Project Update: October 2022

In addition to the results from an arduous investigation on the national and international trade of primates, the objectives of the "future plans" section have been materialising since I continued studying for a doctorate at the same institution, continuing to learn and generate information carried out in a transdisciplinary way.

Publishing plan:
The results of this project have been presented in the form of a scientific article for the journal *Folia primatologica*, making strategic recommendations to increase the rates of co-responsibility in combating primate trafficking in Mexico and the pressure exerted by the extraction of primates in the reduction of their populations. For now we are making final corrections for manuscript forwarding.

> I am writing with reference to your article "The Impacts of the Illegal Trade of Primates in Mexico" (IJFP-1008), which you have submitted to Folia Primatologica a while ago. We have meanwhile received reviews for this article and even though the requested changes are major, I feel that the manuscript has merit and would therefore like to ask you to revise your article following the comments at the bottom of this message. I

A master's thesis was written and a doctoral thesis is currently being developed.

Dissemination of the project:
Talks and interviews have been held on the subject, exposing the results in forums, local newspapers and scientific articles to raise awareness about the illegal possession of wildlife as pets and how this affects them and the survival of their populations.

https://www.facebook.com/RadioAndCo.Mx/videos/1142448123205270

Festivals:
https://www.youtube.com/watch?v=9JVJJ0z0vnA&feature=share&fbclid=IwAR3OlOlEZ7 Ybnvab0UcyVaUp1HElowtOyjQJTelwJTOwOY_NqS9ygi159Zo

Student colloquium:
https://www.facebook.com/coloquios.estudiantiles.inecol/videos/229916562278557

LO BUENO Y RESCATABLE DEL COVID-19

Habrá más atención al medio ambiente

KARLA ZAPATA

Esparza: es una clara oportunidad incomparable para combatir el comercio de la vida silvestre

Lo bueno, o rescatable, de esta crisis mundial del COVID-19, es que resulta ser un parteaguas para mejorar las políticas públicas en países desarrollados, prestando más atención al medio ambiente, lo que da muestra clara de una oportunidad incomparable para combatir el comercio de vida silvestre, ya sea para consumo o para mascotas.

Esto ayuda a garantizar que estos animales no sean vectores que transmitan enfermedades a los humanos, resaltó Zaira Lizbeth Esparza Rodríguez, maestranda en Ciencias en el Instituto de Ecología A.C. quien añadió que el cambio climático es un problema muy grave del que nadie habla, aunque posiblemente con este respiro y recuperación de la tierra, se podría afirmar que el cambio climático disminuye, aunque lamentablemente no es del todo cierto.

Destacó que se trata de cambios permanentes ya que una vez que se ejerzan las acciones para detener la propagación del virus y cuando todo se estabilice, se tomarán medidas destinadas a estimular la economía mundial y los grandes proyectos de infraestructura, por tanto al regresar a la normalidad se rebotará el consumo de combustibles fósiles y por ende las emisiones, por encima de los promedios históricos, impactando de manera contraproducente.

La crisis mundial por el Covid-19, vendrá a dar un respiro al cambio climático.
/ CUARTOSCURO

ZAIRA LIZBETH ESPARZA,
MAESTRANDA EN CIENCIAS EN EL INSTITUTO DE ECOLOGÍA A.C.

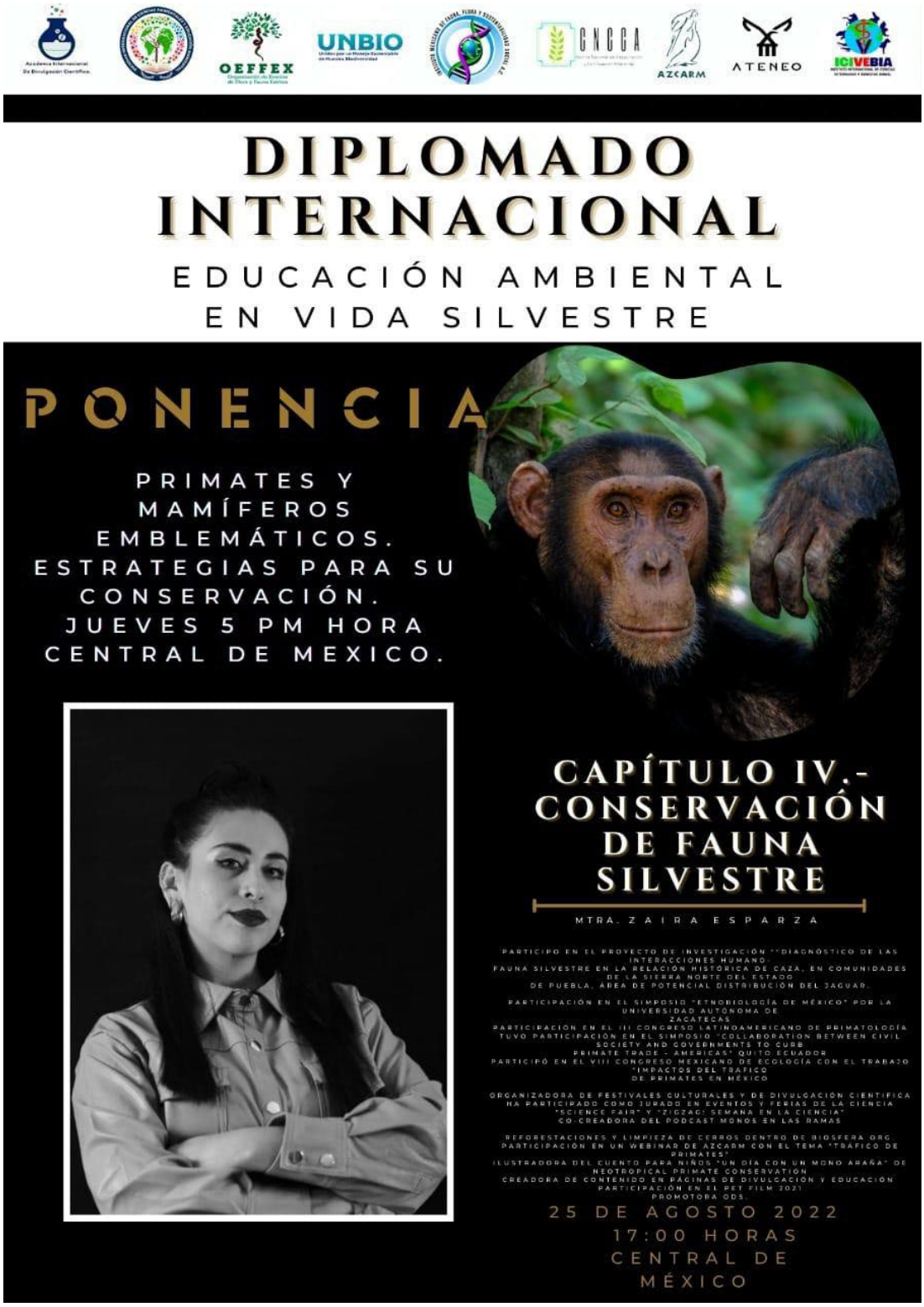
El cambio climático es un problema muy grave del que nadie habla".

"Además, la reducción de un 25 por ciento de emisiones en dos semanas solo reduce las cifras anuales en aproximadamente un 1 por ciento".

Hasta ahora, los medios se han concentrado específicamente en los efectos más que en las causas, en particular las implicaciones globales para la salud pública y las economías, sin embargo, se requiere desentrañar la línea del tiempo del Coronavirus (COVID-19) para poder determinar de manera categórica su causa inicial, así como su efecto positivo y negativo en el medio ambiente.

"Lo que sí sabemos, es que la enfermedad se originó en mercados insalubres y mal regulados de vida silvestre, tanto legal como ilegal, involucrando el cruce del virus de animales a humanos, esto fue en China, donde el consumo de vida silvestre está tan profundamente arraigado en la cultura".

El gobierno chino respondió a la crisis actual al promulgar una prohibición temporal en estos mercados, cerrando un sector significativo de su comercio nacional de vida silvestre, alguna vez, el comercio ilegal fue criticado en términos prácticamente de conservación, ahora se considera con relación a temas de salud pública.



Congress:
The results were also disseminated:
Participation in the Symposium "Collaboration between civil society and governments to curb primate trade - Americas" Quito Ecuador

- Participation in the VIII Mexican Congress of Ecology with the work "Impactos del tráfico of primates in Mexico"

Conservation actions:
Interventions and conservation actions have been carried out that will help mitigate primate trafficking in a certain way, such as community murals called "From paper to the streets".


ZAI·ESPARZA·

Documentary Previews

Short film "Monkeys are not pets"
https://drive.google.com/file/d/1U9Lwwu6MD2jXsQxHoKj8coSjavHcDKfr/view?usp=sharing

Work still missing:
Present the material of the conservation education workshop media campaigns

against wildlife trafficking

Finish the last objective:
Obtain a broad view of the actors involved in the dynamics of trafficking, through their opinions and perceptions about the use of primates over time as well as methods of capturing primates and motivations.

Other experiences carried out along with this project:
Participation in the project on the uses and hunting of the jaguar in the Sierra Norte de Puebla Mex.

Community relationship

Detailed project results:

Objective 1

Information was obtained on the seizures of primates in Mexico in a period from 2010 to 2020, which species, number of individuals, characteristics of the monkeys, place of seizure, date and final storage site.

During the 2010-2017 period, a total of 647,021 insured individuals of flora and fauna were registered in Mexico, 576,265 specimens correspond to flora (89.06%) and 70,756 specimens (10.94%) correspond to fauna. Birds represent the largest number of seizures (n= 25,371), followed by reptiles (n= 24,298), amphibians (n= 7,215), invertebrates (n= 7,092), mammals (n= 5,060), and fish (1,720) (Figure 1). Of these 5,060 mammals, a total of 446 insured primates were registered in that period of available information, and a total of 508 in the period 2010-2019, which represents 0.63% of the total seized fauna and 8.8% of the total mammals seized.

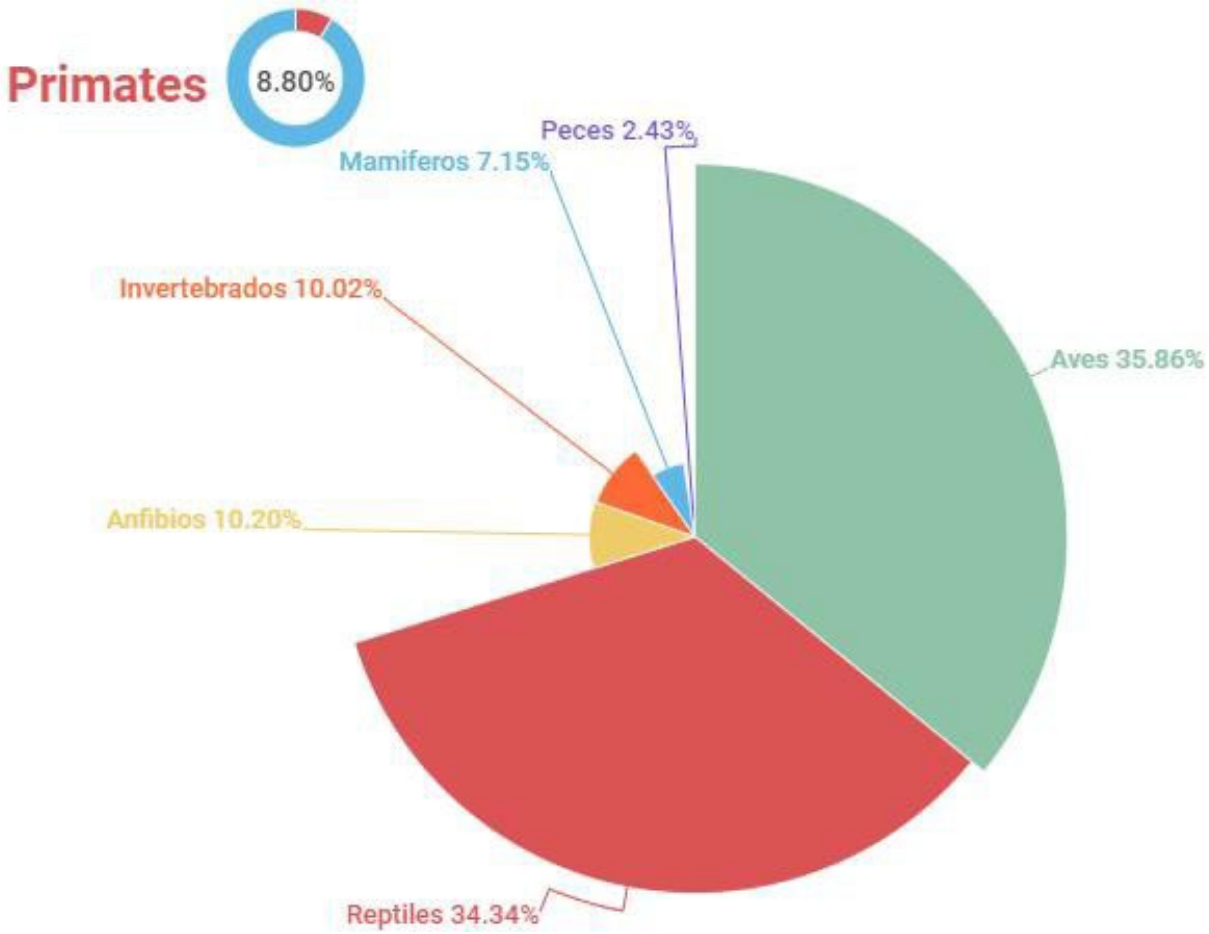


Figure 1. Wildlife seized in Mexico during the period 2010-2017

For primate seizures, a total of 241 cases have been registered where PROFEPA (Federal Attorney for Environmental Protection) precautionarily secured primate specimens for different reasons. Of these seizure cases, they correspond to 508 Mexican primates that PROFEPA secured during the 2010-2019 period (figure 2). The species with the highest number of precautionary seizures corresponds to the species *Ateles geoffroyi* (n= 474 specimens, 93.4%), followed by *Alouatta palliata*

(n=20, 3.9%) and *Alouatta pigra* (n=14, 2.7%). The main reason for these seizures was that the owners of the specimens did not prove their legal origin (Table 1).

Figure 2. Seizures of primates made by PROFEPA during 2010-2017

Table 1. Reasons why an administrative process of precautionary insurance of primates was initiated by PROFEPA in 241 cases during 2010-2019

Reasons	**Cases (n)**	**Percentaje (%)**
They did not prove their legal origin	215	89.22
Failure to comply with the management plan	5	2.08
They did not have a record	6	2.49
Fouls for breaching dignified and respectful treatment	8	3.32
They did not prove legal origin, more lack of respectful dignified treatment	6	2.49
They did not have authorization	1	0.4
Total	241	100

The ten states of the republic with the highest number of insured individuals are Veracruz (n=85), Mexico City (n=67), Yucatán (n=66), Quintana Roo (n=52), Campeche (n=29), Sonora (n=26), Michoacán (n=23), Chihuahua (n=20), Oaxaca (n=19), and Chiapas (n=18), this represents 79.7% of the total (figure 3).

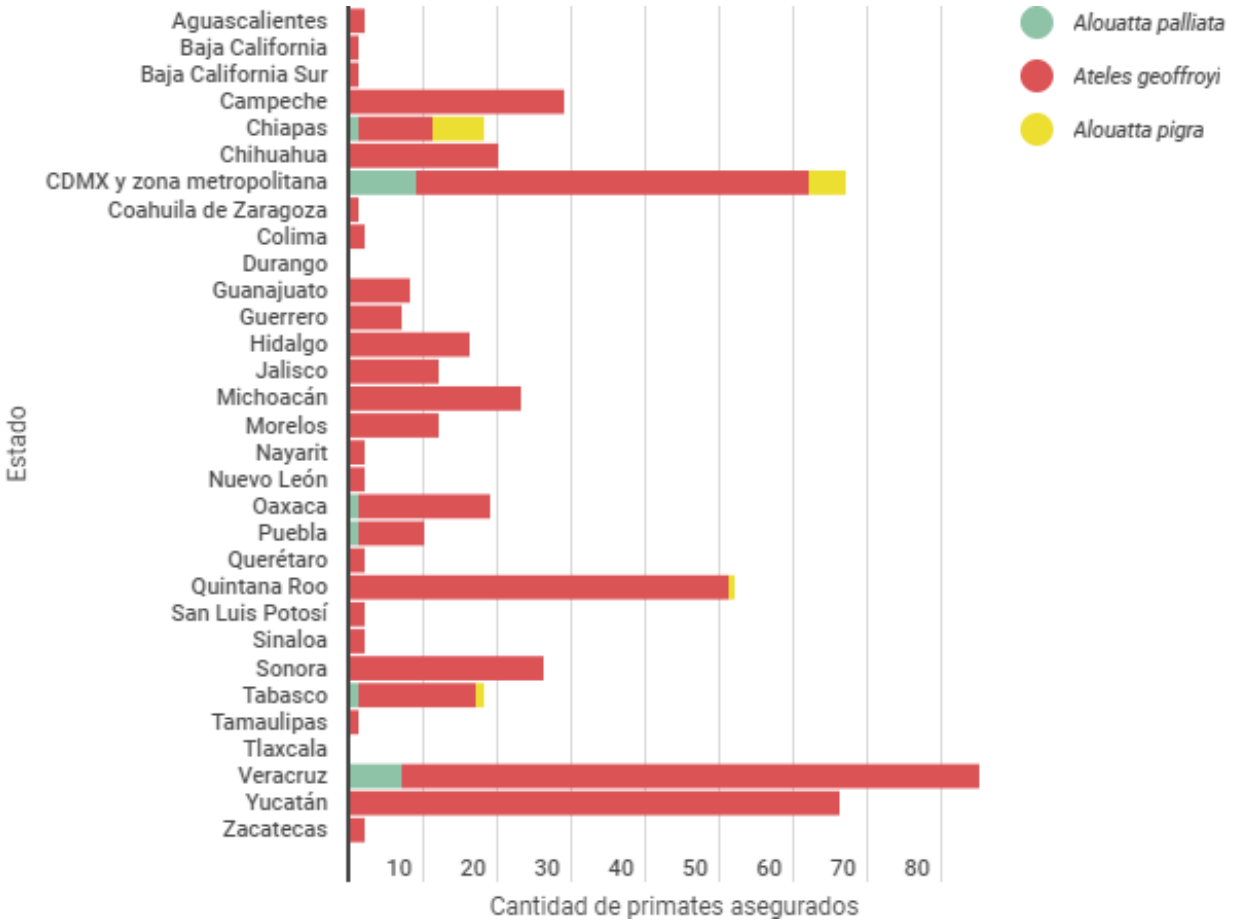


Figure 3. Seizures of primates, by State, made by PROFEPA during 2010-2019

Of the 241 seizure cases, the states where these were most performed were Mexico City with 50 cases, Quintana Roo (n=34), Yucatán (n=34), Veracruz (n=27), Chiapas (n=10), Oaxaca (n=10), Morelos (n=8), Campeche (n=7), Guanajuato (n=7), and Hidalgo (n=7). Of the 241 seizure cases, the states where the most were carried out were Mexico City with 50 cases, Quintana Roo (n=34), Yucatán (n=34), Veracruz (n=27), Chiapas (n=10), Oaxaca (n=10), Morelos (n=8), Campeche (n=7), Guanajuato (n=7), and Hidalgo (n=7). The results presented above correspond to the precautionary seizures, of the 241 cases, only 95 cases are considered seizures (39.41%), that is, the cases that did conclude the administrative process, also of the 508 individuals registered in the seizure cases, only 139 concluded the administrative procedure (Figure 4), that is, these primate specimens were taken from their owners or responsible and deposited in an authorized site (27.37%) and 369 primates remained seized (72.63%), that is, that the "presumed responsible" who is being inspected continues to have the specimen(s) in his care, but cannot move, sell, or do anything else, but must keep them in the same place until the procedure is concluded administrative legal proceedings initiated (although they could be ensured as a precautionary measure by placing them in physical "safety" in an authorized place, until the procedure is concluded, if the case warrants; normally it is when the specimens are in critical physical risk.

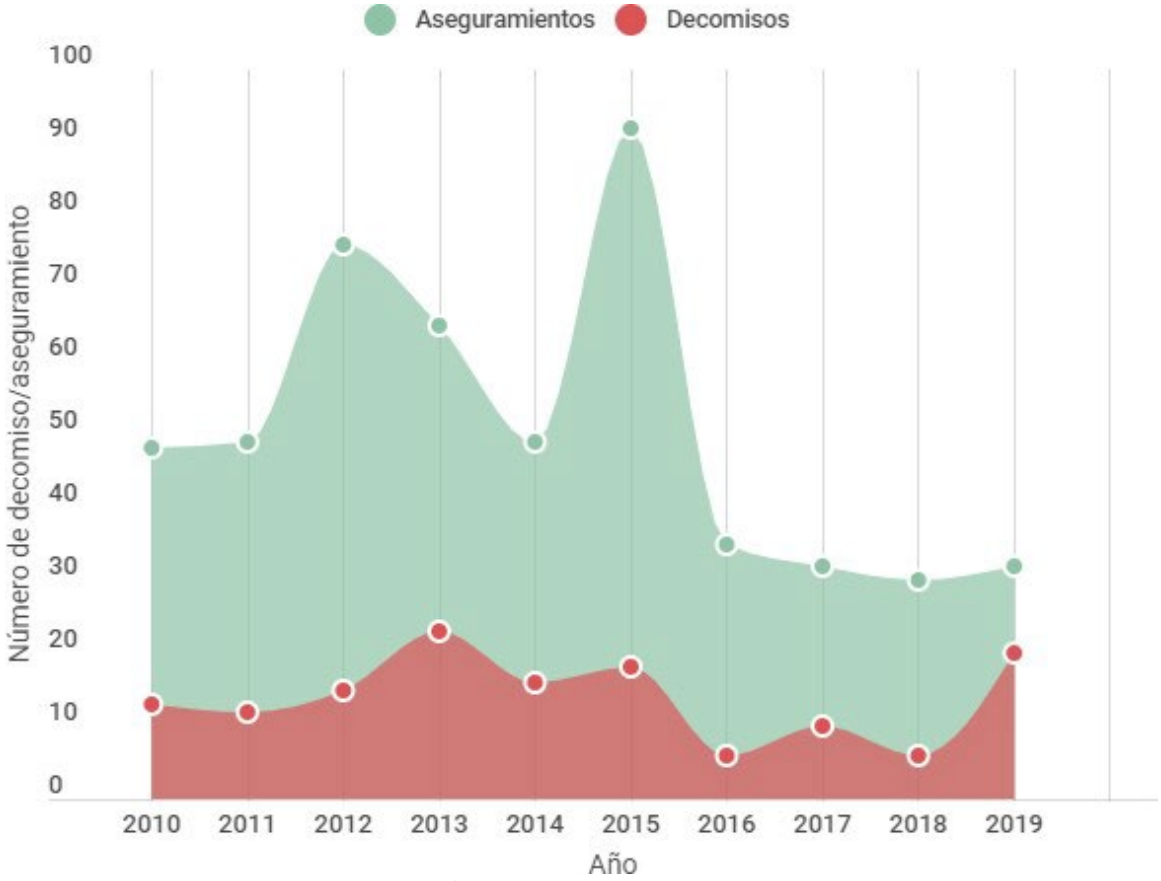


Figure 4. Seizures and seizures of primates made by PROFEPA during 2010-2019

The main reason for the seizures was mostly not having proven the legal origin of the specimens (95.68%) followed by not complying with a dignified and respectful treatment. The species that predominated in the seizures made by PROFEPA was *Ateles geoffroyi.*

Of these 146 cases of seizures with 369 primates that were not confiscated, it was because they did not conclude the administrative procedure, being mostly because they did not present the legal origin of the specimens (85.63%) (Table 2).

Table 2. Seizure reason in cases where primates were not seized

Reason for insurance	**Amounts**
I do not credit legal origin	316
Non-compliance Management plan	17
Legal origin and lack of respectful dignified treatment	7
Not having registration	11
Failure to comply Dignified and respectful treatment	17
Not having authorization	1
Total	369

Objetivo 2

A census of the presence of primates in Zoos was developed, especially those that come from confiscations and thus explore the management plans at the time of

their arrival, as well as the rehabilitation procedures and possible release through visits to the sites, evaluation and interviews.

A total of 20 interviews were obtained from zoos belonging to AZCARM (Association of Zoos, Breeders and Aquariums of Mexico). 100% of the primates that are born in captivity and that are exchanged with other zoos are in good condition and 100% of the primates that come from confiscations almost always arrive in poor condition. According to the response of the zoos, of these seized primates, 60% have a high mortality rate, 20% low and 20% of the zoos report zero, with different causes of death (Table 3).

Table 3. Percentage of the most common causes of death depending on the mortality rate

DEATH RATE			
CAUSES OF DEATH	**LOW**	**MEDIUM**	**HIGH**
Advanced age	100%		
Mistreatment			17.64%
Behavioral changes due to stress			29.40%
Gastrointestinal diseases (malnutrition and parasitosis)		100%	41.16%
Infected wounds			5.90%
Respiratory diseases			5.90%
TOTAL	100	100	100

Ateles geoffroyi is the most recorded native species in zoos and *lemur catta* is the most recorded exotic species (Figure 5). The reasons why individuals of primates remain in zoos are mostly due to births and purchase and traffic of these specimens (Figure 6), exotic primates are mostly born within the facilities, dominating the genera *lemur, papio* and *Callithrix* (Figure 7), while native primates enter these zoos mostly under the category of trafficking (Figure 8) for donations, followed by PROFEPA and private donations (Figure 9) having high income peaks between the year 2018 and 2020 (Figure 10). This minimal part of confiscated exotic species only represents 0.66% of the total species originating from trafficking, while of the total native species, 39.02% comes from illegal trafficking, being the most recurrent reason in them. The organisms that were part of an illegal trade represent 39.02% of the total native individuals within these sites and with respect to exotic species, only 0.66% are organisms that come from confiscation.

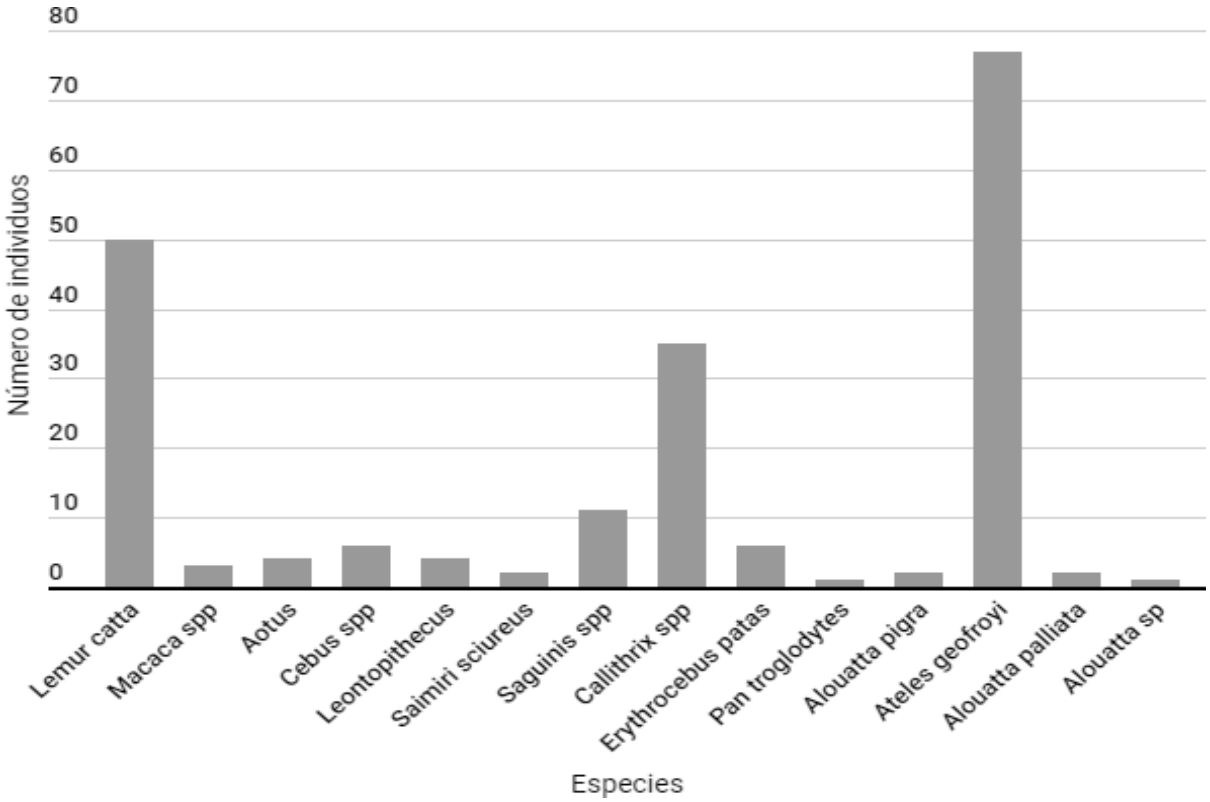


Figure 5. Species registered in the 20 AZCARM zoos.

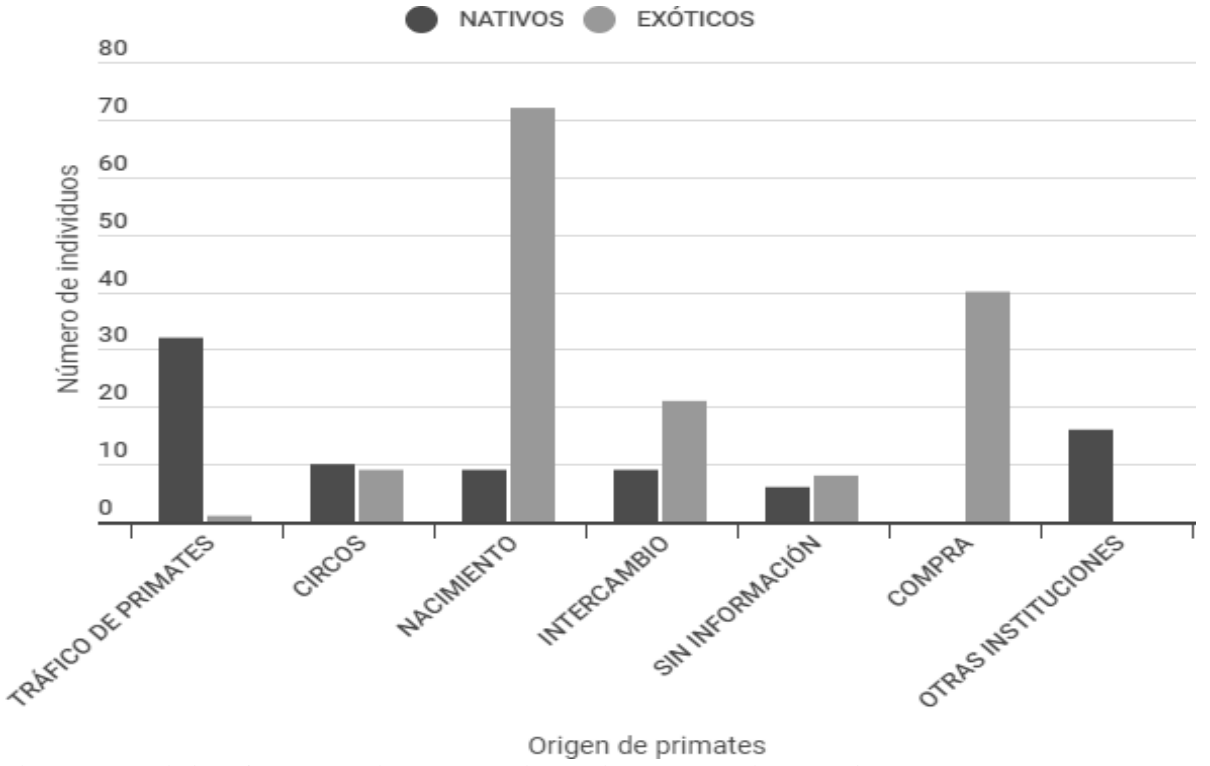


Figure 6. Origin of the exotic and native primates registered in the AZCARM zoos

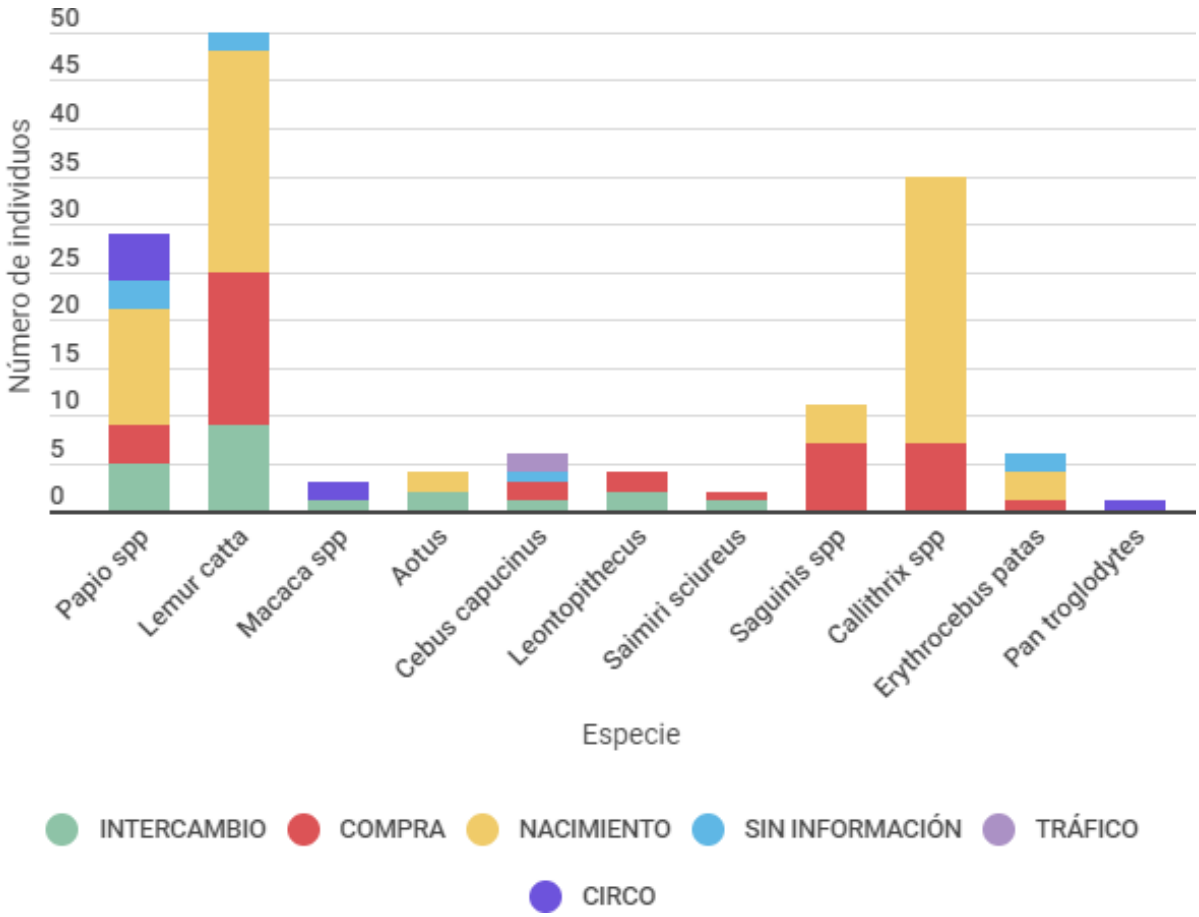


Figure 7. Origin of the exotic primates registered in the AZCARM zoos by taxonomic group

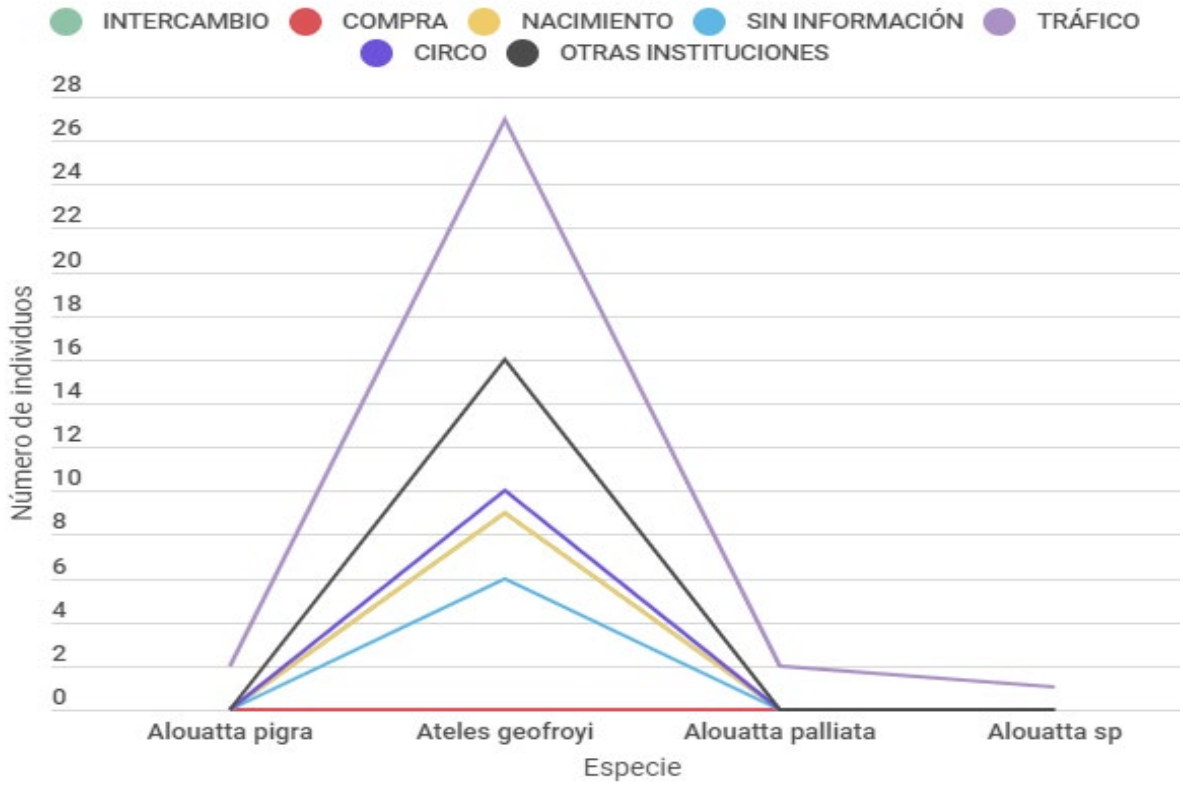


Figure 8. Origin of native primates registered in AZCARM zoos by taxonomic group

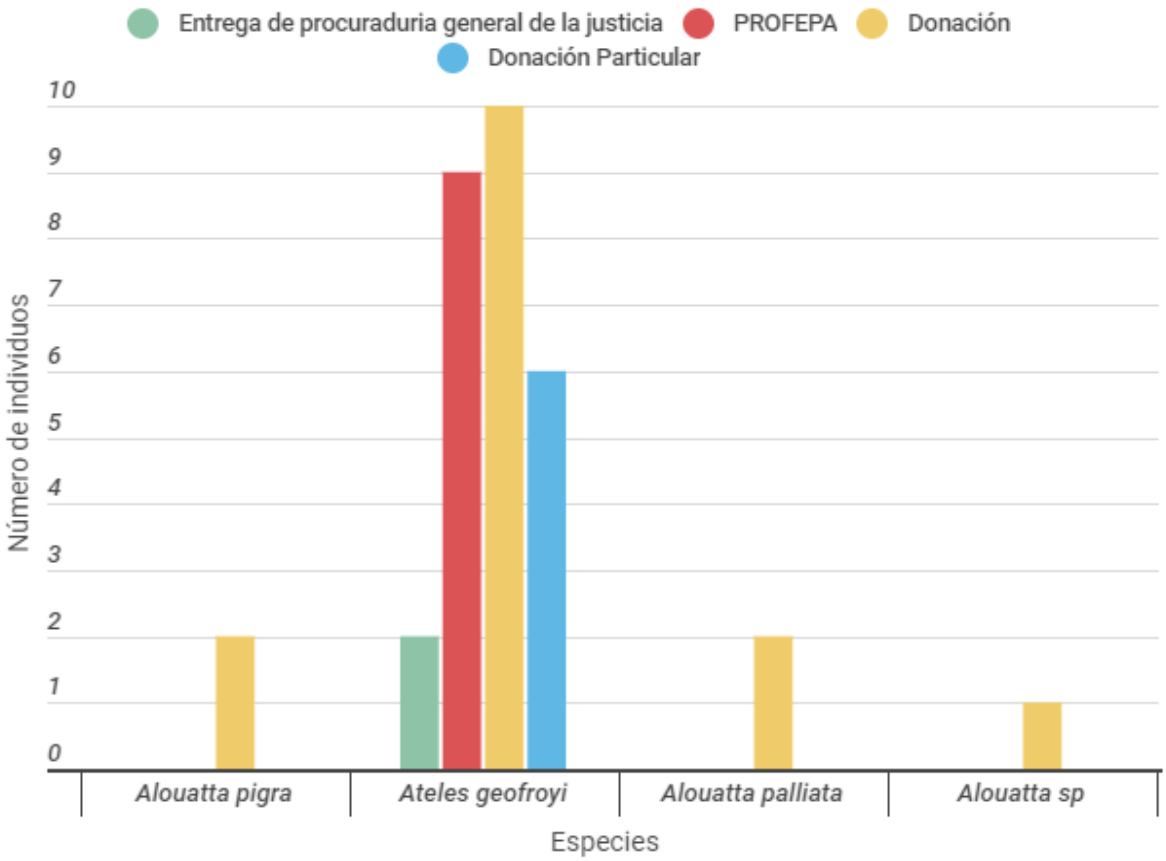


Figure 9. Origin of native primates seized and registered in AZCARM zoos by species

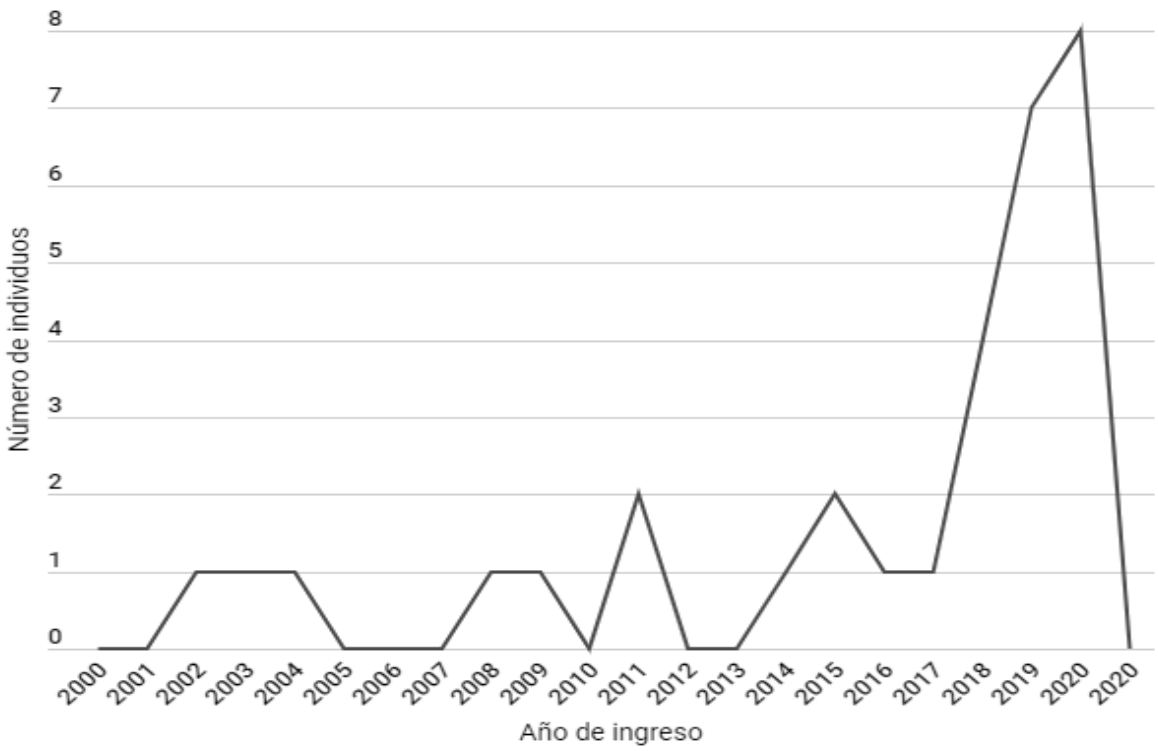


Figure 10. Annual income in AZCARM zoos of trafficked organisms

Situation of zoos regarding the entry of primates from confiscation INTERVIEWS:

Regarding the question:
To channel these received animals, would they refuse to receive them?
45% said that they would not receive them any more, 40% said that it could be, and 15% said that they would receive confiscated animals. The answers are conditional on whether these sites have space and/or resources, with some zoos operating only as temporary shelters.

Regarding the question:
Have people directly donated monkeys without the intervention of the Institutions?
47.36% said yes and 52.64% said no, although this institution must always be notified through a procedure to accept it.

Regarding the question:
Do you carry out or have they carried out rehabilitation when the monkeys come from confiscations?
57.9% said yes and 42.1% said no. The causes of not have been because it has not been necessary or because it is channeled to another institution before to carry out that work.

Regarding the question:
Do they carry out or have they carried out rescues of monkeys with or without the intervention of the Institutions in charge of this? Many?

20% said yes, as long as it is in collaboration with them and 80% said no because it is not in their faculties as a zoo.

Objective 3

Investigate through the CITES database the international trade of primates in terms

of imports and exports from Mexico to other countries in a period from 2000 to 2019.

Primate exports from Mexico

The CITES database reports a total of 88 cases of primate exports made by Mexico, which include 6,257 specimens of different species, mostly the three species that share distribution with Mexico (*Alouatta pigra, Alouatta palliata and Ateles geoffroyi*) with fluctuations during the period 2000 to 2018 (Figure 11).

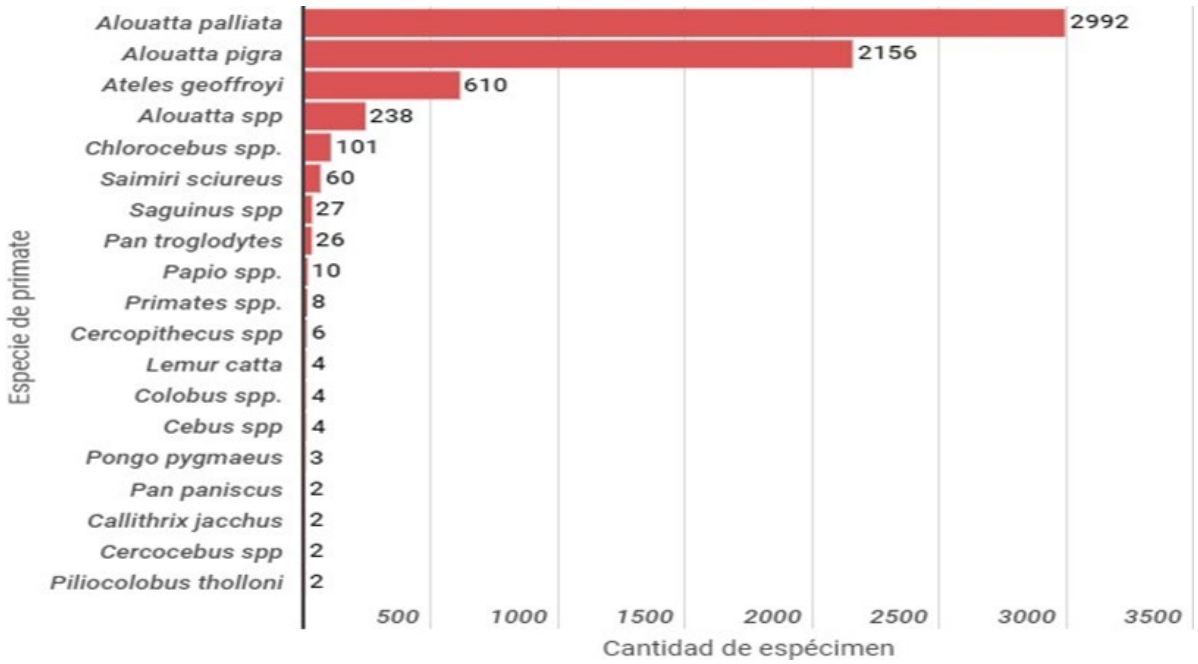


Figure 11. Number of specimens by species exported by Mexico in a period of 2000-2018

"Specimens" may include live individuals, trophies, derivatives, nails, hair, etc., but quantities are not always indicated. The six main countries to which Mexico exports primates are: United States (n=1,846 specimens), Great Britain (n=1,587), Spain (n=1,372), Germany (n=765), Japan (n=268), and Panama (n=117).

55.6% of the specimens exported by Mexico belong to CITES Appendix I and 44.4% to Appendix II. The origin of the exported specimens has been mostly "taken from the wild" (96%), followed by "pre- convention" (2.0%), captive-bred organisms (0.9%), unknown (0.6%), seized, (n=0.3%) and captive- born (0.2%) (Figure 12).

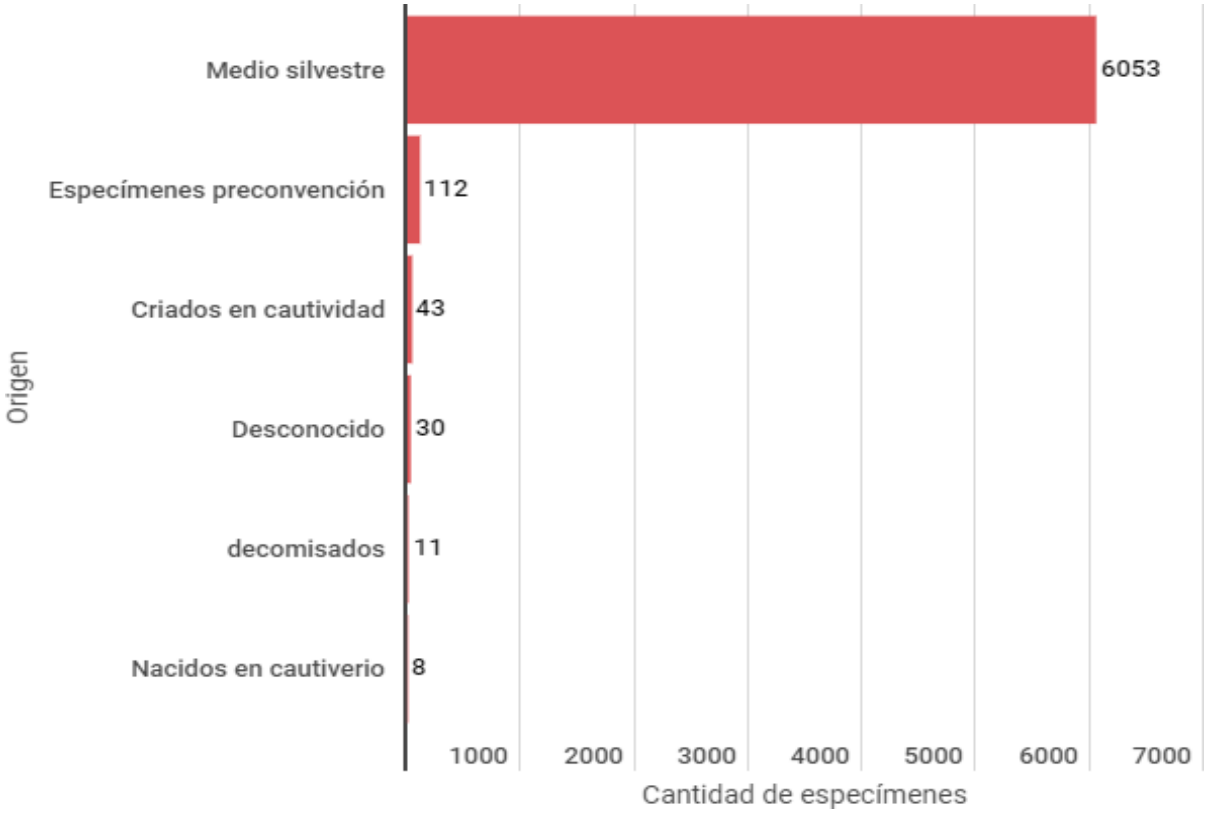


Figure 12. Origin of primate specimens exported by Mexico during the period 2000-2018

Of the 6,257 exported specimens, the purpose of the majority of exports (97.3%) was of a scientific nature (Table 4) in the term "scientific specimen (96.6%) (Table 5).

Table 4. Purpose of primate exports from Mexico during the period 2000-2018.

Puros	**No. of specimens**
Scientific	6089
Zoo	95
Circus and traveling exhibition	42
Personal item	10
Commercial	8
Educational	6
Captive breeding	5
Hunting trophy	2
Total	6257

Table 5. Term of exports of primates from Mexico during the period 2000-2018

Term	**No. of specimens**
Scientific specimen	6047
Live	143
Teeth	36
Bones	13

Sculptures	8
Trophy	3
Product with small fur	2
Bone sculptures	2
Piece of skin	1
Garment	1
Derivatives	1
Total	6257

Of the 6,053 specimens that come from the wild, CITES reports that they are scientific specimens, followed by only 92 live individuals taken from the wild (Table 6).

Table 6. Term of specimens exported by Mexico (period) from the wild

Term	**No. of specimens**
Scientific specimen	5916
Live	92
Teeth	36
Bones	5
Trophy	2
Garment	1
Piece of skin	1
Total	6053

Living individuals

Of the 143 live primates exported by Mexico during the 2000-2018 period, the majority corresponded to the *Saimiri sciureus* species (41.95%), followed by *Pan troglodytes* (18.18%) and *Saguinus midas* (18.18%) (Figure 13). These live individuals were primarily from the wild (n=92), followed by captive- bred (n=40), captive-born (n=8), and unknown (n=3). Of these, the vast majority had as their final destination zoos (66.43%) and traveling circuses and exhibitions (24.47%) (Table 7) mainly in the USA (Figure 14).

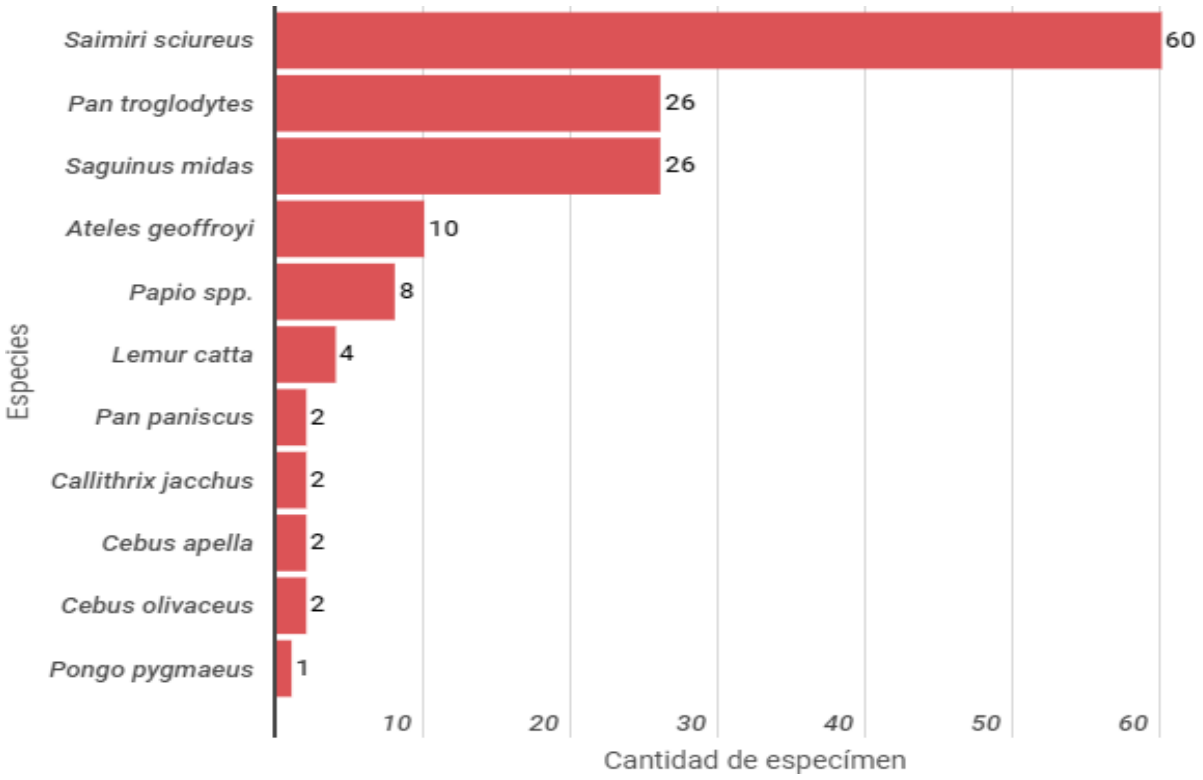


Figure 13. Live primates exported by Mexico during the period 2000-2018

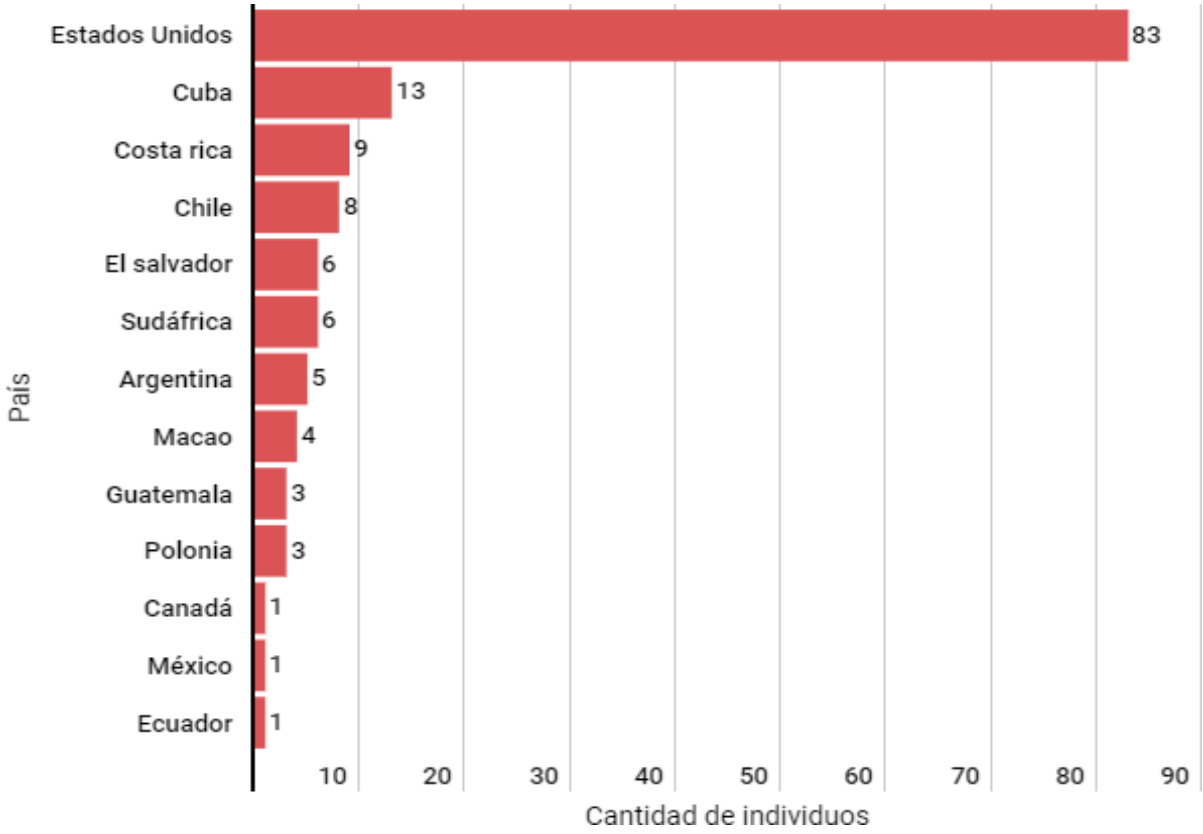


Figure 14. Importing countries of live primates during the period 2000-2018

Table 7. Purpose of exports of live primates from Mexico during the period 2000-2018

Purpose	**Live specimens (n)**
Zoo	95
Circuses and traveling exhibition	35
Commercial	6
Captive breeding	5
Personal item	2
Total	143

Exports of primates that share distribution with Mexico

Primate specimens whose distribution range includes several countries, including Mexico, represent 95.3% of the total specimens exported by Mexico, which include 6,437 specimens in the period from 2000 to 2018 (Figure 15).

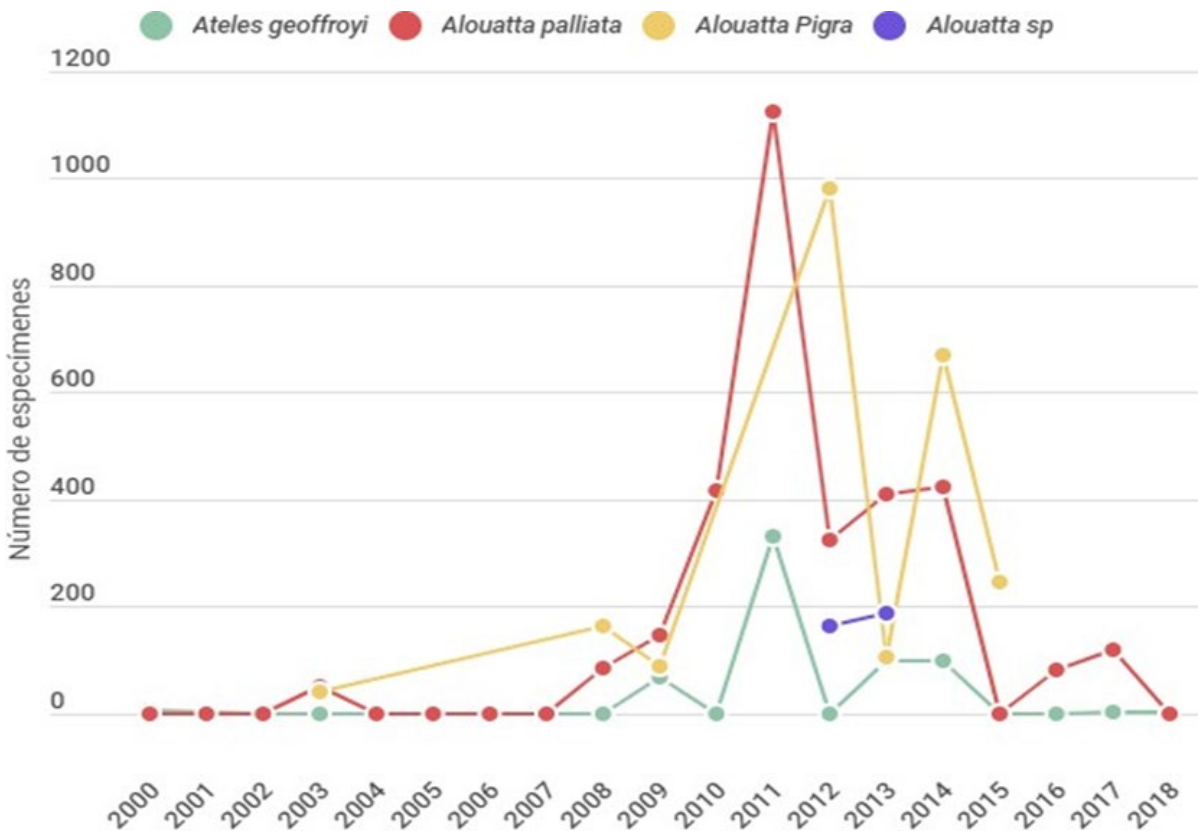


Figure 15. Specimens exported by Mexico of species whose distribution range includes Mexico.

The proportion by species was as follows; *Alouatta palliata* (49.5%), followed by *Alouatta pigra* 35.68%; *Ateles geoffroyi* 9.4%, plus 5.42% of the specimens of the genus *Alouatta* that could not be identified to the species level. For the case of *Ateles geoffroyi*, a special graph was made (Figure 16), in order to show the term in which it is commercialized, the purpose and the origin of said exports. For the genus

Alouatta it was not necessary, since 100% of the exports refer to the term: scientific specimen, Purpose: scientific and Origin: wild environment. Of the total specimens of these species exported to other countries, the purpose was mostly for scientific purposes (99.8%) followed by zoos (0.1%), captive breeding (0.06%) and commercial (0.01%).

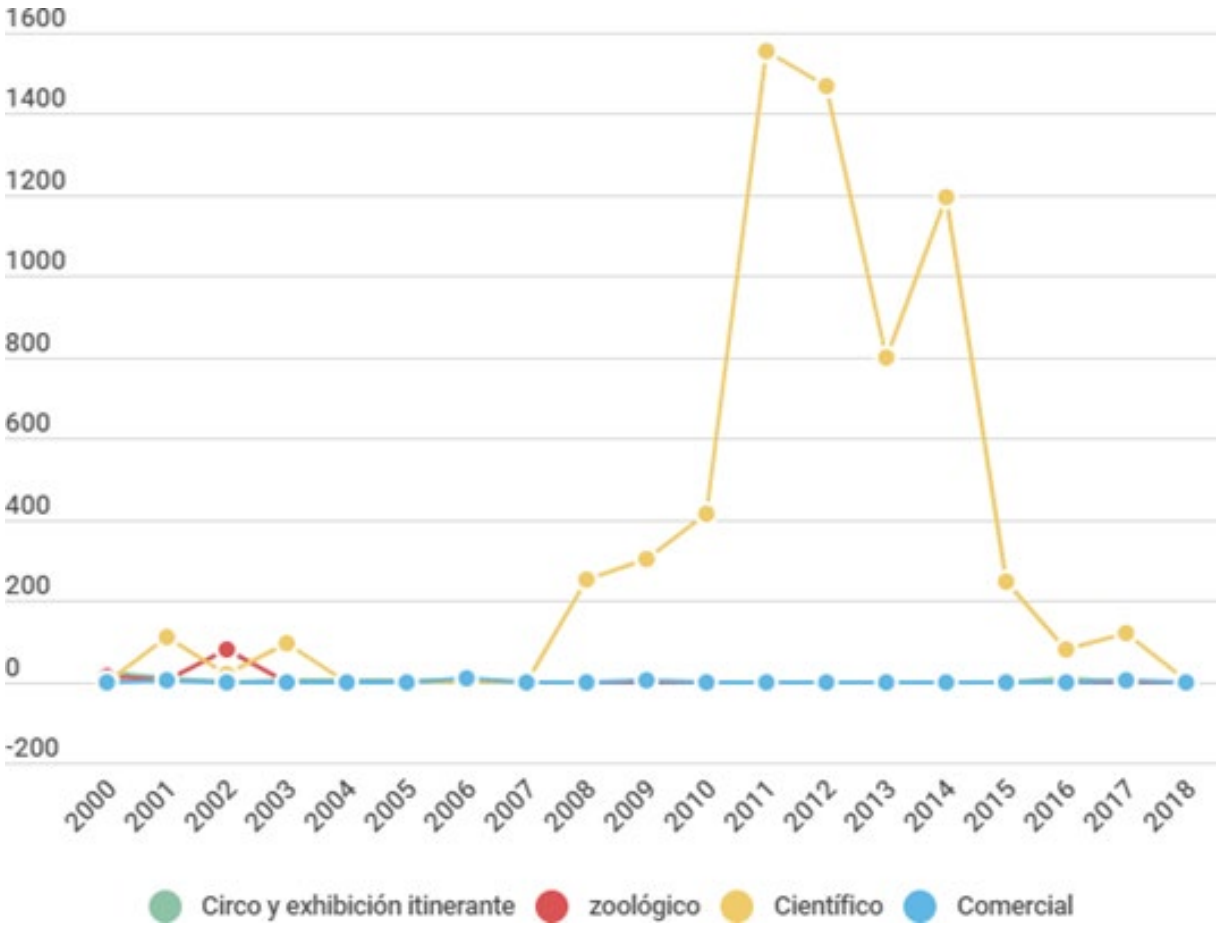


Figure 16. Specimens of *Ateles geoffroyi* exported by Mexico during the period 2000-2018 and their purpose

The main importing countries of primates from Mexico were the United States (n=1747), Great Britain (n=1487) and Spain (n=1372), followed by Germany (n=765), Japan (n=268), Unknown (n=200), Panama (n=90), Canada (n=30), South Africa (n=6), Poland (n=3), and Argentina (n=1) (Figures 17 and 18).

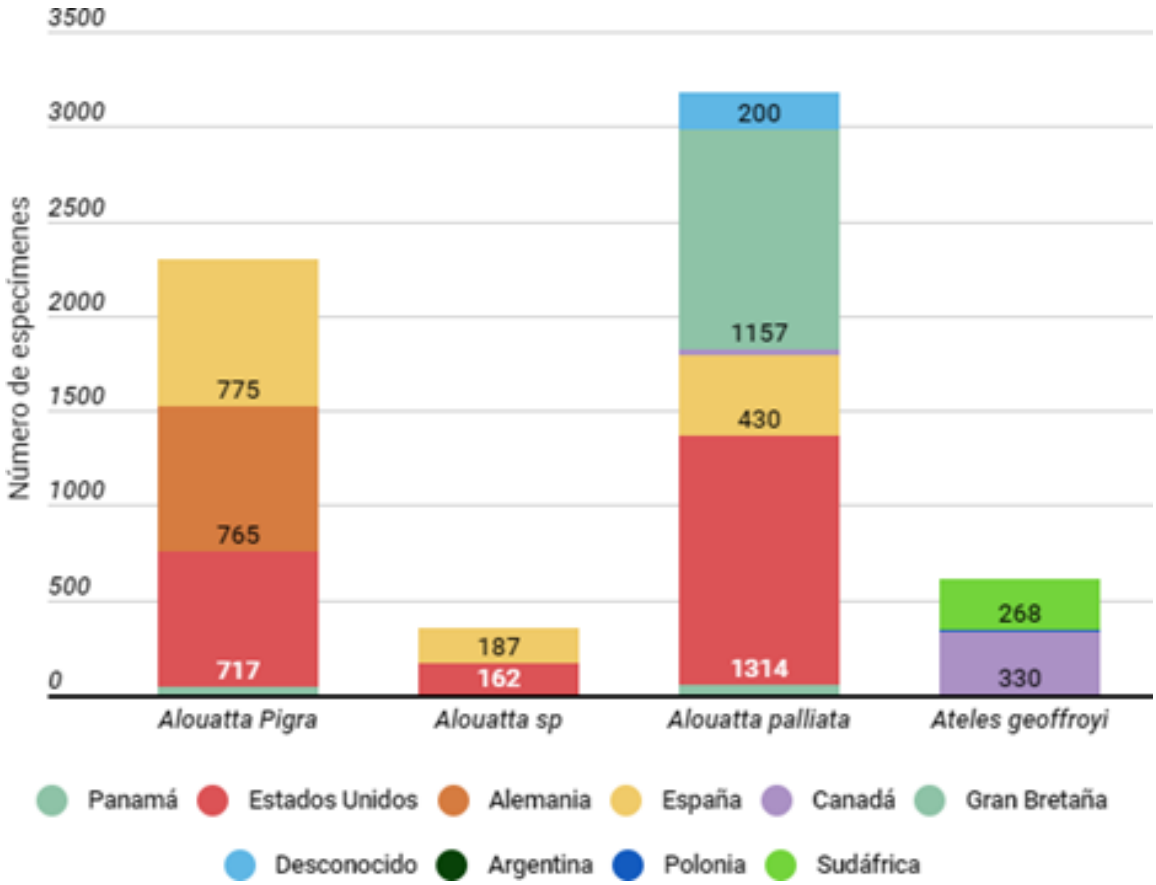


Figure 17. Main importing countries of primates from Mexico during the period 2000-2018

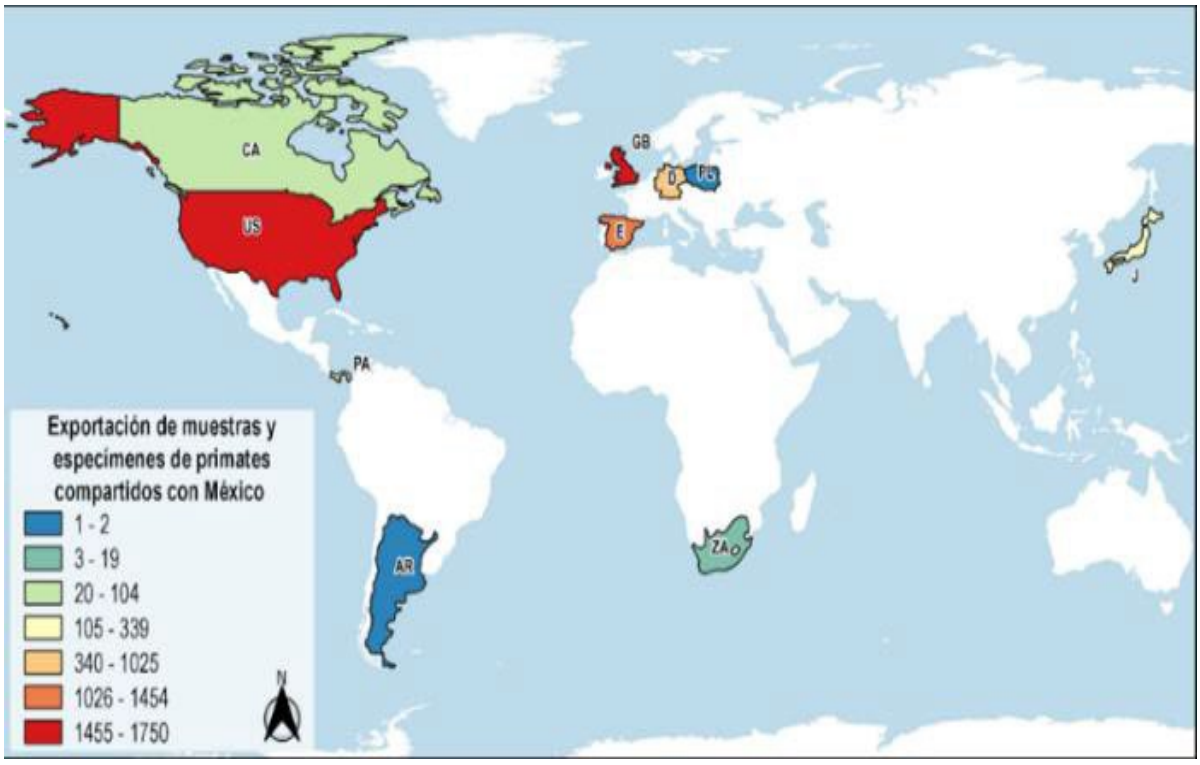


Figure 18. Main countries to which Mexico exports primate species shared with Mexico. CA: Canada, US: United States, PA: Panama, AR: Argentina, GB: Great Britain, E: Spain, D: Germany, PL: Poland, ZA: South Africa J: Japan.

Imports of primates during the period 2000-2018

A total of 407 cases of primate imports made by Mexico were recorded during the period 2000 to 2018, which included 54,830 specimens of different species (Figures 19 and 20).

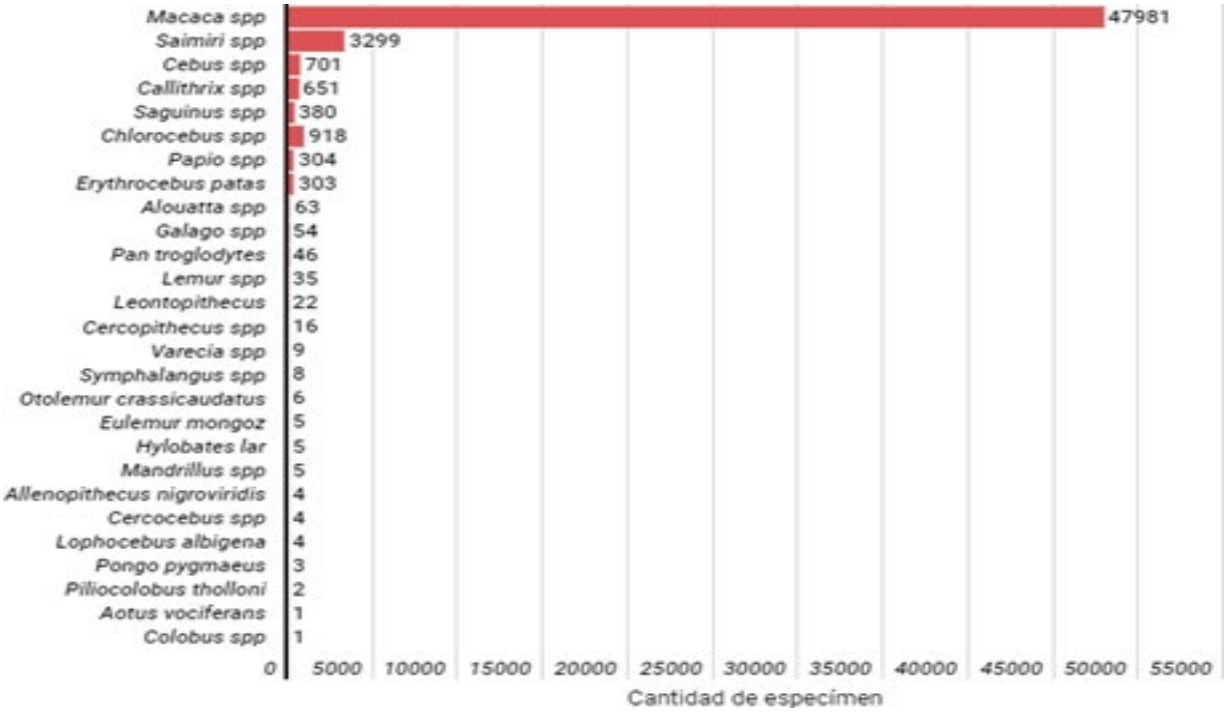


Figure 19. Imports of primates made by Mexico by species during the period 2000-2018

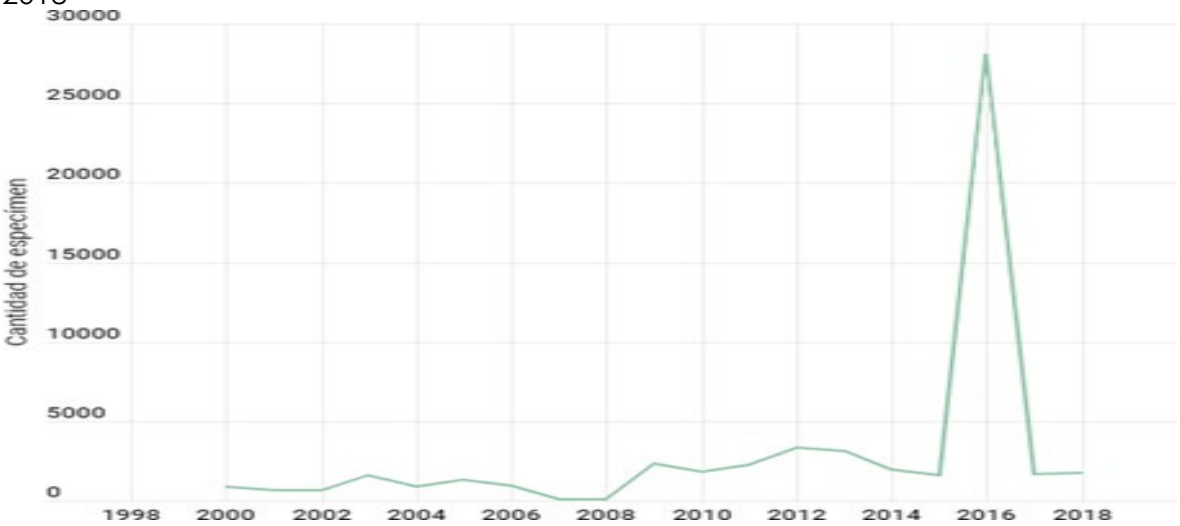


Figure 20. Imports of primates made by Mexico per year during the period 2000-2018

The country that exports the most primates to Mexico is the United States (84.59%), followed by Guyana (7.3%) and Mauritius (3.88%) (Figure 21).

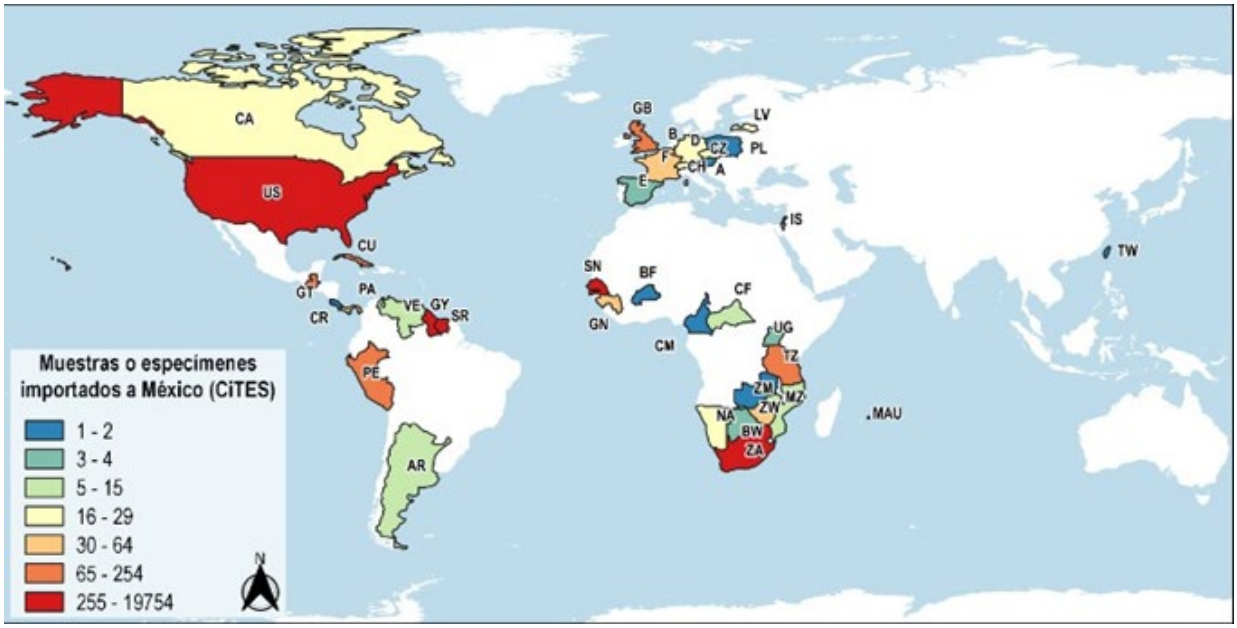


Figure 21. Main countries to which Mexico imports primates CA: Canada, US: United States, CU: Cuba, GT: Guatemala, CR: Costa Rica, PA: Panama, PE: Peru, AR: Argentina, VE: Venezuela, GY: Guyana, SR: Suriname, GB: Great Britain, E: Spain, F: France, B: Belgium, D:

Of the total specimens of primates imported by Mexico during the period 2000-2018, 87.21% are listed in Appendix II of CITES and 12.78% in Appendix I of said Convention. The origin of the imported specimens was mainly "captive bred" (66.74%), followed by "captive born" (18.38%) and from the wild (13.58%) (Table 8).

Table 8. Origin of primate specimens imported by Mexico during the period 2000-2018

Origin	**Specimens (n)**
Captive bred	37595
Born in captivity	9531
Wild environment	7041
Confiscated specimens	4
Pre-convention specimens	142
Unknown origin	517

Of the 54,830 specimens imported by Mexico, 75.87% were reported as "scientific specimens", followed by live individuals (14.24%) (Table 9). The purpose of most imports (75.87%) was for biomedical research, followed by commercial purposes (%) (Table 10).

Table 9. Mexican imports of primate specimens during the period 2000-2018, by term

Term	**Specimens (n)**
Scientific specimen	41,605
Live	7,811
Extract	3,778

Derivatives	1,361
Trophy	237
Skull	21
Sculptures	7
Bodies	6
Teeth	4

Table 10. Purpose for which the primate specimens were imported by Mexico during the period 2000-2018

Purpose	**Specimens (n)**
Medical (includes biomedical research)	44071
Commercial	8389
Scientific	1725
Hunting trophy	242
Captive breeding	170
Zoo	145
Circus and traveling exhibition	57
Unknown	12
Personal object	10
Educational	8
Total	54830

Commercial imports

Of the 54,830 specimens imported to Mexico between 2000 and 2018, only 15.30% were for commercial purposes (Figure 22). Of the specimens used for commercial purposes, we have that they are exotic species, with *Saimiri spp* and *macaca spp* being the most represented genera (Figure 23) and these commercialized organisms are live individuals (62.89%), followed by extracts (23.8%) and their fluctuation in the period 2000-2018 (Figure 24), having their origin in the wild (60.23%), while those born in captivity represent 20.37% (Table 11).

Figure 22. Annual imports of primates made by Mexico for the purpose of trade.

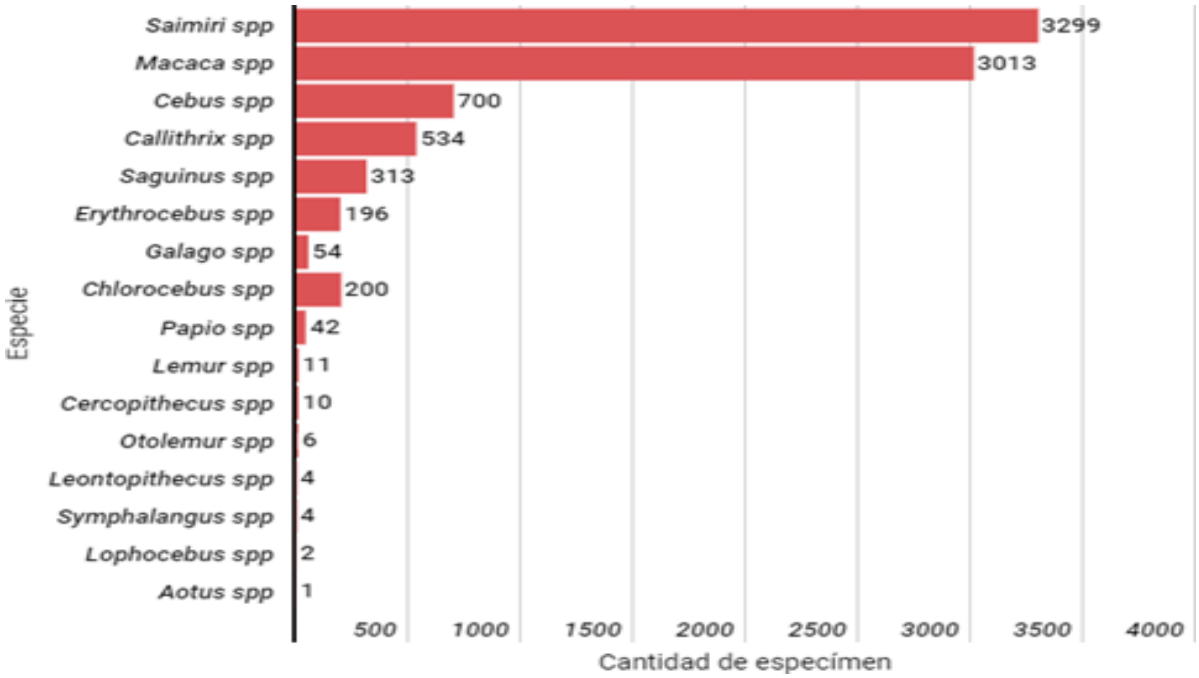


Figure 23. Imports of primates made by Mexico by gender during the period 2000-2018

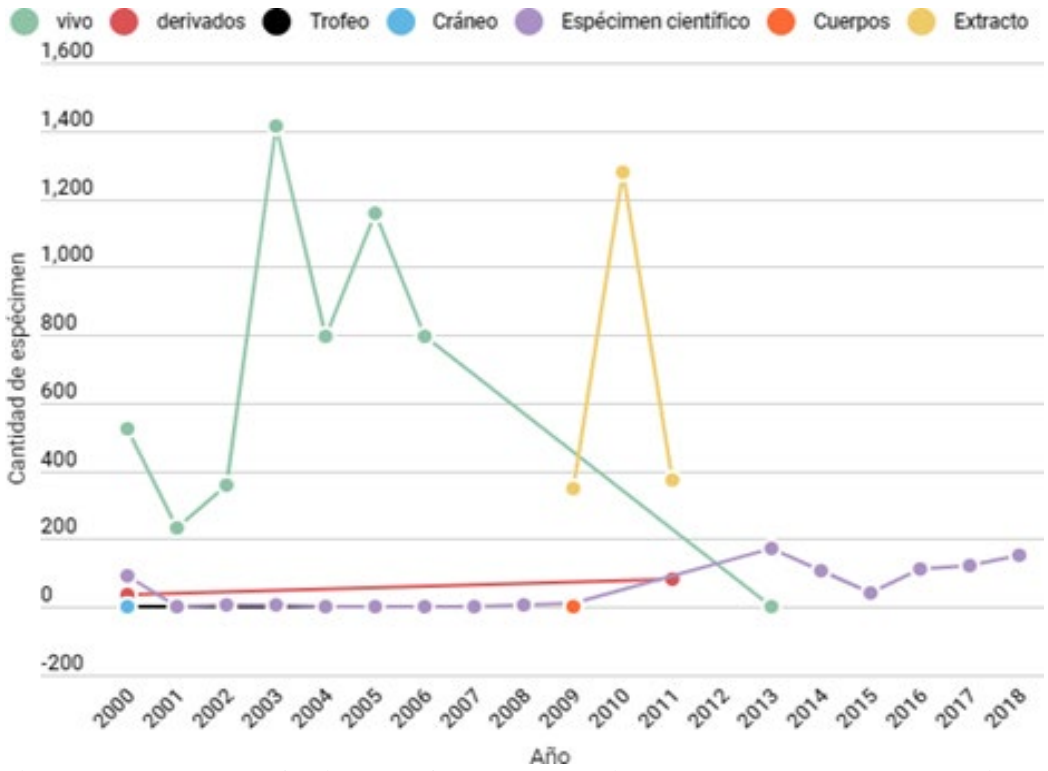


Figure 24. Imports of primates for commercial purposes made by Mexico during the period 2000-2018

Table 11. Origin of imports of primates for commercial purposes made by Mexico during the period 2000-2018

Origin	**Specimens (n)**
Wild Origin	5053
Born in captivity	1709
Captive bred	820
Preconvention	25
Confiscated	2

Imported wild-sourced specimens

Of the 54,830 specimens imported by Mexico during the period 2000-2018, 7,041 have been specimens from the wild, mainly live individuals (72.74%) (Table 12) for commercial purposes (70.72%) (Table 13). The countries that exported primates to Mexico for commercial purposes were mainly Guyana (53.82%) and the United States (19.86%).

Table 12. Specimens imported by Mexico from the wild by term

Term	**Specimens (n)**
Live	5122
Extract	1351
Scientific specimen	307
Trophy	234
Skull	21

Teeth	4
Bodies	2
Total	7041

Table 13. Purpose of Wild Sourced Specimens

Purpose	**Number of specimen**
Commercial	4973
Medical (including biomedical research)	1110
Scientific	697
Hunting trophy	239
Circus and traveling exhibition	10
Personal object	9
Unknown	3
Total	7041

Live specimens

Of the 54,830 specimens imported by Mexico during the period 2000-2018, 7,811 were reported as live individuals, mainly for commercial purposes (67.66%) (Table 14).

Table 14. Imports of live primates made by Mexico during the period 2000-2018 by purpose

Purpose	**Specimens (n)**
Commercial	5285
Scientific	1397
Medical (including biomedical research)	752
Captive breeding	170
Zoo	145
Circus and traveling exhibition	51
Unknown	9
Personal object	2
Total	7811