



At least 5,624 species of vertebrate animals are threatened with extinction worldwide<sup>1</sup>. Humankind's contribution to the rapid loss of the earth's flora and fauna is now a widely acknowledged phenomenon. To date, 190 countries have pledged to make a concerted effort to conserve the world's threatened species by signing up to the Convention on Biological Diversity.

The involvement of zoos in the conservation of biodiversity, and specifically *ex situ* conservation<sup>2</sup>, became a legal obligation in Europe in 2002 with the implementation of the *European Zoos Directive*. The *Directive* was fully incorporated into UK zoo legislation in 2003. Perhaps recognising an opportunity to refute growing scepticism over the keeping of animals in captivity, zoos assumed the role of animal 'arks' and promoted their new conservation purpose.

**"About three quarters of the animals housed at [the zoo] are officially classed as endangered species."**

**Claim of a CCZ zoo on its website (2007)**

However, despite claims by zoos that their contribution to conservation is significant, to date there has been no reliable mechanism to assess zoos' performance. Should their conservation credentials be taken on trust?

In the last 12 months, the Born Free Foundation, international wildlife charity and zoo watchdog, has undertaken a series of investigations in an attempt to assess the conservation commitment of the UK's more 'progressive' zoos.

This review focused on the performance of 13 zoos in the UK, known as the Consortium of Charitable Zoos<sup>3</sup> (CCZ), and described as 'the most progressive zoos in the country' (*The Manifesto for Zoos*, John Regan Associates 2005). Managed and financed through nine British zoological societies, the CCZ's charitable objectives include the keeping and breeding of threatened animals, and supporting conservation projects in the wild.

The review used a number of publicly available resources to carry out its evaluation including: The IUCN Red List of Threatened Species<sup>TM1</sup>; the EDGE of Existence programme<sup>4</sup>; individual CCZ

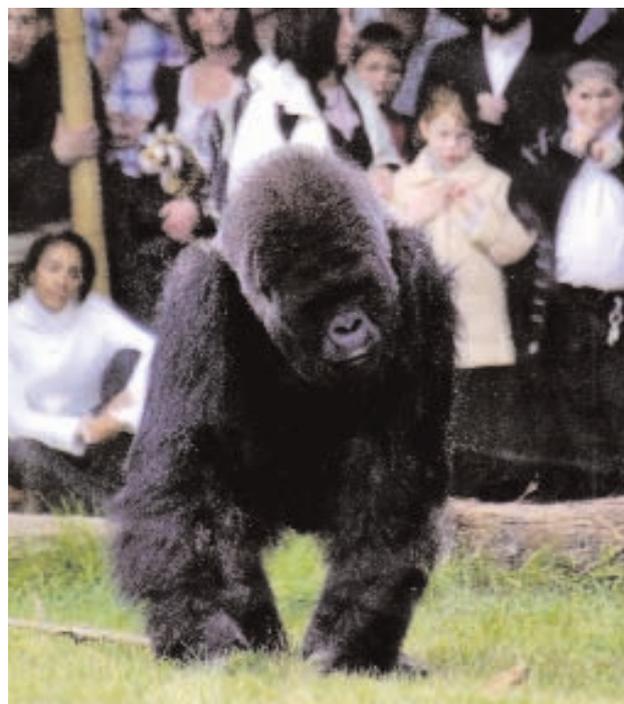
Annual Reports, published accounts and animal inventories<sup>5</sup>; BIAZA<sup>6</sup> published data; data on European Co-operative Breeding Programmes (EEPs & ESPs<sup>7</sup>) from EAZA<sup>8</sup>; ICM Research public opinion survey (May 2007)<sup>9</sup>.

Full details are available in Born Free reports: *Is the Ark Afloat? Captivity and Ex Situ Conservation in UK Zoos* (2007) and *Committed to Conservation? An Overview of the Consortium of Charitable Zoos' In Situ Conservation Dividend* (2007). Both reports available at [www.bornfree.org.uk/zoocon](http://www.bornfree.org.uk/zoocon)

## The IUCN Red List of Threatened Species<sup>TM</sup> compared to species in the CCZ

The IUCN Red List catalogues and highlights those taxa facing a higher risk of global extinction. In this review, the Red List status for all mammal, bird and amphibian<sup>10</sup> species held by the CCZ was determined.

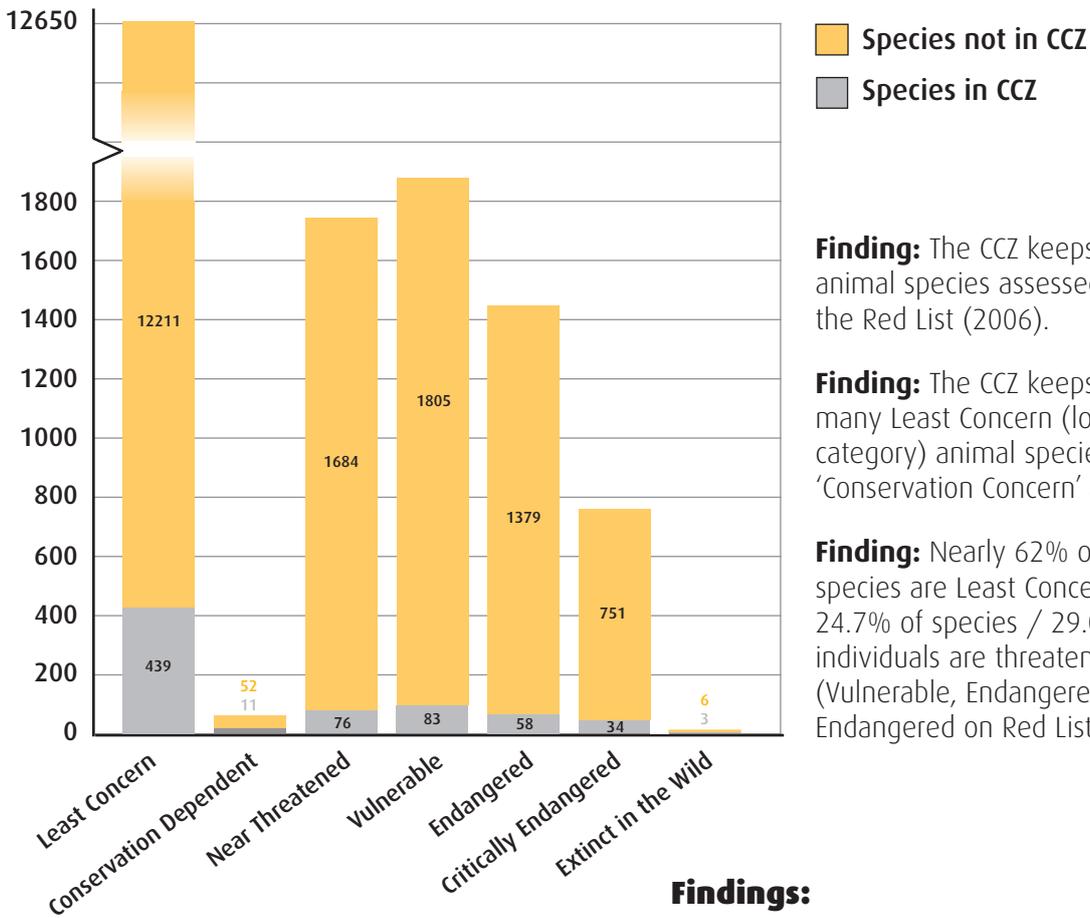
So as not to exclude species for which the CCZ might claim a conservation imperative, the authors combined official Red List categories of Conservation Dependent, Near Threatened, Vulnerable, Endangered, Critically Endangered and Extinct in the Wild under the term '**Conservation Concern**'.



**London Zoo's new 'Gorilla Kingdom' (2007) reportedly cost £5.3 million. It houses one male and two female Western lowland gorillas (Endangered). This money could have transformed wild gorilla conservation and protected thousands of gorillas and their fragile habitats.**

## RESULTS

How many of the total number of Red List-assessed animal species are found in CCZ zoos?

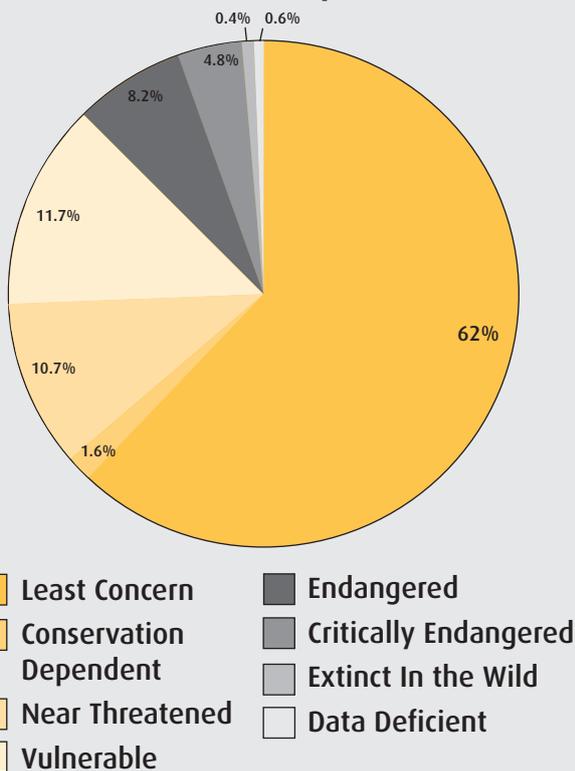


**Finding:** The CCZ keeps only 3.5% of all animal species assessed for inclusion on the Red List (2006).

**Finding:** The CCZ keeps nearly twice as many Least Concern (lowest Red List category) animal species compared to 'Conservation Concern' animal species.

**Finding:** Nearly 62% of CCZ animal species are Least Concern and only 24.7% of species / 29.0% of individuals are threatened (Vulnerable, Endangered and Critically Endangered on Red List).

Conservation status of species in the CCZ



### Findings:

#### Mammals

- 91% of threatened mammal species not represented in the CCZ.
- More than 90% of EDGE species not represented in the CCZ.
- Nearly half (48%) of CCZ species are Least Concern (lowest Red List category).
- Only 37% of CCZ species classed as threatened on the Red List.

#### Birds

- Nearly 95% of threatened bird species not represented in the CCZ.
- Nearly three quarters (73.3%) of CCZ species classed as Least Concern.
- Less than one fifth (16.5%) of CCZ species classed as threatened on the Red List.

#### Amphibians

- Only 11 (0.6%) of all 1,811 threatened amphibian species represented in the CCZ.
- Most (66%) CCZ species classed as Least Concern.
- The CCZ keeps less than 1,000 individual amphibians

## Are zoos committed to conservation?

Those zoos affiliated to national and international zoo associations, such as BIAZA and EAZA, to which the CCZ belong, appear to distance themselves from many other zoos by claiming a stronger commitment to conservation. However, evidence gathered by Born Free suggests this CCZ claim is difficult to substantiate.

Not only are the majority (62%) of CCZ species of Least Concern in the wild, but less than one quarter are threatened (Vulnerable, Endangered or Critically Endangered). Indeed, only 37% of species are of 'Conservation Concern' (Conservation Dependent, Near Threatened, Vulnerable, Endangered, Critically Endangered or Extinct in the Wild). The apparent lack of commitment by the CCZ to keeping and breeding threatened species is acknowledged in 'The Manifesto for Zoos' (2005), which reports limited space means the CCZ can only maintain 'a minority of endangered species'.



Photo © BFF

*Elephants (Asian species - Endangered; African - Vulnerable) have a very poor record in captivity with compromised longevity, physical and psychological disorders, and low breeding success. In an attempt to make captive populations sustainable, European zoos are considering the import of yet more elephants caught from the wild.*

Furthermore, the CCZ's limited space does not appear to be prioritised for the most threatened taxa. Amphibians, for example, have the highest proportion of species threatened in the wild, yet threatened amphibians are largely under-represented in zoos (just 0.6% of all threatened species). In terms of utilising space and financial resources to achieve the highest species conservation benefit, maintaining captive populations of amphibians could be more efficient (but possibly less publicly appealing) than focusing on larger bodied taxa.

*"...members are putting less than a quarter of their space over to threatened taxa..."*

**British & Irish Association of Zoos & Aquariums (2005)**

## Are zoos committed to breeding threatened species?

Co-ordinated captive breeding programmes, according to zoos, were established to maintain genetic diversity over multiple captive generations and maximise the species' viability, should reintroduction into the wild become an option. It could therefore reasonably be expected that all threatened species kept by zoos would be managed under such programmes.

Research has already shown the CCZ hold less threatened species than might be expected, but this investigation has revealed additional areas of under-performance:

**Finding:** A significant proportion of populations of threatened CCZ species (20-24%) were housed in groups that made breeding unlikely at time of investigation (single-sex groups, solitary animals etc).

**Finding:** The CCZ keeps only one third of total animal species for which a captive breeding programme exists.

**Finding:** It appears one quarter of species in European breeding programmes kept by the CCZ are listed as Least Concern (lowest Red List category).

**Finding:** Regional breeding programmes exist for more than half of mammal taxa kept by the CCZ, but for only 18% of birds and less than 5% of amphibian taxa.

**If:** most CCZ species are of Least Concern in the wild; a quarter of species kept with regional breeding programmes are Least Concern; birds and amphibians are under-represented; threatened species represent less than a quarter of species kept; species of 'Conservation Concern' represent about a third of those kept; **then** it appears that a substantial proportion of CCZ activities apply to species not at significant risk in the wild. It can reasonably be argued these resources would be better spent protecting wildlife in its natural habitat.



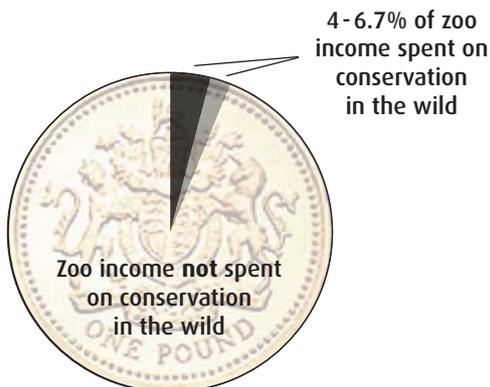
Photo © Charles Smith, United States Fish and Wildlife Service

*The golden toad is now thought to be extinct, probably due to climate change. There are no populations in any zoos. Despite the global threat facing amphibians, the UK's most 'progressive' zoos keep only 11 of the 1,811 species threatened with extinction (0.6%).*

## Are zoos committed to the funding of conservation in the wild?

**Finding:** The CCZ appears to spend an estimated 4-6.7% of gross income<sup>11</sup> on conservation in the wild.

**Finding:** For an average CCZ adult entrance fee of about £10.30, only 46-70p appears to go towards conservation in the wild. One CCZ zoo appears to contribute as little as 6p.



## Public perceptions

The evidence in Born Free's reports seems at odds with public expectations. The ICM Research<sup>9</sup> opinion poll commissioned by Born Free (May 2007) asked:

**Question:** 'What percentage of animal species in UK zoos do you think are threatened in the wild? By threatened we mean the animal is classed as Vulnerable, Endangered or Critically Endangered'.

**Results:** On average, the public believe 41% of animal species kept in zoos are threatened in the wild.

**In reality, less than 25% of CCZ species are threatened in the wild.**

**Question:** 'What percentage of UK zoos' annual income do you think is spent on conservation of threatened species in the wild?'

**Results:** At least 69% of the public believe zoos spend more on conservation in the wild than they actually do.

**The CCZ appears to spend four times less of their income on conservation in the wild than the public believe.**



Photo © Dr Joseph Tobias, University of Oxford

*The Critically Endangered blue-throated macaw is one of the few rare bird species kept in the CCZ. In fact nearly 75% of CCZ birds are classed as Least Concern (lowest Red List category) and at least risk of extinction.*

<sup>1</sup> IUCN (World Conservation Union) taxonomic, conservation status and distribution information on taxa that have been globally evaluated, designed to determine the relative risk of extinction ([www.redlist.org](http://www.redlist.org)).

<sup>2</sup> Protecting a species or population by removing it from its habitat and placing it elsewhere.

<sup>3</sup> ZSL London Zoo, ZSL Whipsnade Zoo, Chester Zoo, Dudley Zoo, Paignton Zoo, Newquay Zoo, Living Coasts, Marwell Zoo, Twycross Zoo, Edinburgh Zoo, Highland Wildlife Park, Welsh Mountain Zoo, Bristol Zoo.

<sup>4</sup> An index of Evolutionary Distinct and Globally Endangered species (Isaac *et al* 2007) which assesses conservation status based on threats in the wild and phylogenetic diversity ([www.edgeofexistence.org](http://www.edgeofexistence.org)).

<sup>5</sup> Available from Charity Commission ([www.charity-commission.gov.uk](http://www.charity-commission.gov.uk)).

<sup>6</sup> British & Irish Association of Zoos & Aquariums ([www.biaza.org.uk](http://www.biaza.org.uk)).

<sup>7</sup> German acronyms referring to regional captive breeding programmes.

<sup>8</sup> European Association of Zoos & Aquaria ([www.eaza.net](http://www.eaza.net)).

<sup>9</sup> ICM Research interviewed a random sample of 1004 adults aged 18+ by telephone between 22-23 May 2007. Interviews were conducted across the country and results weighted to the profile of all adults. Full results available within Born Free reports available at [www.bornfree.org.uk/zoocoon](http://www.bornfree.org.uk/zoocoon). ICM is a member of the British Polling Council and abides by its rules. Further information at [www.icmresearch.co.uk](http://www.icmresearch.co.uk)

<sup>10</sup> The term 'animal' in this document refers to mammals, birds and amphibians (reptiles, invertebrates and fish could not be included in this analysis due to inaccurate or incomplete data in stocklists and/or the IUCN Red List).

<sup>11</sup> Through Gift Aid, all registered UK charities can recover tax paid on voluntary donations. The gross income raised through voluntary donations and entrance fees could therefore exceed values used.

## SUMMARY AND KEY FINDINGS

**Are UK zoos really committed to conservation? Born Free's investigation reveals some startling findings:**

1. **91.1%** of threatened mammal species, and more than **90%** of EDGE mammal species are **not** represented in the Consortium of Charitable Zoos ('the most progressive zoos in the country').
2. Nearly **95%** of threatened bird species are **not** represented in CCZ zoos.
3. The CCZ keeps only **11** of the 1,811 threatened species of amphibian (ie 0.6%).
4. The CCZ only keeps **3.5%** of the total number of animal species (mammals, birds and amphibians) listed by the IUCN Red List of Threatened Species (2006).
5. More than **60%** of species kept by the CCZ are in the '**Least Concern**' category (lowest IUCN Red List category).
6. Only **37%** of CCZ animals are higher risk than Least Concern.
7. Only **one third** of animal species for which a captive breeding programme exists are kept by the CCZ.
8. **One quarter** of CCZ species included in European breeding programmes are classed as Least Concern.
9. At least **69%** of the public believe zoos spend more on conservation in the wild than they actually do. The CCZ appears to spend an estimated **4-6.7%** of gross income on conservation in the wild. The public believes zoos spend about **four times** that amount.
10. While the public believes at least **41%** of species kept in zoos are threatened in the wild, **but less than 25% of CCZ species are threatened in the wild.**

If the above indeed represent the CCZ's commitment to conservation, then legitimate consideration should be given to whether such zoos are really part of the broader conservation solution, or whether limited financial resources and human effort would be more effectively applied directly to conservation of threatened species in their wild habitat.



Photo © BFF

*The Critically Endangered black rhino is one of just 3.5% of threatened animal species listed by the Red List that are kept in CCZ zoos. Their poor breeding record in captivity strongly suggests effective protection in their natural habitat is the best conservation strategy.*

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# An evaluation of conservation by UK zoos