REPORT

APRIL 2022

WILDLIFE AND THE HUMANITARIAN EMERGENCY IN VENEZUELA:

A CRISIS THAT BESIEGES BIODIVERSITY

CLIMA21
OBSERVATORIO VENEZOLANO DE DERECHOS HUMANOS AMBIENTALES

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Content

Executive Summary

There is an essential interdependence between human rights and the conservation of biodiversity. Therefore, inadequate management of diversity can cause serious damage to human societies, as shown by the current COVID-19 pandemic, whose origin, as in other cases, seems to be connected to the irresponsible management of wildlife.

An accelerated loss of biological diversity is taking place in Venezuela, which may be influencing the violation of human rights. In this sense, the objective of this work is to understand the relationships between the existing humanitarian crisis in Venezuela and biodiversity, specifically wildlife.

The information for this work was obtained from the review of scholarly literature on wildlife conservation; reports and journalistic investigations related to this topic, and surveys of experts on the extraction of wildlife from its natural habitat.

The most relevant findings of this study are the following:

In the last sixty years, the consumption of wildlife species had been relegated to rural and indigenous communities. In these communities, the consumption of bushmeat can be an essential component of people's diet, reaching up to 100% in indigenous communities.

For decades, wildlife has been suffering a process of continuous loss that seems to have worsened in recent years as a result of the economic crisis. This situation has pushed some population groups to consume wildlife as a means of subsistence and, at the same time, facilitated the growth of illegal species trafficking, both by people who capture specimens to solve their individual economic problems, as well as by organized crime groups operating in the country.

On the other hand, the role of the State in terms of biodiversity management is perceived as insufficient. Similarly, the action aimed at preventing poaching and illegal trafficking in species seems to have a punitive approach that focuses on offenders from disadvantaged backgrounds.

Additionally, the economic and political crisis is forcing a significant number of professionals and researchers in environmental management to resign from their positions and even leave the country. Likewise, the situation of abandonment, harassment and destruction that public universities are suffering is affecting research programs and the training of professionals in these areas.

This complex situation seems to have a greater impact on wildlife populations and on the most vulnerable human groups that rely on natural resources. At the same time, the country has decreasing numbers of professionals who can generate information and implement adequate biodiversity management strategies.

Based on these conclusions, the Venezuelan State is urged, among other issues, to value the strategic importance of biological diversity; to rethink and strengthen the National Strategy for the Conservation of Biological Diversity with a human rights approach; and to promote training, access to information and participation in the conservation of biological diversity.

The role of the State in terms of biodiversity management is perceived as insufficient.

Introduction

For the United Nations, the full enjoyment of human rights, including the right to a safe, clean, healthy and sustainable environment, can only be achieved in environments where there is abundant biological diversity and healthy ecosystems[1].

The recent COVID-19 pandemic[2], as well as all the zoonotic diseases[3] that have affected humanity, are clear examples of how the indiscriminate intervention of natural habitats and the capture and inadequate management of wildlife can have devastating consequences.

1 UNEP. 2021. Key messages on human rights and biodiversity. Available: https://wedocs.unep.org/bitstream/handle/20.500.11822/35407/KMBio.pdf

2 Lawler, et al. (2021) The COVID-19 pandemic is intricately linked to biodiversity loss and ecosystem health,The Lancet Planetary Health, Volume 5, Issue 11, 2021, https://doi.org/10.1016/S2542-5196(21)00258-8.

3 Infectious diseases transmitted from vertebrate animals to humans.

It is clear that the long-term survival of societies depends on the search for a balance between the needs of human beings and the maintenance of biological diversity, within a framework of human rights.

Venezuela is suffering a serious humanitarian crisis, which due to its origin and characteristics has been defined as a complex humanitarian emergency[4]. It includes a deep economic crisis[5] which generated a massive impoverishment and food insecurity in a very important percentage of the population[6 7], situation further exacerbated by the COVID-19 pandemic.

In contexts of humanitarian crises, people in extreme conditions are forced to extract resources from nature, sometimes to the point of no return or costly restoration[8]. These destructive processes, in turn, disproportionately affect those who depend directly on nature, as well as those who are already in vulnerable situations [9 10] .

But on the other hand, Venezuela is one of the megadiverse countries of the world[11] and can therefore be considered to possess sufficient biological resources to cover a significant part of its food and other needs. Furthermore, this attribute may become a key factor in a possible transition toward sustainable development[12].

Likewise, it is important to bear in mind that subsistence hunting is an important source of protein and income for many people in rural and indigenous communities, and that the overexploitation of these resources can affect their access to adequate food[13].

In the last five years, an increasing number of reports related to the extraction of wildlife from its natural habitats have appeared in the Venezuelan media. In addition, this situation has been occurring in areas where this activity was not frequent or was being carried out by people who traditionally did not carry out these practices or did so only occasionally. In addition, these reports show an increase in the illegal trafficking of species of biological diversity.

4 Cartaya Febres, V, Reyna Ganteaume, F. y Ramsay, G. (2020) Venezuela emergencia humanitaria compleja: Respuesta Humanitaria, Desafíos para la Sociedad Civil. WOLA /Acción Solidaria. Recovered from:: https://www.wola.org/wp-content/uploads/2020/11/Informe-de-Vanessa-Cartaya.pdf

5 Millán-C. O. & Torrealba, W. (2021). La crisis económica venezolana en el contexto del covid-19. Cuadernos del CENDES. Dossier Venezuela: emergencia en salud y pandemia, 106: 73-102.

6 Landaeta–Jiménez, M. Sifontes, Y. y Herrera Cuenca, M. (2018) Venezuela entre la inseguridad alimentaria y la malnutrición. Anales Venezolanos de Nutrición. Volumen 31, No. 2. Available: https://www.analesdenutricion.org.ve/ediciones/2018/2/art-4/

7 UCAB (2020) Encuesta Nacional de Condiciones de Vida 2019 – 2020. En: https://www.proyectoencovi.com/informe-interactivo-2019

8 Halffter, G., Morello, J., Matteucci, S.D. y Solbrig, O. (1999) La biodiversidad y el uso de la tierra pp.17-27. En: Matteucci, S.D. Solbrig, O.T., Morello, J. y Halffter, G. Conceptos y ejemplos de Latinoamérica. EUDEBA. Available: https://www.researchgate.net/publication/269222358_La_Biodiversidad_y_el_uso_de_la_tierra

9 Peter, F. y Duci, T. (2018) Foraging to survive: Poverty and shifting consumer dynamics in rural Zimbabwe between 2000 and 2008. Chapter 4. Pg. 45-82 In: Mawere, M. (ed) Jostling Between "Mere Talk" & Blame Game? Beyond Africa's Poverty and Underdevelopment Game Talk. Langaa RPCIG.

10 Yamagiwa J. (2003) Bushmeat Poaching and the Conservation Crisis in Kahuzi-Biega National Park, Democratic Republic of the Congo, Journal of Sustainable Forestry, 16:3-4, 111-130, DOI: 10.1300/J091v16n03_06.

11 Aguilera, M., Azócar, A. y González-Jiménez, E. (2003) Venezuela un país megadiverso. pp. 1056-1072. En: Aguilera, M., Azócar, A. y González-Jiménez, E. Biodiversidad en Venezuela. Tomo II. Fundación Polar, Ministerio de Ciencia y Tecnología. Caracas.

12 De Lisio, A, (2016) Transición al desarrollo sustentable en Venezuela. ILDIS.

13 Matallana, C., C. A. Lasso y M. P. Baptiste (Comp.). 2012. Carne de monte y consumo de fauna silvestre en la Orinoquia y Amazonia (Colombia y Venezuela). Memorias del Taller Regional Inírida, Guainía (Colombia) 2012. Instituto de Investigaciones de Recursos Biológicos Alexander von Humboldt, Universidad Nacional de Colombia, Sede Orinoquia, Instituto de Estudios de la Orinoquia y Corporación para el Desarrollo Sostenible del Norte y el Oriente Amazónico. 72 pgs. Available: http://repository.humboldt.org.co/bitstream/handle/20.500.11761/31376/213.pdf?sequence=1&isAllowed=y

Based on this reality, it is possible that the crisis in the country is threatening both biological diversity and the most vulnerable human populations.

Based on this context, the objective of this report is to try to understand the possible relationships between the existing humanitarian crisis in Venezuela and biological diversity; specifically, on the wildlife used by various communities. This will allow the establishment of strategies to protect the most vulnerable groups of the population while improving existing diversity conservation measures.

IN THIS REPORT,
we will use the term "wildlife" in its broader sense to refer to non-domesticated terrestrial and aquatic vertebrates, except fish, which are generally used for human consumption (bushmeat) as well as a source of income and are part of various traditional cultural practices.

The term also encompasses species of vertebrates considered harmful to crops, livestock or humans.

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Sources of information

Subsistence hunting and the illegal extraction of wildlife from its natural habitats are difficult to assess; Therefore, information from different sources will be crossed to delineate current trends in this area.

The sources of information used in this research were the following:

1. Scholarly literature published from 1990 onwards documenting the pressure of hunting on wildlife, which will allow the establishment of a baseline to understand the long-term trends in this area;
2. Information published by the media on the illegal use of wildlife between 2011 and 2021. This will allow defining changes in the use of wildlife of interest to public opinion in the context of the Complex Humanitarian Emergency, and;
3. The results of a survey of expert researchers, members of NGOs in the field of environmental conservation, and veterinary students about their perception of possible changes in the pressure of use of wildlife, especially in their specific areas and territories of work or knowledge.

Results

1. Scientific papers

Thirty scientific articles and graduate theses published between 1990 and 2021 were collected. Articles published in the media in which specialized researchers contributed information relevant to this study were also reviewed. The most outstanding results are the following:

The practice of extracting wildlife from its natural habitats occurs mainly in rural and indigenous communities. In these areas, hunting is practiced either for consumption as a complement to agricultural production or to obtain economic resources that allow access to other goods[14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24].

Wildlife can be a very important resource for some communities and population groups. It offers an important contribution of both protein[25] [26] [27], and income to families[28] [29] [30] [31]. In certain rural areas, it can represent more than 30% of the source of protein, a percentage that increases to 100% in the case of some

14 Forti Torrens, M. (2014). Presión de Uso y Cacería Furtiva de Fauna Silvestre en el Parque Nacional San Esteban, Edo. Carabobo, Venezuela. Trabajo de ascenso presentado ante el Ilustre Consejo de la Facultad Experimental de Ciencias y Tecnología de la Universidad de Carabobo. Consejo de Facultad FaCyT. Reunión Ordinaria; Nro 9/2014.

15 Ferrer, A., Lew, D., Vispo, C. y Daza, F. (2013). Uso de la fauna silvestre y acuática por comunidades del bajo río Caura (Guayana venezolana) Biota Colombiana 14: 33-44.

16 Cordero, G. (1990). Aprovechamiento de la fauna silvestre en Barlovento, estado Miranda. Vida Silvestre Neotropical 2: 70-74.

17 Bisbal, F. (1994) Consumo de fauna silvestre en la zona de Imataca, edo. Bolívar, Venezuela. INTERCIENCIA 19(1): 11 pp.

18 Cova, M. y Prieto, A. (2011). Usos de la fauna silvestre en dos comunidades de la península de Araya, estado Sucre, Venezuela. Acta Biol. Venez. Vol. 31 (1):45-51.

19 Cova, M. y Prieto, A. (2015). Índice de valor de uso de la fauna silvestre en comunidades de la Península de Araya, Estado Sucre, Venezuela. Revista Electrónica Conocimiento Libre y Licenciamiento (CLIC) 11: 93 – 102.

20 Barrios-Garrido, H. A. (2018) Socio-economic drivers affecting marine turtle conservation status: causes and consequences. PhD Thesis, James Cook University.

21 Gómez, H. A., Molina, M., Castro M. y Tellería, M. B. (2008). Factores socioecológicos que amenazan a la vida silvestre en la vertiente sur del Parque Nacional Sierra Nevada, Venezuela. Producción Agropecuaria 1: 40 – 49.

22 Ojasti J. 2000. Manejo de Fauna Silvestre Neotropical. SI/MAB Series # 5. Dallmeier, F. (editor)Smithsonian Institution/MAB Biodiversity Program, Washington D.C. En: https://www.academia.edu/17447233/Manejo_de_Fauna_Silvestre_Neotropical_Juhani_Ojasti

23 Ferrer, A., Lew, D., Vispo, C. y Daza, F. (2013). Uso de la fauna silvestre y acuática por comunidades del bajo río Caura (Guayana venezolana) Biota Colombiana 14: 33-44.

24 Perozo-Díaz, I., Rojas-Cañizales, D., Espinoza-Rodríguez, N. y Barrios-Garrido, H. (2019). Tráfico ilegal de fauna silvestre en las principales carreteras del noroccidente de Venezuela. Ciencia 27 (1,2): 14 – 23.

25 Ferrer, et al. (2013) previously quoted.

26 Señaris, C. y Ferrer, A. (2012) Síntesis preliminar del uso de la fauna en la Guayana venezolana. En: Carne de monte y consumo de fauna silvestre en la Orinoquia y Amazonia (Colombia y Venezuela). Memorias del Taller Regional Inírida, Guainía (Colombia). (Matallana, y col. (Comp.)). Instituto de Investigaciones de Recursos Biológicos Alexander von Humboldt, Universidad Nacional de Colombia, Sede Orinoquia, Instituto de Estudios de la Orinoquia y Corporación para el Desarrollo Sostenible del Norte y el Oriente Amazónico. 72 pgs.

27 Stachowicz I, Ferrer-Paris JR, Sanchez-Mercado A. (2021). Shifting cultivation and hunting across the savanna-forest mosaic in the Gran Sabana, Venezuela: facing changes. PeerJ 9:e11612 http://doi.org/10.7717/peerj.11612.

28 Cordero (1990) previously quoted.

29 Marín-Espinoza, G., Guevara-Vallera, S., Prieto-Arcas, A., Muñoz-Gil, J. y Carvajal-Moreno, P. (2011). Comercialización Ilegal de Aves Silvestres: un Caso en Venezuela. The Biologist (Lima) 9(1): 38-52.

30 Cabrera, A. y Blanco, V. (2012). Aprovechamiento de la fauna silvestre por parte de las comunidades indígenas Warao del estado Delta Amacuro, delta del Orinoco, En: Carne de monte y consumo de fauna silvestre en la Orinoquia y Amazonia (Colombia y Venezuela). Memorias del Taller Regional Inírida, Guainía (Colombia) 2012. (Matallana, y col. (Comp.)). Instituto de Investigaciones de Recursos Biológicos Alexander von Humboldt, Universidad Nacional de Colombia, Sede Orinoquia, Instituto de Estudios de la Orinoquia y Corporación para el Desarrollo Sostenible del Norte y el Oriente Amazónico. 72 pp.

31 Stachowicz I, Ferrer-Paris JR, Sanchez-Mercado A. (2021). Shifting cultivation and hunting across the savanna-forest mosaic in the Gran Sabana, Venezuela: facing changes. PeerJ 9:e11612 http://doi.org/10.7717/peerj.11612.

indigenous communities[32] [33] [34]. Likewise, the inhabitants of these communities capture and trade wildlife when they do not have enough resources to buy food or materials[35]. Therefore, there is a relation between the survival of wild species and the well-being of the communities that consume them[36]. Additionally, many workers exploit natural resources in times of crisis as an alternative source of income and food[37]. Indeed, commercial hunting and fishing have become particularly important in areas where agricultural productivity or access to employment is limited[38].

The exploitation of wildlife, in any of its forms, seems to be exerting increasing and unsustainable pressure on several species. The studies reviewed showed the negative effects of hunting on populations of different groups and species of wild animals. This includes manatees, river dolphins, sea and terrestrial turtles, felines, and different groups of birds, including passerines, psittacines (parrots, parakeets and macaws) and cracids (Guans, Chachalacas, and Curassows), among

32 Señaris, C. y Ferrer, A. (2012) Síntesis preliminar del uso de la fauna en la Guayana venezolana. En: Carne de monte y consumo de fauna silvestre en la Orinoquia y Amazonia (Colombia y Venezuela). Memorias del Taller Regional Inírida, Guainía (Colombia). (Matallana, y col. (Comp.)). Instituto de Investigaciones de Recursos Biológicos Alexander von Humboldt, Universidad Nacional de Colombia, Sede Orinoquia, Instituto de Estudios de la Orinoquia y Corporación para el Desarrollo Sostenible del Norte y el Oriente Amazónico. 72 pgs.

33 Stachowicz I, Ferrer-Paris JR, Sanchez-Mercado A. (2021). Shifting cultivation and hunting across the savanna-forest mosaic in the Gran Sabana, Venezuela: facing changes. PeerJ 9:e11612 http://doi.org/10.7717/peerj.11612.

34 Vispo, C. (1998). Uso Criollo Actual de la Fauna y su Contexto Histórico en el Bajo Caura. Memoria Sociedad de Ciencias Naturales La Salle, 149: 115-144.

35 Cova, M. y Prieto, A. (2011). previously quoted.

36 Matallana et al. (2012) previously quoted.

37 Rodríguez, J. P. (2000) Impact of the Venezuelan economic crisis on wild populations of animals and plants. Biological Conservation 96: 151-159

38 Stachowicz I, Ferrer-Paris JR, Sánchez-Mercado A. (2021). Shifting cultivation and hunting across the savanna-forest mosaic in the Gran Sabana, Venezuela: facing changes. PeerJ 9:e11612 http://doi.org/10.7717/peerj.11612.

other species (See: [39] [40] [41] [42] [43]). These changes are perceived by the local populations themselves, who must travel ever greater distances to find the most desirable species [44] [45].

One of the studies reviewed concluded that 34 species of Venezuelan wildlife that are habitually consumed or trafficked require special management for their conservation, including thirteen of them considered to be in varying degrees of danger of extinction[46].

There is a growing illegal trade in wildlife species. This activity is exerting negative effects on different species[47] [48]. This illegal trade is not limited to the traditional sale of animals on roads and local markets but has also become part of international networks of illicit trafficking of animal species[49]. One of the studies carried out on this subject estimated that this activity in Venezuela is responsible for the trade of more than 900 thousand specimens every year, involving a market of more than 300 million dollars per year[50] .

Researchers perceive a growing conflict between human populations and super predators[51]. This conflict has two sides: On the one hand, a traditional conflict that involves the hunting of these predators, such as felines, crocodilians (alligators and crocodiles) and other species that can be hunted for trade or recreation, "retaliation", or as possible prevention against attacks on cattle and other domestic species[52] [53].

39 Forti Torrens (2014) previously quoted.

40 Barrios-Garrido, H. y Montiel Villalobos, M. (2005). Observaciones sobre la distribución y situación actual del Manatí Trichechus manatus (Sirenia: Trichechidae) en el Sistema del Lago de Maracaibo. ANARTIA. 18. 1-12.

41 Barrios-Garrido, H., De Turris-Morales, K. y Espinoza-Rodríguez, N. E. (2021). Guiana Dolphin (Sotalia guianensis) in the Maracaibo Lake System, Venezuela: Conservation, Threats, and Population Overview. Front. Mar. Sci. 7: 594021. doi: 10.3389/fmars.2020.594021

42 Marín-Espinoza et al. (2011) previously quoted.

43 Jędrzejewski, W., Carreño, R., Sánchez-Mercado, A., Schmidt, K., Abarca, M., Robinson, H. S., … Zambrano-Martinez, S. (2017). Human-jaguar conflicts and the relative importance of retaliatory killing and hunting for jaguar (Panthera onca) populations in Venezuela. Biological Conservation, 209, 524–532. doi:10.1016/j.biocon.2017.03.025

44 Lugo-Morín, D.R. (2007). Aves de caza del grupo indígena E'ñepa de Guaniamo, Venezuela. Ecosistemas 16 (2): 86-97.

45 Stachowicz (2021) previously quoted.

46 González Fernández, M.J. (2015) Gestión de fauna silvestre utilizada como fuente de alimento por comunidades rurales e indígenas de Venezuela. Tesis para optar al grado de: Máster en Gestión y Auditorías Ambientales. Fundación Universitaria Iberoamericana (FUNIBER) Valencia. Mecanografiado.

47 Rodríguez (2000) previously quoted.

48 Sánchez –M., A., Asmüssen, V, Rodríguez, J. P., Moran, L., Cardozo, A. y Morales, L. I. 2017. Illegal trade of the Psittacidae in Venezuela. Oryx, Pp 1 -7. doi:10.1017/S003060531700120X.

49 Sánchez-Mercado et al. (2016) citado previamente.

50 Asmüssen Soto, M. (2009) Estimación del comercio ilegal de fauna silvestre a tres escalas espacio temporales: global, regional y nacional. Trabajo de grado presentado como requisito parcial para optar al Título de Magister en Ciencias mención Ecología. Instituto Venezolano de Investigaciones Científicas (IVIC) Caracas.

51 Predators at the top of a food chain, without natural predators.

52 Wlodzimierz J. et al. (2011) Jaguar conservation in Venezuela against the backdrop of current knowledge on its biology and evolution. Interciencia. Dec. 2011, vol. 36 nº 12.

53 Jędrzejewski, et al. (2017) previously quoted.

Also, increased hunting pressure on certain species may lead species such as jaguars to compete for prey with humans[54].

2. Media Sources

A total of 120 articles on the illegal extraction and use of wildlife mainly published by national media were collected. Eighty-five of them mentioned reports of different cases of poaching and possession of wildlife, and 28 to administrative and judicial procedures opened by organs such as the Ministry of Ecosocialism (MINEC), the Bolivarian National Guard and the Public Ministry. Seven of the articles reported on wildlife conservation programs carried out by State entities.

Additionally, 18 journalistic investigations on issues related to the conservation of wildlife were collected, including interviews with key informants, such as researchers and members of non-governmental organizations (NGOs), about the problem of the extraction of wildlife from its natural habitat.

The most relevant findings of this compilation are the following:

Although there is not a clear trend, it seems that the number of journalistic reports related to wildlife increases over time, from a minimum of 3 in 2011 to the 18 articles mentioned for 2020. Likewise, from 2017 onwards, the number of journalistic investigative works, which include interviews with specialists and other political and economic considerations, increases.

In 72% of the articles under review, the interviewees believed that there is an increase in the use of hunting as a means of obtaining food or income. They also affirmed that this increase is related to the crisis that the country is experiencing.

The reports describe situations that have occurred in different regions of the country, including the states of Zulia, Lara, Falcón, Bolívar, Delta Amacuro and even the Capital District, in the city of Caracas.

54 Soto, J. (2020) Bióloga venezolana obtiene premio por trabajo sobre conservación de jaguares. El Estímulo. Available: https://elestimulo.com/biologa-venezolana-obtiene-premio-por-trabajo-sobre-conservacion-de-jaguares/

The journalists or the people denouncing the situations do not always seem to clearly distinguish the different motivations linked to the illegal possession of wildlife. Despite this, the highest percentage of cases reported in all years are related to the illegal trade or trafficking of species.

This last result could be due to the fact that the cases most frequently exposed by the media are related to the hunting of charismatic species [55] that are of greatest interest to illegal trade networks and whose capture or death can be shocking for a sector of public opinion. In contrast, subsistence hunting or small-scale possession often goes unnoticed because it is not considered a newsworthy event. In spite of this, several reports were obtained presenting the situation of people who are resorting to the consumption of species such as iguanas and turtles as an alternative to the scarcity of food or lack of money to obtain it.

One issue that stands out in some of the reports under review is the cases of consumption of wild species that were not previously part of the diet of the local population, such as flamingos and anteaters, as well as the theft of captive fauna from zoos.

Additionally, the information in the reports suggests an increase in hunting pressure on wildlife species such as manatees, dolphins, sea and land turtles, caimans, deers, wild rabbits, partridges, iguanas, chachalacas, and raccoons, among other species. The consumption and sale of bushmeat has also increased in some regions.

In the articles referring to the actions of State agencies, 19 of the cases reported seizures of animals and legal charges against persons who were illegally in possession of wildlife specimens. In all the reports, the number of animals seized was relatively small. The largest numbers of seized specimens were birds, mostly parrots (between 5 and 23 seized specimens were reported).

Although the information is not always clear, in most cases people kept the animals with the intention of selling them. In spite of this, it was not reported in any case whether investigations were made into the possible involvement of criminal networks. On the other hand, in some of the situations reported, it can be assumed that the motive could be the

55 Species that have some kind of subjective appeal that makes them interesting, important or popular to some groups of people. For a more rigorous discussion of the concept see: Ducarme, F., Luque, G. y Courchamp, F. (2013). What are "charismatic species" for conservation biologists ?. BioSciences Master Reviews. 1. 1-8

possible precarious economic condition of the people involved[56].

Seven of the articles mentioning actions by State agencies refer to conservation programs carried out mainly by the Ministry of Ecosocialism. All the cases refer to breeding and release programs for sea and freshwater turtles and crocodilians. On the other hand, the creation by the Public Prosecutor's Office of a Special Prosecutor's Office with Jurisdiction over Domestic and Wild Fauna is noteworthy[57].

Several experts highlight the scarce financial support from the State for conservation programs, zoos and other facilities that support the conservation of wildlife, as well as the lack of surveillance in critical areas such as National Parks and coastal zones.

Some of the interviewees declared that the competent authorities generally fail to act on the criminal groups and organizations involved in the illegal trafficking of wildlife.

They also express concern about the impact of the economic and political crisis on researchers, wildlife management specialists and staff of government agencies in charge of environmental conservation, a situation that has led many to resign from their positions and even to emigrate.

3. Survey results

Seventy surveys were sent to researchers involved in biodiversity conservation, of which 26 (37%) were answered. Among those who responded, 76% indicated that they have conducted research work with frequently hunted wildlife species.

The most relevant results of this survey are as follows:

- 80% of the respondents indicated that the abundance of the species studied has decreased.
- 70% state that hunting and/or illegal extraction from natural habitats is one of the main reasons for this effect.
- 95% of those surveyed have observed or recorded wildlife extraction activities by the inhabitants of the areas they visit.

56 Dos ciudadanos fueron detenidos en Barquisimeto por intentar vender dos morrocoyes (tortugas terrestres) Available: https://ultimasnoticias.com.ve/noticias/pulso/detienen-a-dos-hombres-por-vender-tortugas-en-barquisimeto/

57 Roman, A. (2020) Crean Fiscalía Especial con Competencia en Fauna Doméstica y Silvestre. Available: https://ultimasnoticias.com.ve/noticias/mas-vida/crean-fiscalia-especial-con-competencia-en-fauna-domestica-y-silvestre/

- 66.7% indicated that the frequency of the extraction activity by residents has increased in the last two years compared to 2015.
- 84% of those surveyed believe that the increase in hunting pressure is related to the current economic situation and that the product of hunting is used as a food supplement and/or to obtain extra economic resources for family sustenance.
- According to 79.2% of those surveyed, the inhabitants of the areas they frequent have told them that the abundance of the species they hunt has decreased.
- According to those surveyed, the greatest hunting pressure is exerted on 26 species, most of them large and medium-sized mammals.

In addition, it is worth mentioning some non-numerical aspects provided by the respondents.

The only researcher who responded that hunting pressure has decreased in the area where he works indicated that this was due to the fact that hunters do not have access to cartridges for firearms. On the other hand, another indicated that residents in the area he studied had told him that the abundance of some species has decreased due to: “Hunting pressure due to lack of income and food and demand from miners”.

Likewise, opinions were received from 8 veterinary science students of the Universidad Nacional Experimental Francisco de Miranda (UNEFM) who work or live in rural areas. Some the most relevant responses were:

- “People are hunting out of necessity and they do it frequently”.
- “Hunting is taking place in the Médanos de Coro National Park because I have detected wire traps to catch rabbits, and we have seized iguanas”.
- All the interviewees hunt or know people who do.

- All respondents indicated that people who have hunted told them that the abundance of animals has decreased.

CONCLUSIONS

Establishing the status of wildlife in a large country or territory is a task that requires sufficient and adequate information on a broad variety of species in equally heterogeneous geographic and ecological contexts.

This need for information is more pressing when it comes to understanding the impact of the exploitation of this component of biodiversity since this activity depends on multiple local social, economic and cultural variables.

It is not possible to achieve this condition in today's Venezuela because information on all aspects of environmental management is scarce. The cause of this problem lies on the one hand in the lack of access to environmental information generated by governmental opacity[58] [59] [60], together with the institutional weakness of the Venezuelan State in environmental matters [61] [62]. But at the same time, this lack of information is deepened by the progressive dismantling of Venezuelan public universities[63] and research centers, including training and environmental research programs[64] [65] that were the main generators

58 Gutiérrez Torres, J. (2020) Crisis en Venezuela: gobierno censura información medioambiental y científica. Mongabay. En: https://es.mongabay.com/2020/01/crisis-en-venezuela-censura-informacion-medioambiental/

59 Inojosa, C.V. «Recurrimos a IPYS (2021) ¿Por qué es difícil realizar el periodismo ambiental en Venezuela? En: https://www.servindi.org/02/01/2021/por-que-es-dificil-realizar-el-periodismo-ambiental-en-venezuela fuentes secundarias por la falta de datos oficiales de ambiente»https://transparencia.org.ve/entrevista-3-ecocidio-la-responsabilidad-de-la-corrupcion/

60 IPYS (2021) ¿Por qué es difícil realizar el periodismo ambiental en Venezuela? Available: https://www.servindi.org/02/01/2021/por-que-es-dificil-realizar-el-periodismo-ambiental-en-venezuela.

61 Rodríguez (2000) citado previamente.

62 Sánchez-Mercado et al. (2017) citado previamente.

63 Aula Abierta (2020) Afectaciones a la educación ambiental de calidad y a la biodiversidad en las universidades públicas venezolanas. En: http://aulaabiertavenezuela.org/wp-content/uploads/2021/04/Informe-Preliminar-Situaci%C3%B3n-de-los-espacios-universitarios-de-conservaci%C3%B3n-ambiental-en-Venezuela-VOL-2.pdf.

64 Aula Abierta (2020) El declive de la universidad venezolana. En: https://www.scholarsatrisk.org/wp-content/uploads/2020/12/SAR-Free-to-Think-2020-Venezuela.pdf

65 Vilanova, E. (2020) Collapse of Venezuelan science threatens the world's most sustained monitoring of tropical forests. Nature Ecology

and disseminators of environmental knowledge in the country.

In spite of these difficulties, it is possible to recognize a series of critical issues in the situation of wildlife in the country by cross-referencing the information gathered in this work. This possibility is even greater because the different sources yielded data that reinforce and complement each other. These issues may define the priority elements that will guide the construction of a future management of biological diversity that balances environmental conservation and the protection of human rights, based

and Evolution https://natureecoevocommunity.nature.com/posts/65506-collapse-of-venezuelan-science-threatens-the-world-s-most-sustained-monitoring-of-tropical-forests

on an understanding of the interdependence between both objectives[66].

Based on the above, it is possible to identify the following critical issues:

For decades, biodiversity in Venezuela, and especially wildlife, has been going through a process of continuous deterioration that puts a significant number of species at risk of extinction. This situation is related to a variety of causes, including the increase of human population, habitat disappearance, pollution, and hunting pressure. This last factor seems to be exerting an increasing pressure on wildlife species populations in a large part of the country.

At the same time, the information obtained from different sources seems to indicate that the most important factor affecting the increase in hunting is the complex humanitarian crisis that the country is suffering. This crisis severely compromises the human right to food and decent work of large population groups[67]. This circumstance seems to be pushing more and more people to seek food or income through the capture, consumption and sale of wildlife organisms.

Several studies suggest that, before the current humanitarian crisis, the consumption of bushmeat in Venezuela had generally been relegated to rural and indigenous communities. In these groups, this food has a very high importance in their diet as it is an accessible source of good quality protein.

This situation may be changing as different testimonies indicate that people and communities that traditionally hunt wild animals for food are increasingly forced to travel greater distances to obtain suitable prey or are no longer able to hunt some species that used to be common in their area.

In this context of crisis, some communities may have a decreasing access to animal protein. This situation may result in the nutritional deterioration of these populations and increase the dependence of

66 UNEP (2021) citado previamente.

67 Fundación Bengoa, Observatorio Venezolano de Salud, Red Agroalimentaria de Venezuela (2018) Reporte Nacional: Emergencia Humanitaria Compleja en Venezuela en el Derecho a la Alimentación. En: https://humvenezuela.com/wp-content/uploads/2018/12/Reporte-Nacional-EHC-Derecho-a-la-Alimentacio%CC%81n-y-Nutricio%CC%81n-2018.pdf.

these communities on the consumption of industrial processed foods. This can lead to greater nutritional and health problems.

In indigenous communities, this situation may lead to the loss of their cultures and traditional ways of lifes[68].

At the same time, and favored by the Complex Humanitarian Emergency, illegal trafficking of wildlife species seems to have increased. This problem has two sides: On the one hand, there are people who, in times of economic hardship, capture and sell wildlife as a means to increase their income. On the other hand, there are criminal organizations whose business is the transportation and commercialization of wildlife. In this case, it is a million-dollar business with international connections.

In these circumstances, the work of the Venezuelan State can be paradoxical: On the one hand, a number of important conservation programs for the protection of species such as sea turtles, freshwater turtles and caimans seem to be maintained, and high-level officials assure that the country is making progress towards international biodiversity conservation goals[69]. But at the same time, its actions are perceived by specialists and other people as insufficient, inadequate and, in some cases, non-existent. Likewise, several specialists believe that the existing conservation programs lack adequate funding and interest on the part of the State.

Similarly, available information on the Venezuelan government's actions aimed at preventing poaching and illegal trafficking in protected species indicates that these appear to follow a primarily punitive approach. Under this perspective, these actions can be completely ineffective, and become a tool for extortion and corruption without any real effect on wildlife conservation[70].

Asimismo, la represión y el castigo a la cacería parece concentrarse principalmente en los grupos de personas menos favorecidos, a la vez que la acción sobre los grupos de delincuencia organizada es

68 Oliveira, T. (2018) Indigenous People's Health and Traditions Threatened by CLAP and Mining. En: https://www.caracaschronicles.com/2018/10/26/indigenous-peoples-health-and-traditions-threatened-by-clap-and-mining/.

69 Últimas Noticias (2019) Venezuela supera metas globales de protección de diversidad biológica. https://ultimasnoticias.com.ve/noticias/politica/venezuela-supera-metas-globales-de-proteccion-de-diversidad-biologica/.

70 Cerda, H. Carreño, R., Viloria, A.L., Jędrzejewski, W. (2013) Conservación del jaguar (Panthera onca L.) en Venezuela: necesidad del diálogo de saberes y la participación social. ÁNARTIA, 26 ("2014" 2016): 9 – 28.

aparentemente escasa o inexistente[71].

An additional issue that arises from the investigation is the concern about the apparent increase in the demand for bushmeat from miners in southern Venezuela. If this trend consolidates, it could lead to the local extinction of many species of animals that inhabit the ecosystems of that region, an increase in nutritional poverty among local indigenous communities, and generate imbalances in these ecosystems.

This situation may be accelerating the deterioration of the country's biological diversity, while affecting the human rights of the population, particularly those of the most vulnerable groups. This is not only due to decreased access to traditional sources of food with high nutritional value but also to the elimination of biological species, which can have serious effects on the health of ecosystems, thus worsening the living conditions of populations in rural and indigenous areas, as well as in the rest of the country

On the other hand, according to the information gathered, the country seems to be losing an important part of its wildlife conservation professionals, both researchers and managers, as well as programs for the training of new professionals. It is clear that without specialized personnel it will be very

71 As Uruguayan writer Eduardo Galeano and Monsignor Óscar Arnulfo Romero of El Salvador once said, "Justice is like snakes, it only bites the barefoot."

difficult to meet the national biodiversity conservation goals. This is a very unfortunate issue, since Venezuela has made significant progress in the development of research and training programs in wildlife conservation and management sciences[72].

If the deterioration of the national biodiversity continues, the country will lose one of the most important elements for future development, both through the sustainable use of biological resources and the

72 See: Machado-Allison, A, Hernández, O., Aguilera, M., Seijas A.E. y Rojas F. (coordinadores) (2010) Simposio: Investigación y Manejo de Fauna Silvestre en Venezuela en Homenaje al "Dr. Juhani Ojasti". En: http://54.39.107.28/~acfimano/obras/wp-content/uploads/2021/01/simposio_investigacion_y_manejo.pdf.

RECOMMENDATIONS

Due to the enormous strategic value that biological diversity has for Venezuela and its impact on the human rights of the Venezuelan people, the Venezuelan State should consider the following recommendations:

contributions of nature to the well-being and dignity of humans.

- Initiate an open, plural and democratic discussion on the country's national development model that seeks to integrate nature and its biological diversity as a fundamental component of national development, as well as to overcome the current humanitarian crisis and protect the most vulnerable groups;

- Accelerate the design of a new National Strategy for the Conservation of Biological Diversity with a human rights approach and in accordance with the international obligations assumed by the State. Likewise, this Strategy must leave behind the false dichotomy between environmental conservation and

human rights by understanding their interconnections;

- Establish a national research funding policy that supports scientific studies on the situation of biological diversity in the country and possible solutions to its problems; Funding should reach all researchers in the country without any kind of discrimination;

- Que el gobierno establezca una política nacional de financiamiento de la investigación que apoye la realización de estudios científicos sobre la situación de la diversidad biológica en el país y las posibles soluciones a sus problemas. El financiamiento debe llegar a todos los investigadores del país sin ningún tipo de discriminación;

- Discard the policy of harassment and suffocation of national public universities and assume their recovery on the basis of their autonomy and democratic values, while supporting the strengthening of research and training programs on biological diversity.

- Require the Public Ministry to assume its obligation to investigate, in cooperation with the rest of the competent State agencies, the corruption schemes and criminal organizations behind the illegal wildlife trafficking business.

- Establish effective strategies to eliminate mining in indigenous territories as a first step towards the eradication of uncontrolled mining and the abandonment of mining extractivism as a means of financing the State.

- Promote effective participation and cooperation mechanisms that articulate the different social actors in all the aspects of biodiversity conservation, including universities, civil society, indigenous communities, companies and the government.

- Establish policies in the framework of the Escazú Agreement to facilitate public access to all the necessary information on biodiversity and its management programs.

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