, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil*

ARTICLE INFO

*Article history:*
Received 6 November 2015
Accepted 9 November 2015
Available online 2 December 2015

*Keywords:*
Illegal hunting
Illegal fishing
Environmental police
Species of forensic interest
Conservation policies

ABSTRACT

Illegal hunting and fishing activities are of great relevance to conservation policies. Few studies with regional focus of the impacts of these activities in Brazil are available. The aim of this study was to characterize illegal hunting and fishing on a national level by collecting data from the environmental police. We analyzed reports prepared by 16 states, all of them which contained a variety of information about seized species, and showed a lack of standardization of data collection and presentation. Illegal fish seizures were predominantly of Amazonian species. Illegal hunting seizures showed the most uniform territorial distribution. Armadillos (Dasypodidae family), pacas (*Cuniculus paca*), and capybaras (*Hydrochoerus hydrochaeris*) were the most frequently seized species, and numerous seizures of Brazilian guinea pig (*Cavia aperea*) were reported in northeastern Brazil. The reports provided by environmental military police have great informative power for conservation policies, but they must be standardized among states to improve the quality of data provided and analysis.

© 2015 Associação Brasileira de Ciência Ecológica e Conservação. Published by Elsevier Editora Ltda. All rights reserved.

## Introduction

Environmental issues have been routinely discussed by the scientific community and by the whole society. In general, is evident an increasing concern for the expansion of legal environment protection through the establishment of laws that inhibit degrading practices (Velho et al., 2012).

Illegal hunting and fishing activities, in combination with habitat loss, deforestation, and the introduction of exotic species, contribute to biodiversity loss in all Brazilian ecosystems (Tabarelli et al., 2005).

Wild animals, it's body parts and its sub products are widely used by human societies worldwide, mainly as protein source for food and feed, clothing and tools, and for medical, cultural and magical/religious purposes (Alves, 2012). Besides, hunting practices reflect local economic, ecological, cultural, and social aspects of the regions where they occur. These activities play an important role in wildlife population dynamics, mainly in ecosystems with high levels of anthropization and

* *Corresponding author.*
E-mail addresses: kalapothakis@gmail.com, ekalapo@icb.ufmg.br (E. Kalapothakis).
http://dx.doi.org/10.1016/j.ncon.2015.11.002
1679-0073/© 2015 Associação Brasileira de Ciência Ecológica e Conservação. Published by Elsevier Editora Ltda. All rights reserved.

fragmentation, such as the Brazilian rainforest and the Amazon forest (Chiarello, 2000). Together, subsistence hunting and habitat fragmentation may drives to species local extinction (Peres, 2010).

According to the Food and Agriculture Organization (FAO) of the United Nations, illegal, unreported, and unregulated (IUU) fishing activities are of major concern in aquatic ecosystems, and researchers face great difficulties in collecting data about fish production and capture (FAO, 2014).

Information about the areas and species most threatened by illegal activities, and the impacts of such activities on wild populations, is of great importance for conservation policy establishment. Studies characterizing wildlife hunting activities in Brazil are focused mainly in ethnozoology. There are many descriptions of hunting patterns and its uses in a large variety of Brazilian regions, all of them based on surveys carried out interviewing local residents in northern and northeastern communities of Brazil (Alves and Rosa, 2010; Barbosa et al., 2011; Dantas-Aguiar et al., 2011; Fernandes-Ferreira et al., 2013; Souza and Alves, 2014), southeastern region (Hanazaki et al., 2009) and Amazon forest (Lopes et al., 2012; Mesquita and Barreto, 2015). There are also few studies based on official data, provided by governmental entities, all of them with regional focus (Chiarello, 2000; Dias-Junior, 2010; Fuccio et al., 2003; Nogueira-Filho and Nogueira, 2000).

The aim of this study was to collect data about seizures reported by environmental military police in Brazil and to characterize illegal hunting and fishing activities in Brazilian territory with national scope.

## Material and methods

For this study, invitation letters were sent to environmental military police command centers of all Brazilian states. These letters requested all available data from police reports regarding seizures related to illegal hunting and fishing in each jurisdictional area in 2013 and the first half of 2014. For Minas Gerais State, where only online data were available, we searched the online police reports database using the keywords “illegal hunting” and “illegal fishing”. The data were collected from 114 reports in which bushmeat or fish seizures were found.

For data analysis, only information regarding slaughtered carcasses was included. Bushmeat seized from illegal hunting practices was counted in units and fish seizures were counted in kilograms. The data were organized per state and per taxonomic group: fishes and invertebrates for illegal fishing and mammals, birds and reptiles for illegal hunting.

It was evaluated the correlation between seizure numbers and State area. To verify if data are parametric or non-parametric, a normality test was performed, followed by a correlation test. The statistical analyses were done at Sigma Plot software and the information regarding States area was collected on the Brazilian Institute of Geography and Statistics website (IBGE) (http://www.ibge.gov.br/home/geociencias/areaterritorial/principal.shtm).

Collecting data from the military police was a strategy for a national coverage based on their broad operating area, covering almost all Brazilian municipalities.

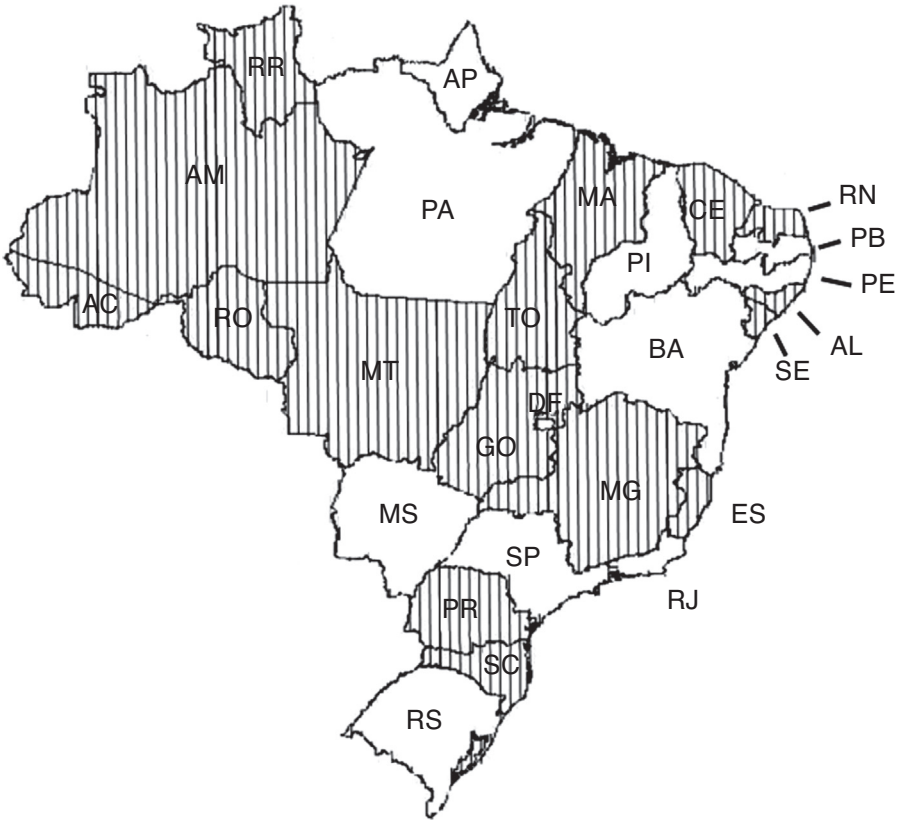


**Fig. 1 – Map of Brazil showing the states that participated in the study (striped regions).**

Download English Version:

https://daneshyari.com/en/article/4400853

Download Persian Version:

https://daneshyari.com/article/4400853

Daneshyari.com