

Ornithofauna seized by enforcement agencies from 2013 to 2022

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Abstract

In Brazil, birds are the most common targets of wildlife trade. Their diversity, beautiful plumage and elaborate songs are differentials among other animals. Therefore, they are coveted either by breeders, to compose zoo collections, or even to become pets to the general population. The Federal Highway Police (PRF), integrated with the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), aims to inspect and preserve the Brazilian natural environment. Most animals seized by enforcement agencies are sent to the Wild Animal Rehabilitation Centers (CETAS). This study aimed to evaluate illegal trade of wild birds in Brazil by analyzing, identifying and quantifying birds seized by IBAMA and PRF in Brazilian territory, to expand the knowledge of the scientific and popular community about the growth of poaching. This study used data from notices of seizure from 2013 to 2019 (IBAMA) and from 2018 to 2022 (PRF), both obtained via open databases of the corresponding agencies. In data consultation, information was collected on the number of species as well as the total number of animals seized from wildlife. During the evaluated period, the highest incidences of seizure correspond to the Columbiformes and Passeriformes orders. Thus, we identified the preference of certain species, families, and orders in illegal trade of birds in Brazil.

Keywords: Birds. Animal trafficking. Wild animal.

Introduction

Brazil has one of the greatest species diversity on the planet, representing more than 13 % of the biota worldwide. Consequently, it also has one of the most diverse birdlife in the world, with an estimated number of 1,971 species (CBRO, 2011; JBRJ, 2017; PACHECO et al., 2021), which corresponds to approximately 57 % of bird species reported in South America. For such diversity, Brazil stands as the third country with the largest number of bird species in the world (SICK, 1997; CTFB, 2017).

To raise wild fauna specimens as pets in Brazil is a tradition that dates back to colonial periods, when colonizers began to capture animals, as well as the species already bred by the Indigenous populations (SILVEIRA; MÉNDEZ, 1999). Wildlife trade is an ancient practice, defined as the removal of free-living specimens to export to another country, exchanging

for a financial reward (NORBERTO, 2009; GONÇALVES, 2009; ARAÚJO et al., 2010).

In Brazil, the most common targets of wildlife trade are birds, representing 82 % of a total of 36,370 specimens seized in 1999 and 2000 (Instituto Brasileiro de Geografia e Estatística [IBGE], 2004). Their diversity, beautiful plumage and elaborate songs are differentials among other animals. Therefore, they are coveted either by breeders, to compose zoo collections, or even to become pets to the general population. It is estimated that only 10 % of the total of captured animals reach their destination due to precarious conditions of capture and transportation, such as containers with false bottoms or even sealed boxes that often cause their deaths (WWF-BRASIL, 1995; and Rede Nacional de Combate ao Tráfico de Animais Silvestres [RENCTAS], 2001; GONÇALVES, 2009; ARAÚJO et al., 2010:).

The concern with biodiversity conservation and, more specifically, with wild fauna protection

was expressed for the first time in Federal Decree no. 24,645 of 1934, which establishes measures to protect animals. Subsequently, the Fauna Protection Law (Law no. 5,197, of January 3, 1967), Article 1, provides for “animals of any species, at any stage of their development and that live naturally outside captivity, constituting wild fauna, as well as their nests, shelters and natural breeding sites, are properties of the State, therefore their use, pursuit, hunting, or catching is prohibited.” From then on, awareness was raised in Brazil to the risks associated with a species extinction, such as the loss of ecological functions and ecosystems balance (BRASIL, 1934; BRASIL, 1967; ICMBIO/MMA, 2018). The Federal Highway Police (PRF), together with the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), state departments of environment, nongovernmental organizations (NGOs) and other institutions, focus on inspecting and preserving the Brazilian natural environment (PRF, 2021). Most of the animals seized by enforcement agencies, collected or voluntarily surrendered by individuals, are sent to the Wild Animal Rehabilitation Centers (CETAS). CETAS are legal facilities with the exclusive purpose of receiving, identifying, tagging, screening, evaluating, recovering, rehabilitating, and allocating wild animals (IBAMA, 2008). A greater number of studies and systematized data is extremely important to control and combat animal trafficking (RENCTAS, 2001). Information about the diversity, the taxonomy, and the number of specimens sent to CETAS is essential for decision-making on the management, handling, and conservation of native fauna. This study aimed to evaluate poaching of wild birds in Brazil by analyzing, identifying and quantifying birds seized by IBAMA and PRF in Brazilian territory, to expand the knowledge of the scientific and popular community about the growth of poaching, thus highlighting the action of wild fauna conservation agencies.

Material and methods

This study used data from notices of seizure drawn up by IBAMA and PRF from 2013 to 2019 (IBAMA) and from 2018 to 2022 (PRF), both obtained via open databases of the corresponding agencies. In data consultation, information was collected on the number seizure notices per year, as well as the number of species and the total number of animals seized from wildlife. Information was compiled and organized in a spreadsheet, grouping the animals by class, order, species, common name, number of individuals, year of apprehension and federative unit (UF), when possible. Throughout the survey, the nomenclature of each species was checked, and updated scientific names were included or excluded, in accordance with Pacheco et al. (2021) revision concerning the nomenclature of each group. In addition, animals with over 3,000 seizure incidences were filtered.

Relative abundance (RA) was calculated for each species in the study area. For RA calculation, the following equation was used:

$$\%Spi = n * 100 / N$$

Where: %Spi=percentage of species; n=number of individuals; N=total number of individuals in the sample.

In addition, relative frequency of the individuals on the seizure list was calculated, using the following equation:

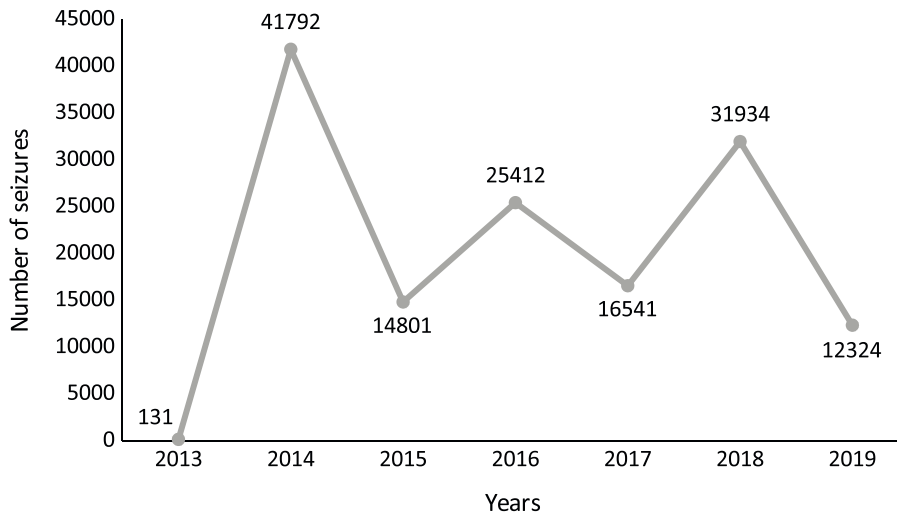
$$FRel = Spi / N$$

Where: FRel=relative frequency; Spi=seized species, N=total number of individuals.

Results and discussion

From 2013 to 2019, IBAMA recorded the actions against animal trafficking. The number of seized wild animals peaked in 2014, totaling almost 42,000 animals (Figure 1).

Figure 1. Seizure of wild animals conducted by IBAMA per year, from 2013 to 2019



Source: IBAMA, 2021.

According to results, the number of seizures increased in 2014 compared to other years (Figure 1). Such increase, however, may not only evince an increase in the number of seized animals, but it may also be attributed to an intense enforcement activity in 2014. We notice gaps in information about the real dimension of poaching in Brazil and the need to standardize a methodology for reporting seizures in Brazilian territory. A clear example of this situation occurred in 2013, when only 131 birds were computed by IBAMA. It demonstrates the lack of data integration and systematization among the responsible agencies for natural resources

management in Brazil, which is one of the main aspects hindering the combat against animal trafficking.

Results highlight that the eight most seized animals correspond to 105,087 individuals (Table 1). The two most seized orders correspond to 91.67 % of all seizures in analyzed years.

Among Columbiformes, which correspond to 61.6 % of the total bird specimens seized, the eared dove species (*Zenaida auriculata*) was the most commonly seized (Table 1). As a bird with high prey potential, *Z. auriculata* has been a permanent victim of poaching, for it is

Table 1. Wild animals most commonly seized by IBAMA per year, from 2013 to 2019

Order	Genus/Species	Common Name	Number of Individuals	RA	RF
Columbiformes	<i>Zenaida auriculata</i>	Eared dove	64,758	61.623	0.616
	<i>Sicalis flaveola</i>	Saffron finch	17,186	16.354	0.164
	<i>Paroaria dominicana</i>	Red-cowled cardinal	5,954	5.666	0.057
Passeriformes	<i>Sporophila nigricollis</i>	Yellow-bellied seedeater	3,867	3.680	0.037
	<i>Sporophila caerulea</i>	Double-collared seedeater	3,793	3.609	0.036
	<i>Saltator similis</i>	Green-winged saltator	3,305	3.145	0.031
	<i>Oryzoborus angolensis</i>	Chestnut-bellied seed finch	3,197	3.042	0.030
	<i>Sporophila albogularis</i>	White-throated seedeater	3,027	2.880	0.029
Total			105,087	100	1

Source: IBAMA, 2021.

an appreciated snack in large urban centers. Thus, its population is balanced on a narrow line, in which they are constantly threatened by modalities of commercial hunting that supply bars, restaurants and street markets, serving a portion of the population (SOUZA et al., 2007).

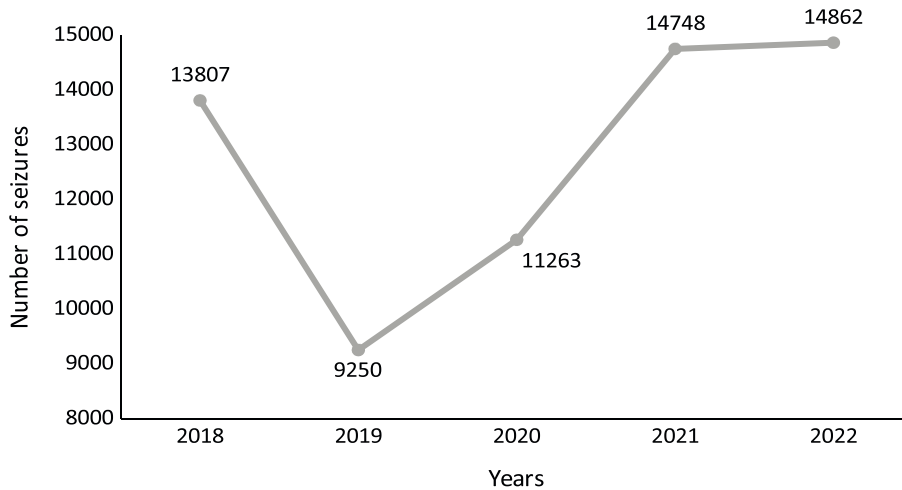
Passeriformes comprise most of songbirds, being the most common in captivity worldwide. Over 2 million of these birds are traded in the world market annually (RENCTAS, 2001). A high frequency of specimens of the genus *Sporophila* reported by IBAMA can be justified by a population and traders preference for these

species, which, consequently, increases the possibilities of seizure or voluntary surrenders.

From 2018 to 2022, PRF reported more than 63,000 bird seizures, in which 14,862 correspond to 2022, when the most seizures incidences were reported (Figure 2).

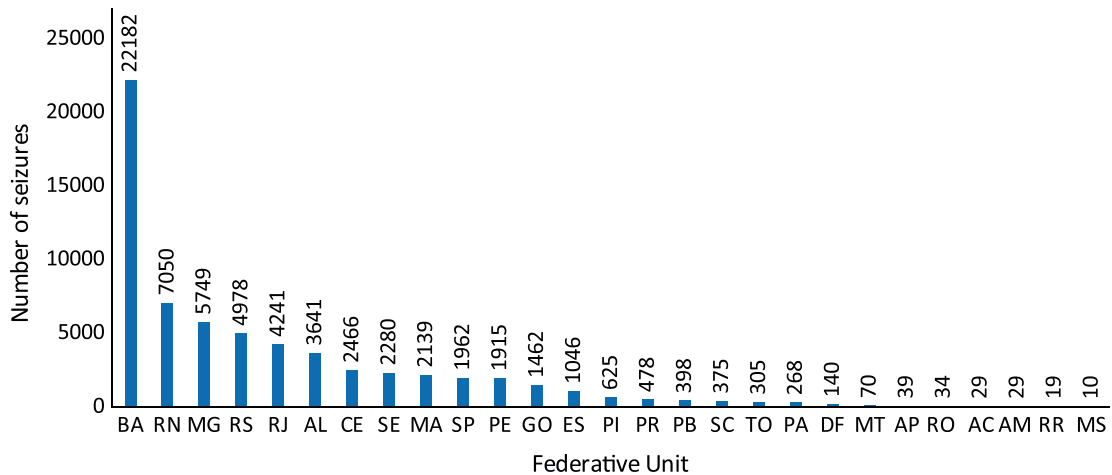
The federative units (UF) that most seized ornithofauna animals were: Bahia, with 34.69 % of the seizures; followed by Rio Grande do Norte, with 11 %; Minas Gerais, corresponding to 8.99 % of the seizures; and Rio Grande do Sul, which accounted for 7.78 % of seized animals (Figure 3).

Figure 2. Seizure of wild animals conducted by PRF per year, from 2018 to 2022



Source: PRF, 2022.

Figure 3. Seizures of wild animals conducted by PRF in units, from 2018 to 2022, by federative unit



Source: PRF, 2022.

The Brazilian regions most involved in poaching—supplying the illegal market—are the Brazilian Northeast (Bahia, Pernambuco, Paraíba, Piauí and Ceará), the Amazon, in the North, and the states of Mato Grosso, Mato Grosso do Sul, and Goiás, in the Midwest (ALVES et al., 2013; DESTRO, 2018). The main internal destination for these animals are the states of the Southeast region, where they are sold in street markets or exported through the main ports and airports. The international destinations of these animals are Europe, Asia and North America (RENTAS, 2001).

Conclusions

In Brazil, there is a preference for the illegal trade of certain species and orders. The eared dove (*Z. auriculata*), of the order Columbiformes, was the most seized species from 2013 to 2019, according to IBAMA. The saffron finch (*S. flaveola*), of the order Passeriformes, was the second most seized species.

This information postulates more in-depth studies on these species' situation in natural environment, aiming to verify possible changes in their abundance or population size in distinct regions of the country; their sex ratio; and genetic quality. Such information is essential to assess in greater depth the effects of trafficking on the populations of native species and to guide their conservation programs. Even though IBAMA and PRF datasets on seized animals are far from perfect, they currently comprise the most detailed data available.

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