



CONSERVATION OR COLLECTION?

Evaluating the conservation status of species
housed and bred in licensed charitable UK zoos

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CONTENTS

- 3 Report Summary
- 4 Introduction
- 5 The Conservation Status of Animals Kept in Leading Charitable Zoos
- 8 The Conservation Status of Animals Bred in Leading Charitable Zoos
- 12 References
- 13 Appendix



“Born Free’s forensic analysis clearly demonstrates that the great majority of species housed in some of the UK’s best-known zoos are not classified as threatened. Far from focusing on species of Conservation Concern, for which captive breeding has been identified as a conservation priority, these zoos appear to be more intent on keeping species that they hope will attract the public, a situation that hasn’t changed for over 15 years. I believe our report raises serious questions about the conservation credentials and commitment of some of Britain’s best-known zoos. It’s time for a radical rethink.”

Will Travers OBE, Executive President

Born Free Foundation
2nd Floor, Frazer House,
14 Carfax, Horsham,
West Sussex, RH12 1ER,
UK

bornfree.org.uk

Registered Charity 1070906



COVER STORY

Are zoos really centres of conservation? 73% of species kept in leading charitable zoos aren't threatened with extinction. Meerkats are often kept in unnatural social groups and there are over 1,000 in collections across Britain, but they are classified Least Concern on the Red List of Threatened Species.



REPORT SUMMARY

The Consortium of Charitable Zoos consists of nine leading British zoological societies. These are all charitable trusts registered with the Charity Commission. They all claim to share an 'ethical purpose' in contrast to privately run zoos which may differ in their mission and constitution.¹

KEY FINDINGS

- Only 26.6% of taxa (species and sub-species) housed by Consortium of Charitable zoos are categorised as threatened with extinction in the wild on the IUCN's Red List (International Union for Conservation of Nature – the world's largest conservation organisation)
- 52.4% of taxa housed are categorised as Least Concern (lowest possible category)
- Only 35.4% of species born at Consortium zoos are classified as threatened species
- Consortium zoos housed more individual animals of domesticated species (360) than species categorised as Extinct in the Wild (64).

KEY MESSAGES

Within 'The Manifesto for Zoos', published 15 years ago, John Regan writes, "*The progressive UK zoos would very much like government to ... take more notice of them.*"¹ This, however, was commissioned by the zoological institutions within the 'manifesto' and written by a company which specialises in lobbying and fundraising for the zoo industry.² Born Free's Report '*Conservation or Collection*' highlights that everyone should take more notice of what zoos are doing, and more importantly identified what they are not doing. Meanwhile, the 'World Zoo Conservation Strategy', first published in 1993, has gradually moved away from the aspiration that the ultimate goal for *ex-situ* conservation (outside the species' natural habitat) is to reintroduce those animals to the wild.³ The Director of the Smithsonian Zoo and Conservation Biology Institute, Dr Steven L. Monfort highlights, "*We as a society have to decide if it is going to be ethically and morally appropriate to simply display, animals for entertainment purposes.*"⁴ This report identifies that the majority of species housed by the UK Consortium of Charitable Zoos are not considered to be threatened species, and that zoos have made little effort to adjust this imbalance since it was first identified by Born Free 15 years ago.⁵

Born Free is calling on the government to:

- Review the Zoo Licensing Act to ensure criteria for section 1A (a) 'Conservation measures for zoos' are more profound, transparent, measurable and in the public domain, and that zoos are held to account for their implementation.

To achieve this would require:

- The development of more stringent criteria to be applied to conservation measures (iv) 'where appropriate, breeding of wild animals in captivity', stipulating that breeding should only occur where a conservation strategy for the species exists, *ex-situ* breeding has been identified by an IUCN Red List assessment as a required conservation action, that efforts to mitigate any threats to the species in the wild, and that plans for reintroduction to the wild of captive-bred animals (where possible) are part of their published conservation strategy. This action would lead to a phasing-out of species bred and housed for non-conservation purposes.
- Specific follow-up actions by zoos to demonstrate how their work towards measures (i) 'research from which conservation benefits accrue to species of wild animals', (ii) 'training in relevant conservation skills', and (iii) 'exchange of information' have benefited threatened species of wild animals, and how these benefits can be assessed by the relevant licencing authority.
- To meet their conservation obligations, zoos must fulfil at least three of the revised five conservation measures identified within their license conditions. Currently, zoos need only to fulfil one of five.

INTRODUCTION

A survey published by BIAZA (British and Irish Association of Zoos and Aquariums) in January 2021 revealed that 24 BIAZA member zoos were facing permanent closure within 12 months.⁶ As many smaller zoos in the UK are not BIAZA members, the true number of zoos that may cease operations is likely much higher. Zoos, including Chester Zoo and London Zoo, have been critical of the government's Zoo Animals Fund introduced in 2020 to provide financial assistance to zoos forced to close to the public during the COVID-19 crisis, with only 9% of the £100 million support package being distributed to 56 zoos up to May 2021.⁷ Headlines have warned that '*species could face extinction*', whilst BIAZA has stated that without government action, they expect '*organisations could close for good*', which, '*would be a disaster for conservation*'.^{16,7}

But would it? Research carried out by the Born Free Foundation into some of the larger and better-known zoos in the UK, collectively the Consortium of Charitable Zoos (CCZ), and the conservation status of species they house and breed in captivity, suggests that such claims are gross exaggerations.

THE CONSORTIUM OF CHARITABLE ZOOS

In 2005, 'The Manifesto of Zoos' was commissioned by nine British zoological societies (see Appendix 1) who self-identified as being '*leading*' and '*progressive UK zoos*'.¹ These societies today are represented under the CCZ moniker which is made up of 13 different zoos including some of the largest zoos in the UK in terms of revenue and collection sizes. The Manifesto article, attempted '*to establish the overall value and true "public good", actual and potential, available to British Society,*' through these zoos.¹ In 2006, Born Free produced a report entitled, *Animal Ark or Sinking Ship? An evaluation of conservation by UK zoos*, challenging the Manifesto and questioning the degree to which CCZ zoos genuinely represented a significant part of the broader conservation solution for saving species.⁵ It concluded '*the claim that zoos keep species in need of active conservation measures is at best equivocal*'.⁵

Fifteen years on, this report (*Conservation or Collection? Evaluating the conservation status of species housed and bred in charitable UK zoos*) re-evaluates the role of these zoos in conservation today to decipher how '*progressive*' they have been, whether their self-proclaimed potential has been in any way realised, and whether BIAZA's headline-grabbing statements regarding the consequences for conservation of zoos closing can be justified. The evaluation was carried out using publicly available resources including annual zoo inventories obtained from Local Authorities (responsible for the licensing of zoos in the UK) via Freedom of Information requests, the IUCN Red List of Threatened Species, and the European Association of Zoos and Aquaria (EAZA) *Ex-situ* Breeding Programme Overview (January 2020).^{8,9}

CCZ members housed over
120 red-necked wallabies
(Least Concern)



South American coati *Nasua nasua*



Zoo population:
There are around 1000 South American coatis kept safely in zoos

Wild Distribution: South America



Habitat:



Classified as an invasive species by the European Union since 2015 – there is estimated to be over 140 Coatis in UK zoos including CCZ members

WITH LIMITED SPACE, ZOOS SHOULD FOCUS ON SPECIES IN CONSERVATION NEED.

THE CONSERVATION STATUS OF ANIMALS KEPT IN LEADING CHARITABLE ZOOS

Zoos can only house a limited number of animals and species.^{10,11} In 2011, it was estimated the total global enclosure space for zoo animals could fit within an area the size of Birmingham (approximately 100 square miles).^{12,13} It would therefore seem logical that much of the space within a zoo should be dedicated to species in conservation need, and for which the *ex-situ* keeping and breeding of animals has been identified as a conservation priority. This would indicate that zoos were at least attempting to maximise their *ex-situ* conservation potential. In the Handbook of the Zoo Experts Committee (a body established by DEFRA [Department for Environment, Food & Rural Affairs] to provide independent and technical advice to UK ministers on zoo policy in 2011; replacing the Zoo Forum) it states that zoos should regularly review their animal collections, ‘with a view to increasing enclosure space to be assigned to conservation sensitive species.’¹⁴ Whilst the World Zoo and Aquarium Strategy recommends, ‘To achieve meaningful conservation outcomes, zoos and aquariums should focus their attention on threatened species for which they can make a difference’. Annual inventories from CCZ member zoos suggest this is not the reality.¹⁵

Copies of the most recently submitted stocklists for CCZ facilities were provided by the relevant licencing authorities following requests under the Freedom of Information Act. Annual stocklists ranged from 2018-2020. Data for fish and invertebrates were omitted due to the common practice of only *estimating* population numbers for these taxa in zoological collections. The current conservation status of species housed at each zoo was determined using the IUCN Red List of Threatened Species.⁸ Depending on their conservation status in the wild, the IUCN assigns species to one of the following categories: Extinct, Extinct in the Wild, Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern, Data Deficient or Not Evaluated. Species categorised as Critically Endangered, Endangered or Vulnerable are collectively defined as ‘threatened’. As in the 2007 Born Free report, ‘threatened’ species plus those categorised as Near Threatened and Extinct the Wild are described here onwards as being of ‘Conservation Concern’ and are considered species that could potentially benefit from *ex-situ* conservation efforts by zoos.

Stocklist data revealed that CCZ zoos housed 13,281 non-fish vertebrates (amphibian, birds, mammals, and reptiles). These individuals represented 922 taxa (species or sub-species) that could either be identified on the IUCN Red List or classified as domesticated within the Zoo Licencing Act.¹⁶

Key findings include:

- Only 26.6% of CCZ housed taxa are threatened (an increase of just 1.9% compared to 15 years ago)
- 52.4% of CCZ housed taxa are categorised as Least Concern on the IUCN Red List (lowest possible category) compared to 62% 15 years ago (Figure 1). However, CCZ members now house more taxa categorised as Least Concern than 15 years ago (501 vs 439)
- 39.5% of CCZ housed taxa can be considered to be of 'Conservation Concern' (an increase of just 2.1% compared to 2007)
- CCZ facilities housed more domesticated animals (360) than animals from species which are categorised as Extinct in the Wild (64).

Conservation status of species in CCZ collections

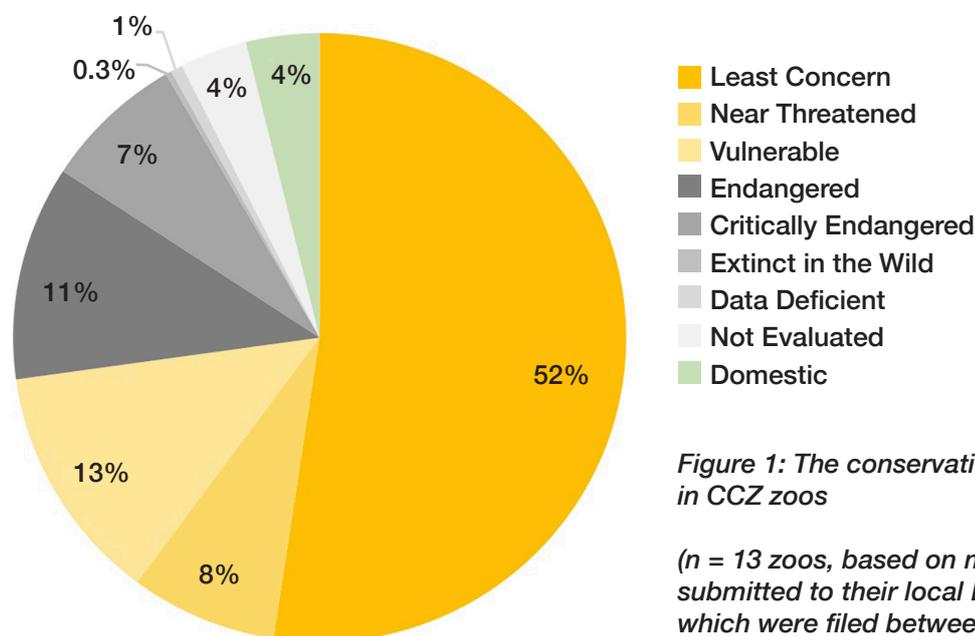


Figure 1: The conservation status of species in CCZ zoos

(n = 13 zoos, based on most recent stocklist submitted to their local Licensing Authority which were filed between 2018 - 2020)

These results demonstrate a lack of meaningful progress over the past 15 years.

EAZA has previously stated a zoo's 'resources are always at a premium' whilst the 2005 Manifesto acknowledged holding spaces are, 'limited'.^{1,17} Conway (2011) emphasising that if zoos are committed to conserving species in danger of extinction, 'they must reduce the number of species they maintain that do not need help.'¹² Despite this, CCZ facilities have neither seemingly made negligible progress in transitioning towards holding a majority of species which are threatened or even of 'Conservation Concern', nor have they phased-out Least Concern species which still represent the majority of species held.



Popular in zoos, the common marmosets' conservation status is Least Concern

Amphibians are the most threatened class of organism on Earth, with 40% of 7,166 identified species threatened with extinction.⁸ In spite of this, CCZ member zoos keep just 0.4% (29) of threatened amphibian species, even though resources and space required to house such species is a fraction of that required by other vertebrates. Representatives of threatened species among mammalian taxa equated to 8.4%, a small reduction compared to 15 years ago (8.9%). The total number of mammal and bird taxa held equated to 71.1% of all housed taxa which indicates a continuing bias towards species perceived to be more appealing to visitors, rather than reflecting their conservation status. It is also alarming to note that CCZ zoos hold more domesticated animals than animals Extinct in the Wild.

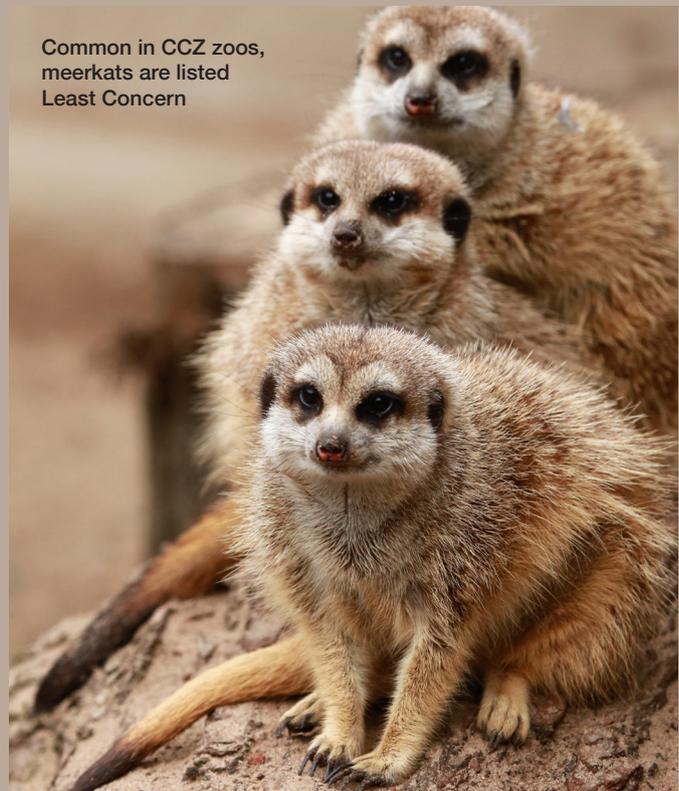


Like 64.6% of amphibian species kept in CCZ zoos, the White's tree frog (listed Least Concern) is not threatened with extinction

© E Galbr

It should be noted zoos do not claim to only house threatened species. They do, however, use ambiguous terms when describing their animals, such as, 'rare', 'rarest', and 'extraordinary'.^{18,19,20} The fact is that threatened species in CCZ facilities are in the minority. CCZ members now hold 177 more IUCN Red List taxa than 15 years ago, yet the proportion of these that are categorised as threatened has remained almost the same. This is because these zoos now hold 62 more species categorised as Least Concern than they did in 2005. One potential reason for this, which has previously been suggested by other authors, is that the 'personal interests' or 'stamp collecting' mindsets of zoo management influence the species selection process.^{21,22} These findings suggest CCZ animal collections are focused on species thought to be attractive to the public, rather than those which are threatened and could potentially benefit from being managed *ex-situ* for conservation purposes.

Zoos argue their collections perform an educational role to visitors. This claim is highly debatable.¹¹ Meerkats, for example, are regarded as a popular species and can be found among the collections at a number of zoos, but are categorised 'Least Concern'.²³ Zoos often house them in male-dominated social groupings, with one or two females. This contrasts with wild groups which typically contain several subordinate females.²⁴ This reduces the likelihood of subordinate females being driven out of the group by the dominant female. In the wild, an evicted female would attempt to form her own group, but captive management prevents this opportunity and can result in serious injuries from unescapable altercations. Thus, zoos need to create a second group or move the evicted individual to another animal collection, activities that are costly and time-consuming. Unnatural social groupings, therefore, save zoos space and money. Captivity and current captive management practices frequently fail to provide an appropriate physical and social environment for this species as would occur in the wild.



Common in CCZ zoos, meerkats are listed Least Concern

Black Howler Monkey

Alouatta caraya



Female

Male

Look closely! The hairless underside of their tails has evolved to help them grip branches.



South America



Currently not at risk of becoming Extinct in the Wild



THE CONSERVATION STATUS OF ANIMALS

BRED IN LEADING CHARITABLE ZOOS

ONLY 35.4% OF SPECIES BRED AT CCZ ZOOS ARE CLASSIFIED AS THREATENED.

Current UK zoo guidelines state that, 'zoos can exhibit animals which are not part of managed programmes, however, over time they are encouraged to increase the proportion of conservation sensitive species they hold.'¹⁴ It would therefore not be unreasonable to expect zoos to increasingly focus on the keeping, and where appropriate breeding, of species with a 'threatened' conservation status, reduce the breeding of non-threatened species to adjust the imbalance described, and maximise potential conservation benefits that might be realised from the limited space and resources available. Such a trajectory would indicate progress towards reduction and eventual elimination of the unnecessary and unjustified keeping and breeding of non-threatened species.

Twelve of the 13 CCZ zoos provided information on species bred during the year. The CCZ comprises 13 of the 50 UK members of EAZA.²⁵ Breeding programmes coordinated and managed by EAZA consist of what they identify as high priority European Endangered species breeding Programmes (EEP) and less intensive European Stud Books (ESB).⁹ The conservation status of species bred at CCZ members were reviewed, as well as the number and proportion of species included in EAZA *ex-situ* cooperative breeding programmes. Stocklist data revealed 302 species bred by CCZ zoos.

Results show:

- Only 35.4% of species bred at CCZ zoos are classified as threatened
- 50% of species bred are categorised as Least Concern (Figure 2)
- Total number of species in EAZA breeding programmes at CCZ facilities was less than 15 years ago (212 vs 218)
- 77.8% of species housed are not part of an established EAZA breeding programme
- 70.5% of species bred by CCZ zoos are not part of an EAZA breeding programme
- 58% of species that are part of an EAZA breeding programme are not being bred at CCZ zoos.

Conservation status of species born in CCZ collections

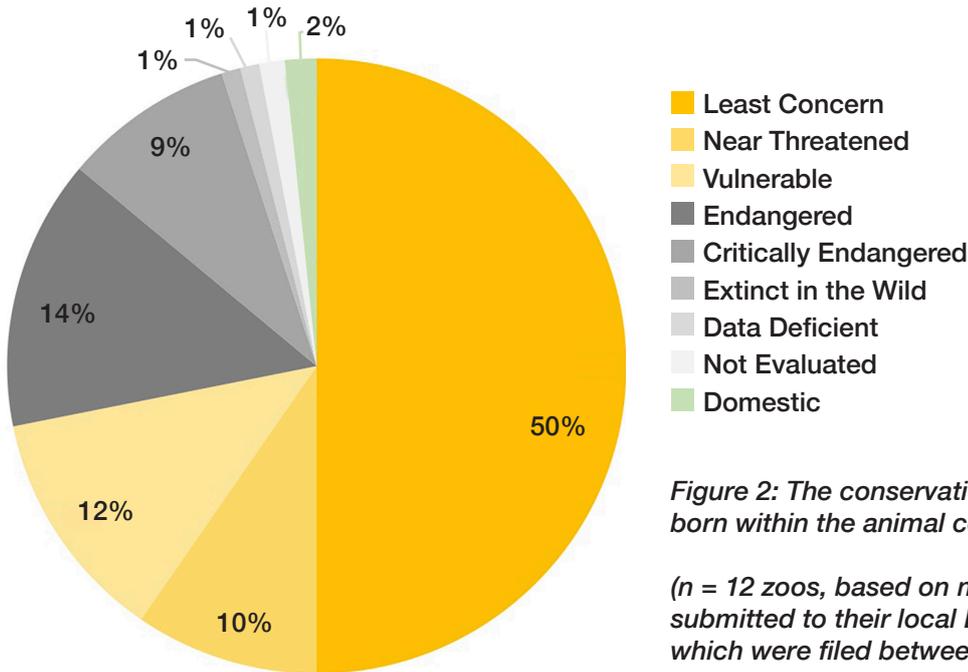


Figure 2: The conservation status of species born within the animal collections of CCZ zoos

(n = 12 zoos, based on most recent stocklist submitted to their local Licensing Authority which were filed between 2018 - 2020)

Species born in CCZ collections as part of an EAZA ex-situ breeding programme

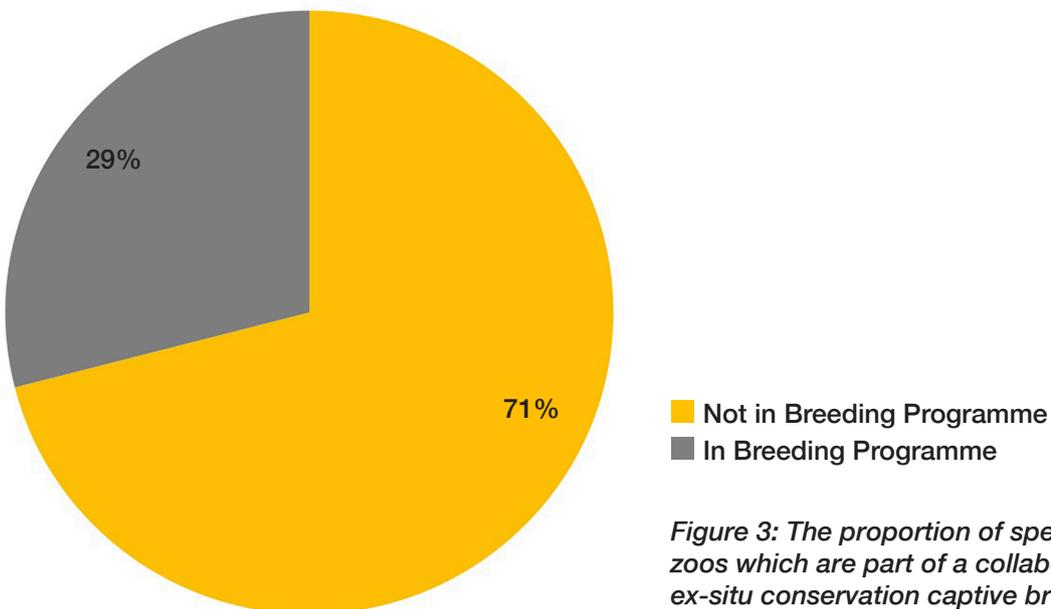


Figure 3: The proportion of species born at CCZ zoos which are part of a collaborative EAZA ex-situ conservation captive breeding programme.

It is concerning that zoos continue to breed Least Concern species, which make up half of all species bred at these institutions. In addition, over 70% of species bred were not part of a collaborative, EAZA breeding programme. This implies that even if a conservation strategy for these species exists, captive breeding has not been identified as a required conservation action. Even for those species with established breeding programmes, captive breeding is not necessarily identified as a part of the agreed conservation strategy, for example giraffe (*Giraffa camelopardalis*).²⁶

There are currently 391 established EAZA *ex-situ* breeding programmes.⁹ The number of species' breeding programmes exceeds the number of species any one CCZ member houses (391 breeding programmes vs 346 species housed at CCZ member with the greatest number of species). Despite this, more than three-quarters (77.8%) of species in CCZ collections are not part of an established *ex-situ* conservation breeding programme which seriously undermines their conservation claims. Moreover, in this study, the majority of species which were part of an EAZA breeding programme did not breed (58%). This could be due to individuals being prevented from breeding due to being housed in bachelor groups or because of unsuitable genetic background. Similarly, it could be because individuals are either too old/young or forced into unnatural and incompatible pairings. The fact that total number of species breeding programmes exceed the total species any one zoo holds begs the question as to why less than a quarter of species in CCZ zoos are part of established EAZA breeding programmes?

Despite this, zoo announcements regarding captive births are usually heralded as great news for conservation. However, such claims need to be contextualised and, where necessary, challenged.

The prospects of reintroducing captive-born individuals to the wild are remote. A 2000 study found that just seven of 54 projects were successful where captive-born animals were reintroduced to the wild.²⁷ A more recent study found only 13% of carnivore reintroduction projects were successful when the animals were captive born.²⁸ While a study by Seddon *et al* (in 2005) found that of the 94 reptile and amphibian reintroductions monitored by the IUCN Reintroduction Specialist Group (now known as the IUCN SSC Conservation Translocation Specialist Group), only nine (10%) involved specimens originating from a zoo.²⁹ The inability of *ex-situ* conservation breeding to contribute meaningfully to *in-situ* conservation led the authors to conclude that The Ark concept was '*irretrievably shipwrecked*'.^{11,30} Despite this, the zoo community continues to point to a handful of increasingly ancient success stories including the Arabian oryx (*Oryx leucoryx*) and California condor (*Gymnogyps californianus*) to justify the housing of thousands of other species.³¹ Zoos continue to self-identify as beacons of conservation reintroduction, but their achievements are likened more to a shooting star. Any success stories they have been a part of, no matter how long ago, provide '*eye-catching attraction but not long-term illumination*'.³¹

"Reintroduction was a guiding light of convenience in the 1970s and 1980s as zoos strove to demonstrate their conservation credentials in their evolution from zoological parks. Yet it has proved to be a shooting star instead, providing an eye-catching attraction but not long-term illumination for conservation."

PROSPECTS OF REINTRODUCING CAPTIVE BRED INDIVIDUALS TO THE WILD ARE INCREDIBLY LOW.

Squirrel monkeys, common in CCZ zoos, are listed Least Concern

Capibara, a giant South American rodent, are also officially Least Concern

IT IS CONCERNING THAT ZOOS CONTINUE TO BREED NON-THREATENED SPECIES.



The gradual and subtle change in emphasis from the aspirations set out in the 'World Zoo Conservation Strategy' nearly 30 years ago, highlights the zoo community's tacit acceptance that *ex-situ* conservation programmes are highly unlikely to lead to successful reintroduction.³¹ The most recent strategy, published in 2015, even urges zoos to proactively manage and protect species in their natural habitats.¹⁵ Nevertheless, zoos and zoo associations still place disproportionate emphasis on the conservation status of new-born animals in their media output.^{32,33} They are also highly selective in terms of which births are announced. Although half of the species bred by members of the CCZ were Least Concern, zoos typically emphasise the births of Endangered or Critically Endangered in the media. This media smokescreen can lead to false perceptions of the conservation contributions and impact of zoos.

Another zoo tactic is to declare births as a 'World First'. Chester Zoo heralded the hatching of collared trogon chicks (a bird species naturally found in Central and South America, currently classified as Least Concern) in 2019 as a 'World First,' with much fanfare.^{34,35} Yet there is no established *ex-situ* breeding programme for this species, which calls into question the motivation for achieving such a 'world first'. It is concerning that zoos continue to breed non-threatened species and are seemingly unable to take the measures necessary to address the imbalance in conservation status within their collection. Animals are expensive to house and the species these zoos hold do not appear to prioritise or reflect conservation and reintroduction objectives, claimed as part of their *raison d'être*.³¹ As a result, funds used to unnecessarily house non-threatened species are diverted away from valuable and effective *in-situ* conservation projects.

The modern zoo markets itself as a centre for conservation and this narrative is a major source of income generation.³⁶ However, regulatory and oversight mechanisms to ensure such claims are justified are vague and subjective, with assessments varying between local authorities. Currently, UK zoos are only required to participate in one of five conservation measures listed within the Zoo Licencing Act, of which captive breeding is one. Most of these measures can currently be fulfilled by zoos with no actual benefit to the conservation of the species involved. The Secretary of State's Standards of Modern Zoo Practice puts the onus on the zoo stating that, 'Zoos must be able to demonstrate their conservation measures.'³⁷ The criteria for assessing a zoo's contribution to conservation is, however, ambiguous. Clear, transparent and assessable criteria that zoos should meet in order to quantify and justify their contribution to conservation are urgently required.

The findings within this report once again call into question the degree to which even the most progressive zoos can truly be described, or describe themselves, as centres of conservation. Our findings suggest the proportion of species and animals of 'Conservation Concern' held and bred in UK zoos remains woefully low, and that zoos have made little effort over the past 15 years to rectify this situation. **In short: nothing really has changed.**

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APPENDIX 1

Consortium of Charitable Zoo members:¹

- The Zoological Society of London (Regent's Park Zoo & Whipsnade Wild Animal Park)
- The North of England Zoological Society (Chester Zoo)
- The Royal Zoological Society of Scotland (Edinburgh Zoo & Highland Wildlife Park)*
- The Bristol and Clifton Zoological Society (Bristol Zoo & Wild Place Project)**
- The Wild Planet Trust (Paignton & Newquay Zoo)***
- Marwell Preservation Trust (Marwell Zoo)
- Twycross Zoo East Midlands Zoological Society
- Dudley Zoological Society
- Zoological Society of Wales (Welsh Mountain Zoo)

* Highland Wildlife Park has been owned by The Royal Zoological Society of Scotland since 1986 but was not mentioned in "The Manifesto of Zoos" for unknown reasons³⁸

** Wild Place Project has opened since the original 2005 article

*** Previously known as The Whitley Wildlife Conservation Trust in original 2005 article. Living Coasts, which was a part of the trust when the original article was published, has since closed.



Born Free Foundation 2nd Floor, Frazer House, 14 Carfax, Horsham, West Sussex, RH12 1ER, UK

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