

# Naturewatch

## Fact Sheet on Zoos

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### Introduction

On a recent trip to a well known British city zoo, two guys in their twenties stood, entranced, by an enclosure containing naked mole rats. The rats were highly active: and seemed far too busy with their social lives to worry about the restrictions in their conditions. One of the guys said, with eloquent simplicity, "It is amazing what is in this world." His appreciation of the animal kingdom was enhanced that day. Not far away, in an ill-thought out enclosure, a giant anteater paced, manically. Two women paused as they went past with a push-chair: one commented, "It's sad, isn't it?" They would have left the zoo disillusioned.

These cameos encapsulate why, in recent years, zoos have attracted both ardent supporters and harsh critics. On the positive side:

- Zoos are very effective in enabling people – and especially children – to become familiar with animals they would not normally see in their home country. They therefore have an important educational role.
- They also have a positive role in conservation in preserving endangered species and enabling re-introductions into the wild to take place.

On the negative side:

- Since zoos deprive animals of their freedom, it is difficult for species such as elephants, bears and lions to be content in the limited conditions of a zoo.
- Maintaining the zoos in healthy and hygienic conditions is very labour-intensive and requires the zoo to be commercially viable.
- The conservation effort is also often focused on the glamour species: it is astonishing how many golden lion tamarins may be seen in captivity in the UK, whereas there are no golden-rumped elephant shrews.

We at Naturewatch believe that zoos do provide an important role in education and conservation, but we also maintain that, too often, not enough is done to optimise the conditions for the animals. It is not clear how it benefits anyone to see a giant anteater pacing endlessly, but if zoos were to become showcases of best practice in the care and maintenance of wild animals, there are obvious educational benefits.

In this fact sheet we summarise the requirements of existing legislation. We highlight some zoos which have set high standards for their animal welfare. We show you how you can tell whether a zoo animal is distressed and what you can do if this happens.

### What is the legislation for Zoos?

#### UK legislation

Zoos in the UK are governed by national legislation, which in turn needs to comply with the European Union Directive. The relevant act is the Zoo Licensing Act of 1981, and the responsibility for its implementation is the Department of the Environment, Food and Rural Affairs (DEFRA). Under this act, a "Zoo" is defined as "an establishment where wild animals are kept for exhibition to the public" for more than seven days per year, and excludes circuses and pet shops. Over 400 establishments in the UK are covered by this act: in addition to well-known zoos like London and Bristol, this includes more specialist institutions like farm parks, bird of prey centres and aquaria.

DEFRA have also produced a document, "Standards of Modern Zoo Practice", which elaborates the implications of the Act for actual zoo management. The core of the document is based on the Five Freedoms, which were originally produced by the Farm Animal Welfare Council, and were adapted for zoo animals. These are:

- **Food and water:** To be provided in sufficient quantity in a hygienic way suitable for the species.
- **Environment:** this should be suitable for the species, including adequate shelter from the elements and the opportunity for burrowing animals to burrow and climbers to climb.
- **Healthcare:** prevention of injury and disease together with adequate veterinarian facilities.
- **Normal behaviour:** adequate opportunity should be provided for normal behaviour to be expressed, for example by using environmental enrichments.
- **Protection from fear and distress:** taking into account group dynamics and places to escape from other animals as necessary.

#### European Union requirements

In 1999 the European Union brought out its directive on "Keeping Wild Animals in Zoos". Although the British legislation already complies with most of it, it introduced two important new elements: it is now a requirement for all zoos to actively participate in conservation and to provide educational resources to accompany this. A zoo which fails to fulfill the requirements for licensing may be fully or partially closed down. This is a welcome development since it is potentially possible for a zoo to be closed for those species it is unable to house adequately, but can remain open (and commercially viable) for others. Unfortunately, by the end of 2002, only five of the 15 current member states of the European Union had actually enacted this directive – Britain did so in early January 2003.

## When zoos get it right

While it is very hard for a zoo to provide adequate facilities for the larger animals, they are often able to succeed with smaller ones. UFAW (the Universities Federation for Animal Welfare) have an annual award scheme for zoos, either for those which attain the best current standards for a particular species, or for ones which show innovative use of low-cost equipment. For example, in 1994 this went to Drusillas Zoo for providing



*The spectacular Prevo's squirrel. The Shaldon Wildlife Trust received an award for its squirrel complex in 1996. Photo © Hogle Zoo, Utah*

bungee cord for primates. In 1996 the Shaldon Wildlife Trust received an award for its squirrel complex, in which there was a maze of tree-top runs, complete with nesting sites and feeding stations. These were designed to encourage the natural mating behaviour of the spectacular tri-coloured Prevo's squirrel: the females make the males chase them for up to 48 hours prior to breeding in order to display their physical fitness. These runs have also aided in a breeding program for the red squirrel, one of Britain's native species which is nationally threatened.

## A conservation success story (almost)

<b>Golden Lion Tamarin</b>	<b><i>Critically endangered</i></b>
Length	28cm (+ tail 36cm)
Weight	0.5 kg
Lifespan	<15 yrs
Distribution	Brazilian Atlantic forest
Habitat	Lowland tropical forest up to 1000m
Diet	Insects and fruit; also small animals
Population	1975 ~200; 2002 ~1000

The Golden Lion Tamarin is a notable example of a species that has benefited from a co-ordinated international effort. It became critically endangered because of the destruction of its original habitat, so that by the 1970s only 2% of it remained – along with only 200 tamarin individuals.



*Golden Lion Tamarin*

© Jessie Cohen, [Smithsonian National Zoological Park](http://SmithsonianNationalZoologicalPark)

Together with conservation in its original environment, there has been a systematic program of captive

breeding and re-introductions. As of 2000, the estimated wild population is about 1000, of which 341 are wild-born offspring of re-introduced parents – a remarkable success.

As a small primate, its requirements for healthy living are now well understood and are within reach of many establishments. A husbandry protocol is available on-line on the internet (see end). For example, tamarins should be housed in family groups in cages 3m(L) x2m(W) x2.5m(H), with two next boxes providing space large enough for tamarins to sleep together or avoid each other. Numerous branches should be arranged in the cage, and should be changed every six months or so for hygiene reasons – and to enable the tamarins to plan new routes.

There are about 500 in captivity world-wide, and may easily be seen in this country – for example, in Bristol, Colchester and Howlett's (near Canterbury) zoos. Almost all zoos world-wide co-ordinate their activities to ensure that tamarins do not end up on the black market.

In what may be a unique move, almost all captive golden lion tamarins are technically owned by the Brazilian government. Thus, conservation efforts are co-ordinated by the country itself rather than imposed by outsiders. While the most important future conservation work will be to build forested corridor routes between isolated populations, zoos have played a demonstrably important role in supporting the conservation effort and in educating the public.

There are a number of reasons for this success.

- Golden Lion Tamarins are small, so that the amount of space required is not huge. For the same reason, they are not dangerous.
- They are also beautiful animals, making them star attractions for zoos.
- Although 30 years ago tamarins were considered difficult animals to keep, this is no longer the case, and their requirements are well understood.
- World-wide co-ordination of the conservation program, and the willingness to involve the local Brazilian population, has maximised the chances of success by reducing potential political problems.

Nevertheless, the tamarin story is not all good news for zoos: demand for these animals for pets and zoos was part of the reason they became threatened with extinction in the 1970s. There is also a high mortality rate among the released captive-born tamarins (~70% in the first year), which would be catastrophic were it not for the success of their offspring. Also, a faster success rate has been achieved from the planned translocations of wild tamarins to re-populate areas from which they had previously disappeared. Despite these reservations, for other species on the verge of extinction (such as the Vancouver Island marmot), captive breeding programs may be the only way that they will be preserved.

## When zoos get it wrong

### Persistent failure: elephants

Asian elephant	<i>Endangered</i>
Size	Length 6m; height 3m
Weight	M:5400kg F:2700kg
Lifespan	Wild: <60 yrs Captive: <15 yrs
Distribution	India; SE Asia; Malaysia
Habitat	Usually forested hilly areas; also grassland
Diet	Vegetation: grass, leaves, twigs
Population	~50,000

On October 20 2001, an experienced handler at the London Zoo was trampled to death – in full view of the public – by an Asian elephant. It is now recognised that the enclosure in which they were kept was not adequate for these animals and may have contributed to the incident. Recent recommendations by the UK Zoo Federation show that the elephant house – a modernist design classic from 1964 – would have failed to meet the current minimum requirements for satisfactory conditions. Within six weeks the three Asian elephants at London Zoo were moved to the Whipsnade Wild Animal Park, where they have twenty times as much area to roam in as before.

The problem with maintaining elephants in captivity is that their maintenance requirements are huge. A recent report by researchers from Oxford University (and sponsored by the RSPCA) listed a large number of welfare problems which are frequent amongst captive elephants. These include:

- A much shorter life expectancy (15 years) than in timber camps (30 years) or in the wild (60 years).
- Frequent incidence of arthritis, perhaps due to cold, damp conditions and/or inadequate flooring.
- Malnutrition and widespread intestinal problems.
- Breeding rates much lower than elsewhere. The average female has one calf per lifetime compared to six in the wild.



Neat, tidy and cramped – unsuitable conditions in a German zoo.  
Image © Sherryn Thomson, Wildlife Action Group, SA.

The report concludes that zoos do not have a worthwhile role in either conservation of elephants or in educating the public about them. They recommend that elephants should neither be imported into nor bred within Europe,

and that the existing population should be phased out. This is not unrealistic: Bristol Zoo recently decided not to replace their 42-year old Asian elephant when she died.

There are a number of reasons why elephants are difficult to house:

- They are huge. The UK Zoo Federation recommends that a group of eight should have a minimum area of 2000m<sup>2</sup>. Even this is stingy to say the least – it is less than a quarter of the area of a full-size football pitch.
- They are dangerous to humans if provoked. Despite being plant-eaters, an angry elephant is a more fearsome prospect than an angry tamarin. Two elephant keepers at other British zoos have also been killed since 2000.
- They are tropical animals – like tamarins – but because of their size it is much more difficult to adequately compensate for this in a cold British climate – hence the incidence of arthritis and intestinal problems.

While we welcome the UK Zoo Federation's guidelines for maintaining elephants, their space limitations are hardly adequate for species which, in the wild, customarily roam several kilometres every day.

### Zoochosis

'Zoochosis' is a term coined by the late Bill Travers of the Born Free Foundation to describe the stereotypical behaviour of frustrated zoo animals. The most obvious example is the repetitive pacing seen in big cats in cages that are too small. Here is a list of zoochotic behaviours exhibited by particular species, all of which are excessively and pointlessly repetitive:

Species	Behaviour
<b>Chimpanzees &amp; gorillas</b>	Rocking Self-mutilation Repetitive vomiting Smearing of excrement
<b>Monkeys</b>	Neck twisting Self-mutilation
<b>Bears</b>	Head-bobbing and swaying Swaying Circling (extreme form of pacing) Bar biting Over-grooming Self-mutilation
<b>Elephants</b>	Head-bobbing and swaying Swaying Circling (extreme form of pacing)
<b>Big cats</b>	Pacing Self-mutilation
<b>Giraffes</b>	Neck twisting Licking of enclosure walls

The list is not exhaustive: other animal species are also known to exhibit zoochotic behaviour if kept in inadequate conditions. Some of these behaviours, such as rocking and swaying, self-mutilation and repetitive vomiting, are similar to those recognised as signs of mental illness in humans.

Obviously, some of these same animals may be kept adequately, without exhibiting these behaviours, provided that they are given suitable conditions. This is, however, not trivial, and we would urge existing zoos to concentrate more on optimising the conditions for a smaller number of animals than packing more in. At Naturewatch we have reservations about the presence of large animals in zoos, since the space requirements are often so large that only a few places can provide facilities which do not immediately compromise the welfare of the animals which are being kept. While zoos can and often do provide excellent facilities for smaller animals, we fail to see what educational benefit there is in seeing a chronically bored bear chewing its paws.



### Animals which should not be kept in zoos

At present the zoo licensing system is one which is general in scope. We at Naturewatch believe that in some cases licenses should be required for individual species. Thus, the Elephant House in London Zoo would not qualify for an elephant-specific license because the area of the enclosure does not satisfy the minimum requirements of the UK Zoo Federation, but Whipsnade Zoo would. Other species for which specific licenses should be required:

**Big cats** – such as the lion, tiger and cheetah.

**Great apes** – gorillas, chimpanzees and orang utans.

**Other large animals** – bears, elephants, giraffes

We are recommending an enhanced licensing system rather than an outright ban, because we acknowledge that some zoos can provide adequate conditions.

We welcome the EU directive which allows for the partial closure of zoos failing to satisfy the requirements of the legislation for particular species. It is not clear to what extent this will be enacted: if given proper teeth, it could become functionally equivalent to requiring separate licensing for individual species, but at present it appears to be too vague to have much actual power.

### What you can do

Many zoos exist as commercial enterprises and depend on the good-will of the paying public, and on their perceived competence with the local council, to whom each is accountable. Thus, if you see examples of poor animal welfare maintenance, you can bring pressure to bear on zoos that fail to maintain adequate standards.

- You can write to your MP expressing your concern about inadequate facilities.

- Writing to the local paper will have an impact because the readership is likely to be similar to the catchment area for the zoo.

When you do so, be sure to identify clearly your reasons for concern – for example, citing evidence of zoochotic behaviour. Refer in particular to the 1999 European Union directive on “Keeping Wild Animals in Zoos”, in which zoos are required to be actively involved in education and conservation – zoochotic behaviour is contrary to either.

### Zoos of local wildlife

In the midst of the Tucson Mountains in south-western Arizona lies a zoo which has taken a different approach to its task. It's the Arizona-Sonora Desert Museum – and it only houses those species which naturally inhabit this particular desert.

A zoo of local wildlife has three immediate benefits.

- Educationally it can teach people about the diversity of life in the locality. Few of us realise just how many species are native to one's own area.
- Vulnerable species can thus be preserved in an environment very similar to those that would be experienced naturally.
- Good animal welfare is much more easily attainable for local species than for ones from vastly different climates. It is no abnormal hardship to require a hare to shiver through an English winter!

The huge commercial success of the Arizona-Sonora Desert Museum shows that this approach to developing a zoo is one which can be economically viable. It is one which could be emulated in Britain. It would be particularly advantageous in some of the EU accession countries which have very diverse animal life, such as the Tatra Mountains of Slovakia and Poland, and the freshwater lake habitats of Estonia, and which would otherwise struggle to adequately maintain existing zoos.

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### Links and references

*There is much about the Golden Lion Tamarin on the web. Click here for the [Smithsonian Institute](#) pages.*

*For the Federation of Zoos, go to <http://www.zoofederation.org.uk/>*

*For the RSPCA report about elephants, click [here](#).*

*For more information on zoochosis, go to <http://www.bornfree.org.uk/zoocheck>*

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*This fact sheet, which was written and produced by the staff of Naturewatch, has been provided as a service to visitors of our web-site. If you found the information helpful, please consider sending a donation to Naturewatch. Our address is:*

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