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Victim of Good Intentions Zoo-kept African Wild Dogs in Species Conservation Biopolitics

Жертва благих намерений
Содержание гиеновидных собак
в зоопарках в биополитике охраны видов

Абстракт

В связи с ростом интереса к теме благополучия животных в зоопарках поднимается вопрос о значении содержащихся в неволе животных для охраны видов. Настоящая статья посвящена проблеме гиеновидных собак. Автор объединяет данные различных исследований, рассматривая их в следующих тематических разделах: биополитика угрозы видам, усилия по их сохранению и вопросы, связанные с содержанием гиеновидных собак в зоопарках. С этой точки зрения в статье утверждается, что виды с выраженными экологическими потребностями не должны содержаться в условиях неволи. В контексте биополитики охраны природы автор ссылается на исследования, подтверждающие, что находящиеся в зоопарках гиеновидные собаки недостаточно полезны для программ реинтродукции, чтобы оправдать негативное влияние содержания в неволе на их благополучие.

Ключевые слова: гиеновидные собаки, зоопарки, благополучие животных, охрана видов, биополитика

Victim of Good Intentions
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in Species Conservation Biopolitics

Abstract

As the topic of animal welfare in zoos rises, so does the question of the importance of zoo-kept animals for species conservation. This article brings up the issue of African wild dogs. The author combines data from various studies into these sections – biopolitics of species endangerment, conservation efforts and issues of zoo-kept dogs. With that perspective this paper argues that species with great environmental needs should not be kept captive. In the context of conservation biopolitics, the author brings up studies that serve as a proof that zoo-kept wild dogs are not useful enough in the reintroduction to justify their poor well-being.

Keywords: african wild dogs, zoos, animal welfare, species conservation, biopolitics

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Introduction

The African wild dog (*Lycaon pictus*), referred onwards as AWD, is considered an endangered species according to the IUCN Red List.[1] The estimated population currently stands at about 6700 individuals. The largest population covers the area of South Africa.[2] These canines are obligate cooperative breeders, with only the dominant pair reproducing.[3] Typically packs live on a large territory, which ranges from 200–700 km^2.[4] Size range of the packs is quite wide, from three to even 40 dogs, including yearlings and pups.[5]

Situation of African wild dogs, as most endangered species, is intertwined with wildlife conservation, which is tightly linked to the colonialist past and neocolonialist present, especially in Africa. The present study does not concentrate on neocolonialism; nevertheless, it is the opinion of the author that reference to this issue is unavoidable in the context of the conservation of species from a continent that has been, and continues to be, subjected to significant Western intervention. Forced relocations and other forms of violence against Indigenous people are the results of these interventions. Militarization of African Wildlife Conservation, in the efforts for "war against poachers" or later "war for biodiversity" leads to the exclusion of human inhabitants.[6] What needs to emphasized is that even when considering wildlife conservation, especially in the context of Africa, we must not forget all the victims of this violent system, human and non-human.

One of the key problems disussed in this article is keeping African wild dogs in zoos, which is unfortunately also linked to colonialism. Zoological gardens did not start as agents for wildlife conservation but rather as places made to satisfy curi-

[1] Rosie Woodroffe and Claudio Sillero-Zubir, "Lycaon Pictus (Amended Version of 2012 Assessment). The IUCN Red List of Threatened Species," *IUCN Red List of Threatened Species* (2020), e.T12436A166502262, https://doi.org/10.2305/IUCN.UK.2020-1.RLTS.T12436A166502262.en.

[2] Melanie E. Bucci, Kerry L. Nicholson, and Paul R. Krausman, "Lycaon Pictus (Carnivora: Canidae)," *Mammalian Species*, vol. 54, no. 1017 (2022): 220–240, https://doi.org/10.1093/mspecies/seac002.

[3] Scott Creel and Nancy Marusha Creel, *The African Wild Dog: Behavior, Ecology, and Conservation*, vol. 65 (Princeton University Press, 2002), https://doi.org/10.2307/j.ctvs32snm.

[4] Matthew A. Pomilia, J. Weldon McNutt, and Neil R. Jordan, "Ecological Predictors of African Wild Dog Ranging Patterns in Northern Botswana," *Journal of Mammalogy*, vol. 96, no. 6 (2015): 1214–1223, https://doi.org/10.1093/jmammal/gyv130.

[5] Scott Creel and Nancy Marusha Creel, "Communal Hunting and Pack Size in African Wild Dogs *Lycaon Pictus*," *Animal Behaviour*, vol. 50, no. 5 (1995): 1325–1339, https://doi.org/10.1016/0003-3472(95)80048-4.

[6] Emily Jones, "Capital and Control: Neocolonialism Through the Militarization of African Wildlife Conservation," *Flux: International Relations Review*, vol. 11, no. 2 (2021): 29–37, https://doi.org/10.26443/firr.v11i2.73.

osity.[7] As Marianna Szczygielska has pointed out: "For common people a way to encounter exotic wilderness in a more direct sense than through literature was to visit the zoo."[8]

We can argue if zoos of today are really playing a part in helping endangered species, which will later be taken up in this article, specifically regarding AWDs. Certainly though, zoos have evolved from the places of mere entertainment to organizations which at least try to focus on education, research and conservation of wildlife.

Biopolitics is a broad term, started by Michel Foucault, later made more popular by Agamben and Negri,[9] studied by countless other researchers. When talking about biopolitics and all its aspects, the author will refer to the concept of Connor J. Cavanagh,[10] which is both Foucaultian and expanding beyond taking only humans into consideration. As Cavanagh mentions, Foucault used examples of Nazism and Stalinism to formulate his original understanding of biopolitics; however, with the passing of time, the rise of the Anthropocene connected with dire consequences of climate change, the types and severity of threats that human societies face today have changed. The author brings up a number of other scholars that focus on updating the term of biopolitics and biopower for the situation of the current human population endangered by global environmental change. However, the author chooses to include non-human animals into the picture, as they too are now under the control of the government and suffer the effects of environmental change. After this inclusion, he defines biopolitics as "The politics and political economy of supporting certain and asymmetrically valued forms of both human and nonhuman lives within rapidly shifting ecological conditions."[11]

Foucault's original account of biopolitics is the one that Cavanagh deems the most capable for grappling with the concept in these unstable times, after he revised it to include non-human animals. Cavanagh insists that in today's socio-economic situation the basic distinction between man and everything else is not enough, as:

> At its core […], global environmental change presents new constraints for both human and nonhuman lives in different geographical regions, wherein the agency

[7] Jes Hooper, "Thinking with Civets: The Role of Zoos in the Decolonisation of Animal Tourism," *Animals: An Open Access Journal from MDPI*, vol. 13, no. 11 (2023): 1739, https://doi.org/10.3390/ani13111739.

[8] Marianna Szczygielska, "Elephant Empire: Zoos and Colonial Encounters in Eastern Europe," *Cultural Studies*, vol. 34, no. 5 (2020): 797, https://doi.org/10.1080/09502386.2020.1780280.

[9] Matthew Chrulew, "Animals in Biopolitical Theory: Between Agamben and Negri," *New Formations*, vol. 76, no. 76 (2012): 53–67, https://doi.org/10.3898/NEWF.76.04.2012.

[10] Connor J. Cavanagh, "Biopolitics, Environmental Change, and Development Studies," *Forum for Development Studies*, vol. 41, no. 2 (2014): 273–294, https://doi.org/10.1080/08039410.2014.901243.

[11] Cavanagh, "Biopolitics, Environmental Change, and Development Studies," 277.

> of "[wo]men" and the agency of "things" mutually impinge upon one another to produce a variety of unpredictably emergent ecological outcomes (Baldwin, 2013; Braun, 2007).[12]

As shown by Cavanagh, biopolitics and biopower can be useful terms to study in the context of wildlife management and conservation, as he claims that:

> Biopower operates across three primary axes: in the first instance, (i) between differently "racialized" (Foucault, 2003, pp. 254–255) populations of humans, and (ii) between asymmetrically valued populations of humans and nonhumans. […] In addition, one might further add that emerging campaigns to identify and control both harmful pathogens and their vector species constitute a third axis of human–nonhuman–nonhuman biopolitics, wherein, as a result of our awareness of the nature of the "collective without outside recourse," we seek to insulate favoured populations against those forms of life with which, in a Latourian sense, we cannot live (e.g. Braun, 2007).[13]

In the subsequent discourse on biopolitics, the aforementioned concept of the author will be employed, as it pertains to the management of wildlife in the context of climate change, while simultaneously acknowledging the significance of inequalities within human society.

Biopolitics of African Wild Dog Endangerment

In his article, Cavanagh[14] takes time to ensure that the concepts of 'vulnerability' and 'exposure' in the context of biopolitics of conservation are not confused – not every species exposed to climate change and anthropogenic pressure will be on the same level of vulnerability, as one does not equal the other. This is extremely important for understanding the complexity of biopolitics of wildlife conservation, and protection of African wild dogs is no different. As outlined below, a multitude of reasons are given for the heightened vulnerability of AWDs to the same threats that are faced by other large African predators. African wild dogs are territorial, with low population densities for a pack

[12] Cavanagh, "Biopolitics, Environmental Change, and Development Studies," 282.
[13] Cavanagh, "Biopolitics, Environmental Change, and Development Studies," 289.
[14] Cavanagh, "Biopolitics, Environmental Change, and Development Studies," 274.

predator.[15] It is believed that the extremely vast areas of their territories are caused by AWDs' avoidance of other large predators, such as lions and hyenas, so they use areas with fewer resources. They travel vast distances daily, which has been linked to a decline in the species' numbers – they move out of reserve areas and into the vicinity of human developments and roads, falling victim to them.[16]

The main reason for the current endangered state of the African wild dog population is the conflict of interest between them and the human inhabitants of Africa, resulting in anthropogenic mortality. Since they move at such long distances through their territories, a contact between the wild dogs and humans is unavoidable. Moving them to fenced areas results in habitat fragmentation, the bane of today's nature conservation. The need of biopower to control the nonhuman population that is both of ecological value but at the same time a risk to the local community is nothing new. Currently that need is pointed towards conservation efforts, however in the near past the discipline of biopower was one with the attitudes of farmers, which treated AWDs as pests, which is reflected even in the law, as wild dogs were killed by the park staff in Niger's protected areas as late as 1979.[17] Even with the biopower-driven discourse change, the study of relations between African wild dogs and local farmers in the eastern Kalahari region of Botswana shows how truly difficult it is to change people's minds. That region has a rich population of AWDs outside of protected areas, which makes them more vulnerable to violence from humans. The conclusion reached was that subsistence farmers hold a more negative view of AWDs, since they are the most affected by the predation on their livestock. These people are key to successful conservation yet they are often forgotten by the biopolitics or fall victim to the ineffective policies, such as the compensation for killed animals, which is often not enough to cover such a significant loss for a small-scale farmer. Socio-economic status of local community is directly linked to how effective conservation effort can really be, as marginalized people cannot cope with depredation that comes with the presence of large predator nearby.[18]

Animals of such roaming distance cannot be successfully controlled by restricting their territory without some kind of harm. Large species, like African wild dogs, but also lions or hyenas, are especially reliant on access to unrestricted

[15] Kellie A Leigh, *The Ecology and Conservation Biology of the Endangered African Wild Dog (Lycaon Pictus) in the Lower Zambezi, Zambia* (PhD Thesis, 2005), http://hdl.handle.net/2123/1545.

[16] Rosie Woodroffe, "Ranging Behaviour of African Wild Dog Packs in a Human-Dominated Landscape," *Journal of Zoology*, vol. 283, no. 2 (2011): 88–97, https://doi.org/10.1111/j.1469-7998.2010.00747.x.

[17] Joshua R. Ginsberg, David W. (David Whyte) Macdonald, and Rosie Woodroffe, *The African Wild Dog: Status Survey and Conservation Action Plan* (IUCN, 1997), 63–64, https://portals.iucn.org/library/node/7327.

[18] Valli-Laurente Fraser-Celin et al., "Farmer–African Wild Dog (Lycaon Pictus) Relations in the Eastern Kalahari Region of Botswana," *Koedoe*, vol. 59, no. 2 (2017): 1–10.

movement,[19] which makes them vulnerable to such conservation politics as the land-sparing approach.[20] A study on how fencing affects AWDs in Laikipia County in northern Kenya shows how negative this impact is, which includes roadkill and problems with predation on livestock, resulting in a conflict with local people.[21] After what seems to be middle ground biopolitics – the land sparing approach, which tries to discipline and control both locals and the animals, the conflict between both sides rises, as AWDs become a risk to the local community. The results of this study should not come as a surprise – the sheer importance of dispersing in AWDs has always made their conservation challenging.[22] Packs contain one breeding pair with their offspring, who help with raising their siblings. Those young wild dogs leave in same-sex groups when they are ready to start their own packs or join others, not related to them. Dispersing is a necessity for healthy population growth of AWDs.[23] Nevertheless, dispersing wild dogs are more vulnerable to being killed by humans. Most AWD packs are reliant on conservation efforts of translocating the individuals to more suitable places with less genetic overlap. That puts the whole population of these extremely vulnerable species in the eye of biopolitics. Individual members of the packs are artificially removed and added where the controlling biopower deems fit.

As most large carnivores, AWDs are perceived fairly negatively by the public eye, especially by farmers. The results of a study from 2005[24] provides data on how unwanted wild dogs are, as they were rated as the least popular large carnivore. In the study, 4% of ranchers surveyed declared that they would shoot the wild dogs on their private land regardless of the protected status. That percentage may not seem like a lot, but we have to keep in mind how much AWDs rely on the size of the pack for breeding success.

[19] Mette Løvschal et al., "Fencing Bodes a Rapid Collapse of the Unique Greater Mara Ecosystem," *Scientific Reports*, vol. 7 (2017): 1–7, https://doi.org/10.1038/srep41450.

[20] Craig Packer et al., "Conserving Large Carnivores: Dollars and Fence," *Ecology Letters*, vol. 16, no. 5 (2013): 635–641, https://doi.org/10.1111/ele.12091.

[21] Helen M. K. O'Neill et al., "Fencing Affects African Wild Dog Movement Patterns and Population Dynamics," *Oryx*, vol. 56, no. 1 (2022): 128–136, https://doi.org/10.1017/S0030605320000320.

[22] Gabriele Cozzi et al., "African Wild Dog Dispersal and Implications for Management," *The Journal of Wildlife Management*, vol. 84, no. 4 (2020): 614–621, https://doi.org/10.1002/jwmg.21841.

[23] Rosie Woodroffe et al., "Dispersal Behaviour of African Wild Dogs in Kenya," *African Journal of Ecology*, vol. 58, no. 1 (2020): 46–57, https://doi.org/10.1111/aje.12689.

[24] Peter A. Lindsey, Johan du Toit, and Michael Mills, "Attitudes of Ranchers towards African Wild Dogs Lycaon Pictus: Conservation Implications on Private Land," *Biological Conservation*, vol. 125 (2005): 113–121, https://doi.org/10.1016/j.biocon.2005.03.015.

Conservation Efforts

As it often happens, education seems to be the key to the issue of the negative attitude towards the large carnivores. Each rancher that learns that the wild dogs are not the main danger to their livestock, and how to protect it more efficiently from predators, makes conservation efforts *in situ* easier.[25] It seems especially true in the case of political changes made for better protection of these animals – as important as well-designed policies are, without the goodwill and understanding of the people, there is no way of successfully implementing them.[26] What we need to remember as well is that biopolitics of wildlife conservation are not universal across the globe. Across Africa there are still plenty of communities that rely on hunting, either personal or trophy hunting as a way to survive, which would not stand in most European countries. The rise and fall of Botswana's ban on trophy hunting, also called tourism hunting, comes as a great example. The complete ban was announced in 2014 and lifted in 2019, as the government met with protests from local communities, who relied on it for employment and income and were not sufficiently compensated.[27]

Ecotourism, although controversial from the neo-colonialism perspective, may make the game ranchers change their mind on AWDs, since it could possibly offset the cost of the predation from the canines.[28] By definition formulated by David A. Fennel, a renowned researcher on the topic, ecotourism should be a non-invasive, nature-based form of tourism focused on learning, sustainability with the well-being of the local community and conservation efforts in mind. The definition also includes the aspect of biopolitics without using the word directly, as ecotourism has to be planned, developed and managed ethically.[29] The first two axes of biopower, mentioned here in the introduction, are clearly in play – ecotourism includes non-human animals that are the entertainment, often valued higher by tourists

[25] Mordecai O. Ogada et al., "Limiting Depredation by African Carnivores: The Role of Livestock Husbandry," *Conservation Biology*, vol. 17, no. 6 (2003): 1521–1530, https://doi.org/10.1111/j.1523-1739.2003.00061.x.

[26] T. Kuiper et al., "Combining Biological and Socio-Political Criteria to Set Spatial Conservation Priorities for the Endangered African Wild Dog," *Animal Conservation*, vol. 21, no. 5 (2018): 376–386, https://doi.org/10.1111/acv.12405.

[27] Lelokwane Mokgalo and Peet van der Merwe, "A Revised CBT Strategy for Botswana: Reflections from Experiences of the Ban on Trophy Hunting," *Cogent Social Sciences*, vol. 8, no. 1 (2022): 2081109, https://doi.org/10.1080/23311886.2022.2081109.

[28] Peter A. Lindsey et al., "The Potential Contribution of Ecotourism to African Wild Dog *Lycaon Pictus* Conservation in South Africa," *Biological Conservation*, vol. 123, no. 3 (2005): 339–348, https://doi.org/10.1016/j.biocon.2004.12.002.

[29] David A. Fennel, *Ecotourism* (Routledge, 2020), 20, https://doi.org/10.4324/9780429346293.

from highly developed, rich countries than local communities. The authors of the article "Ecotourism for Conservation?" reviewed existing literature on the topic, which made one thing clear – today many tourist attractions label themselves as ecotourism without taking into account the ethics of their practice. Some data from the study suggests that correctly led ecotourism can have a positive impact on wildlife conservation, including African wild dogs, as one of the most visible aspects is land protection which these canines need.[30] Education programs for tourists should be the center of biopolitics of a healthy combination of conservation and ecotourism, both on the issues of the wildlife as well as local communities.

Due to the small number of individuals living in the wild, programs are being set up to relocate and reintroduce African wild dogs to areas that were historically inhabited by them, primarily reserves and national parks. One of the most successful attempts is described in a relatively recent (April 2021) scientific article – "The successful reintroduction of African wild dogs (Lycaon pictus) to Gorongosa National Park, Mozambique."[31] The authors analyze, based on a 28-month study period, the first transboundary relocation and reintroduction of African wild dog packs into Gorongosa National Park in Mozambique. Artificial pack formation in enclosures was used prior to release. This was to help the formation of the alpha pair, and thus the corresponding social structure. The survival rate for all African wild dogs was 73%, and all mortalities were due to natural causes. This study documents the first successful reintroduction of African wild dogs in an unfenced, large area in Mozambique, and the second in all of Africa. It should be noted here that all the African wild dogs involved in the formation of the new groups came from the wild, combining three different packs to diversify the gene pool as much as possible. This is a key fact for the topic of this paper. One of the missions of zoos that EAZA repeatedly emphasizes in its official documents is the conservation of the environment, including animals, and therefore captive breeding programs.[32] Meanwhile, studies show that individuals from captivity are not valuable material for reintroduction. To raise their chances they are combined with individuals from the wild. Even then, if a pack has more than 25% of individuals from captivity, their chance of reproduction decreases:

[30] Amanda L. Stronza, Carter A. Hunt, and Lee A. Fitzgerald, "Ecotourism for Conservation?" *Annual Review of Environment and Resources*, vol. 44 (2019): 229–253, https://doi.org/10.1146/annurev-environ-101718-033046.

[31] Paola Bouley et al., "The Successful Reintroduction of African Wild Dogs (Lycaon Pictus) to Gorongosa National Park, Mozambique," *PLOS ONE*, vol. 16, no. 4 (2021): e0249860, https://doi.org/10.1371/journal.pone.0249860.

[32] "EAZA Code of Ethics," 2015, https://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA-Code-of-Ethics2015.pdf.

> We suggest that the low ability of captive-sourced wild dogs to adapt to their environment (e.g. avoid lions, disease immunity) and contribute to the pack (e.g. communal hunting), coupled with the detrimental effect of prolonged confinement on the wild-sourced individuals with which they are joined, leads to packs being less likely to reproduce in their first season post-release.[33]

The breeding programs still exist even if the studies prove that for AWDs zoo-bred individuals are not a valuable addition to the reintroduced pack. The conservation biopolitics of keeping these animals in zoos does not seem to be connected to the breeding and releasing of endangered animals, more so on being able to use these animals for research. The London Zoo elaborates more about that on their website – a focus was put there on collar trials.[34] These collars are essential for tracking the AWDs in the wild and tests at London Zoo allowed a proper fit so they are not shaken off or dangerous to the animal. That program proves that breeding programs are not the only way that captive populations can be useful for conservation. However, biopolitics of zoo-keeping differs from biopolitics of wildlife conservation and African wild dogs are still bred in zoos, no matter the often tragic consequences.

Issues of Zoo-Kept African Wild Dogs

According to Jennifer N. Langan and Gwen Jankowski, about 600 AWDs are currently being kept in zoos.[35] For obvious reasons, African wild dog enclosures in a zoo are much smaller than their natural territories. Aggression within groups held in captivity can even lead to deaths or severe injuries in adults. The problem is significant because it is the most common cause of death in adults held in captivity in South Africa. While there is little to none official data on the subject, it is known that the problem exists in zoos around the world, with some cases documented more than the others. A good example comes from a retrospective study from 2023,

[33] Courtney Marneweck et al., "Factors Affecting the Success of Artificial Pack Formation in an Endangered, Social Carnivore: The African Wild Dog," *Animal Conservation*, vol. 22, no. 5 (2019): 493–502, https://doi.org/10.1111/acv.12490.

[34] "London Zoo Conservation: African Wild Dog Pack Supporting Species' Survival | London Zoo," accessed 30 August 2024, https://www.londonzoo.org/zoo-stories/news/london-zoo-conservation-african-wild-dog-pack-supporting-species-survival.

[35] Jennifer N. Langan and Gwen Jankowski, "Overview of African Wild Dog Medicine," *Fowler's Zoo and Wild Animal Medicine Current Therapy*, vol. 9 (2019): 539–547, https://doi.org/10.1016/B978-0-323-55228-8.00077-1.

where researchers analyzed data gathered from 140 individuals, 122 morbidity records and 70 postmortem reports.[36] Trauma was identified as the most common cause of death – 23% of gathered data, and the most common morbidity – 62%, of which as much as 76% was a direct result of aggression between the dogs. Of course, antagonistic interactions also occur in populations in the wild, but it is speculated that the small space in the zoo does not allow for conflict avoidance, and thus leads to increased aggression.[37] Scientists also point to the social structure specific to African wild dogs, in which the dispersal of young individuals, especially females, is a norm. In a zoo, there is no chance for it, which results in destabilization of the pack, and thus increasing conflicts. African wild dogs are particularly vulnerable to chronic stress in captivity, regardless of whether they are being kept permanently in a zoo or temporarily for the purpose of, for example, reintroduction. This is confirmed by the stereotypies observed in individuals kept in suboptimal conditions.[38]

Studies of glucocorticoid metabolites in the feces of females that show stress levels in animals have demonstrated that, as in other predators, their levels are higher in wild dogs kept in zoos, compared to individuals in the wild.[39] Stressors are suggested to be the reaction to noise, destabilization in the hierarchy, inadequate enclosures and reproductive problems. Regardless of what factor we take into account, the only one that indicates significant differences in stress is precisely the living conditions of African wild dogs – in captivity or in the wild.[40]

The data provided by the excellent article "Retrospective study of mortality of captive African wild dogs (Lycaon pictus) in a French zoo (1974–2013)" by Benjamin Lamglait, Elodie Trunet, and Antoine Leclerc, testify to the unsuitability of African wild dogs for zoo life. This is more effectively demonstrated by acts of cannibalism, which are the main reason for the death of newborns and juveniles. The inexperience of the parturient females, problems with the offsprings' health, inadequate surroundings, and associated severe stress are considered the main causes.

[36] Harriet R. Cock et al., "Retrospective Study Of Morbidity And Mortality Of Captive African Wild Dogs (Lycaon Pictus) Held Within United Kingdom Zoological Institutions Between 2000 And 2020," *Journal of Zoo and Wildlife Medicine*, vol. 54, no. 3 (2023): 498–510, https://doi.org/10.1638/2022-0026.

[37] Sally Boutelle and Henk Bertschinger, "Reproductive Management in Captive and Wild Canids: Contraception Challenges," *International Zoo Yearbook*, vol. 44, no. 1 (2010): 109–120, https://doi.org/10.1111/j.1748-1090.2009.00107.x.

[38] Bruce Crossey et al., "Using Faecal Glucocorticoid Metabolite Analyses to Elucidate Stressors of African Wild Dogs Lycaon Pictus from South Africa," *Wildlife Biology*, no. 1 (2020), https://doi.org/10.2981/wlb.00646.

[39] Leanne K. Van der Weyde, Graeme Bruce Martin, and Christina Johanna Paris, "Monitoring Stress in Captive and Free-Ranging African Wild Dogs (Lycaon Pictus) Using Faecal Glucocorticoid Metabolites," *General and Comparative Endocrinology*, vol. 226 (2016): 50–55, https://doi.org/10.1016/j.ygcen.2015.12.022.

[40] Crossey et al., "Using Faecal Glucocorticoid Metabolite Analyses to Elucidate Stressors of African Wild Dogs Lycaon Pictus from South Africa."

Even the changes undertaken for less invasive initial monitoring of pups have not resulted in improvements. Compared to the state of the population in the wild, the survival rate of pups in captivity is extremely low.

The article mentioned above also analyzed diseases of the reproductive system as a cause of a significant number of deaths in adult females. Females participating in this study were not given contraception,[41] while in another study, cystic endometrial hyperplasia and pyelocystitis were most commonly reported in uncastrated females, which was linked to long-term progestogen administration.[42] The authors of the article point out that these diseases also occur in females not subjected to hormonal contraception; however, endometrial pathology is higher after contraception. It was shown that the incidence of uterine diseases was higher in those females who spent more years not reproducing and experienced only physiological reproductive cycles.[43]

Discussion

Considering all the gathered data, African wild dogs are not animals that should be kept in the conditions that zoos are currently able to provide. The species has great environmental needs that are not physically possible to be met by zoos, such as the vast space that their territories normally cover. We also know that due to poor conditions in captivity, they are extremely susceptible to disruptions in the social structure of the pack, leading to conflicts, which can even end in death.[44] The severe stress they experience leads to high pup mortality rates, higher even than in the wild. Regardless of reproductive success, zoo-raised African wild dogs mean little to the survival of the species in the wild.[45] As I mentioned, using them in

[41] Benjamin Lamglait, Elodie Trunet, and Antoine Leclerc, "Retrospective Study of Mortality of Captive African Wild Dogs (Lycaon Pictus) in a French Zoo (1974–2013)," *Journal of Zoo and Aquarium Research*, vol. 3, no. 2 (2015): 47–51, https://doi.org/10.19227/jzar.v3i2.124.

[42] Gwen Jankowski et al., "Cystic Endometrial Hyperplasia and Pyometra in Three Captive African Hunting Dogs (Lycaon Pictus)," *Journal of Zoo and Wildlife Medicine: Official Publication of the American Association of Zoo Veterinarians*, vol. 43, no. 1 (2012): 95–100, https://doi.org/10.1638/2010-0222.1.

[43] Cheryl S. Asa et al., "Factors Associated with Uterine Endometrial Hyperplasia and Pyometra in Wild Canids: Implications for Fertility," *Zoo Biology*, vol. 33, no. 1 (2014): 8–19, https://doi.org/10.1002/zoo.21069.

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[45] Marneweck et al., "Factors Affecting the Success of Artificial Pack Formation in an Endangered, Social Carnivore."

reintroduction is risky and requires pairing them with many individuals relocated from other packs.

Altogether, all this data suggest that keeping African wild dogs in zoos has little to do with environmental conservation, and the animals themselves pay a high price for it. The question is whether the education on the species that is supposed to take place in zoos or being simply an attraction for visitors is important enough to turn a blind eye to the poor well-being of these animals in captivity. More data on how to recognize and measure the welfare deficiencies of AWDs in captivity is desperately needed. With that, studies on how exactly we are supposed to help the individuals already kept in zoos could follow.

The biopolitical approach to the conservation of these animals should focus more on how to most efficiently protect the wild dogs in their natural habitat. AWDs in zoos, as important as they can be for some research, are not fit for living in captivity and bypassing welfare of each individual just to keep a member of an endangered species should not be normalized. What biopolitics of conservation often forgets is that each animal is a sentient being, able to feel pain and distress. For the ethical use of biopower in wildlife conservation, especially in Africa, it is crucial to understand the complexity of both conserving the species and avoiding harming the local human residents, as the issue of neocolonialism is still deeply present in Africa. The three axes that biopower operates on are easy to destabilize and essentially make the conservation efforts more difficult, as proved by studies provided here earlier, the goodwill of local communities is necessary for successful protection of endangered animals. They cannot be pushed aside in the process of protecting the population of other species, just because that species belongs to charismatic fauna. Approach of ecotourism, done with ethics in priority, both for locals and non-humans sake, can be a better practice than relates to wildlife conservation. Focusing on educating and supporting the communities of places where African wild dogs can be encountered could be another way to mitigate the conflict, as researchers agree that misinformation only exacerbates reactions born out of fear and frustration.

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