



Misconceptions about zoos

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Zoos: good or bad? The arguments have raged over recent years, but how many people actually understand what zoos are and what they claim to offer? An author with many years' experience of zoos considers the arguments for and against their continued existence.

I have worked in different zoos for the past 24 years. During that time it has been disconcerting and disturbing to find how widespread is the sneaking feeling among people in Britain that zoos are not quite politically correct. Inside the zoo world, we know what an important job we do, how we contribute to the international conservation cause, how we help to stimulate and enlighten many thousands of people, and how we provide the best of homes for our wonderful animals.

I believe that one reason why we fail to draw more people along with us is that there are some widespread misconceptions about zoos, both in principle and in practice. The purpose of this article is to try to refute and clear up those misconceptions - to clean the sheet so that people can look at the modern zoo world dispassionately rather than judgmentally.

In order to do so, I shall first summarise briefly how the modern zoo world actually functions, and then tackle and, I believe, dispose of the range of the commonest objections raised against zoos.

The function of zoos

The broad context in which zoos operate is of course a scene of alarmingly rapid loss of biodiversity worldwide, as a result of the existence and activities and aspirations of over six billion human beings. There are five times as many of us as there were when my grandfather was born. Projections

vary, but most envisage the world's human population stabilising at between 10 and 15 billion in 200 years (Western and Pearl, 1989). Wildlife is disappearing through habitat loss and fragmentation, deliberate hunting, competition from alien introduced species (both domestic and exotic), as well as pollution, including human-induced climate change. Extinctions are occurring at a rate vastly faster than at any time in Earth's recent history. The global outlook for very many species is extremely bleak.

Zoos (zoological gardens) are places where non-domesticated animals are kept and where human visitors may come and look at them. In Britain, such establishments (which include also safari parks, bird parks, butterfly houses and aquaria) are required to be inspected and licensed under the *Zoo Licensing Act* of 1981, and there are believed to be about 400 licensed premises in total. Of these, 43 have more than 10 species of non-domesticated mammals (Olney, 1998), and are what most people would usually understand by the term 'zoo'.

Most of the larger zoos in Britain are charities, run by zoological societies with members and trustees. A few are private, and a very few are operated by the local authority. Almost all are dependent for their survival on the money

*Title image. A group of Arabian oryx, successfully reintroduced into the wild in Oman after a collaborative zoo rescue programme.
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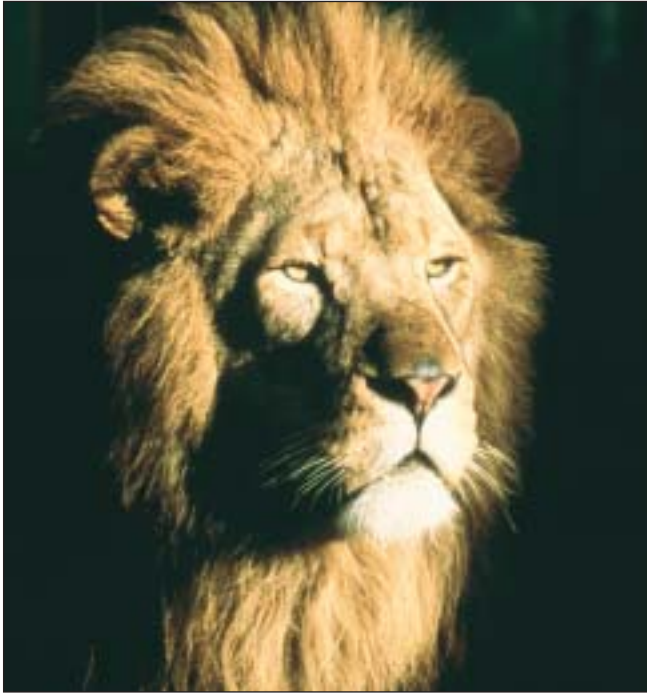


Figure 1. A male Asiatic lion. About 300 remain in the wild in the Gir Forest in India. There is a thriving managed population in the world's zoos in an international collaborative breeding programme. © Bristol Zoo Gardens.

they earn from people visiting them and paying for the privilege. Few receive any public funding (although a handful win grants for field conservation or research work).

The mission statements of most zoos in Britain run along the lines of contributing to conservation, education and research, while providing a good day out for visitors. The conservation work includes: maintaining viable captive stocks of animals as a safety net against extinction in the wild, with the possibility of reintroduction where appropriate; raising public awareness of environmental problems; and contributing significantly to field conservation projects, in personnel or finance, as required under the Secretary of State's *Standards of Modern Zoo Practice* (DETR, 1999). The education role is carried out both formally to organised education groups, and informally via the interpretation and other information conveyed to zoo visitors. All zoos are also required by law to keep and make available records on the animals they keep, and thereby contribute to a growing communal research database; many conduct or facilitate specific non-invasive research studies.

Zoos operate in the leisure world where there are a great many other visitor attractions competing for the time and support of visitors. Nonetheless, zoos in Britain welcome around 15 million visitors each year (Olney, 1998). Most of the charity zoos benefit from the assistance of volunteers who support the paid zoo staff.

The great majority of the larger and more organised zoos in Britain make up the British and Irish Association of Zoos & Aquariums (BIAZA), renamed in 2004 from the Federation of Zoological Gardens of Great Britain and Ireland, which has about 65 members. In other countries there are similar national federations, and in Europe as a whole there is the regional European Association of Zoos and Aquaria (EAZA). The parent body, the World Association of Zoos and Aquariums (WAZA) points the direction in which the over 1,000 zoos in organised networks worldwide are and should be going, as they receive about 600 million visitors a year. Their potential impact is huge.

There is an extraordinary degree of collaboration among those independent and widely scattered zoos, unparalleled in comparison with other scattered autonomous institutions such as museums or galleries. A great many participate in the International Species Inventory System (ISIS), sending life-history data on their stock for the benefit of all. Co-operative breeding programmes have been established for all the more important species, managed usually on a regional basis but sometimes internationally, by a species co-ordinator and/or studbook keeper, ensuring that the best use is made of the often limited genetic material. Animals are selected for pairing according to their ancestry, and sent to the zoo that the species co-ordinator designates. In Britain at least, money very rarely changes hands in these transactions: the animals are considered too important to be assigned a monetary value, and are in a sense held in trust for the sake of future generations.

The trend in most of the older zoos has for half a century been towards keeping fewer species, in larger social groups where appropriate, concentrating on those that are threatened, and keeping them generally in larger and more naturalistic environments. Zoos nowadays consider themselves to be conservation centres, no longer menageries; the World Zoo Conservation Strategy, produced in 1993, summarised the trends, ethos and rationale of the international zoo network (IUDZG and CBSG, 1993). WAZA are at present updating it as the World Zoo and Aquarium Conservation Strategy, to be published in 2005, with still greater emphasis on *in-situ* conservation.

There have been huge advances in knowledge, especially in conservation biology, animal husbandry, nutrition, veterinary medicine, and small population management. The results of zoo and aquarium research and expertise have been published in many different forms: in books, journals, symposium proceedings and reports. Examples are the *International Zoo Yearbook*, *Zoo Biology*, *Conservation Biology*, *Animal Conservation*, *Conservation in Practice*, and the *Proceedings of the World Conferences on Breeding Endangered Species*. In addition, the regional associations produce welfare and husbandry guidelines, as do the professional keeper bodies such as the Association of British Wild Animal Keepers (ABWAK) in their journal *Ratel*. Zoo veterinary medicine is a growing field, as is zoo design, and there are publications and websites associated with each. (Some useful websites are listed later).

Zoos and zoo staff do not work on their own but in collaboration with many other partner organisations (such as wildlife trusts, various NGOs and universities) and individuals in the international conservation movement. They provide major input into the work of the Specialist Groups of the Species Survival Commission of IUCN (the International Union for the Conservation of Nature and Natural Resources), and they belong to and support a wide range of local and regional conservation bodies.

Objections to zoos

Over the years I have encountered a great many anti-zoo arguments, expressed with varying degrees of lucidity. In what follows I have tried to separate and clarify the arguments.

The main objections to zoos are of three types. The first set (numbers 1-8 below) consist of arguments that zoos in general ought not to exist, as being fundamentally wrong. The zoo world often counters these with justifications, particularly in relation to the conservation and education work that zoos carry out; the second set of anti-zoo arguments (numbers 9-16) attack these justifications. The third set (17-20) are essentially arguments about what happens in practice in zoos.

1. "Zoos are a drain on wild populations and help to endanger them"

Not true. The great majority of animals being acquired by zoos in the West nowadays have in fact been born in other zoos. Zoos prefer it that way, because such animals are adapted to zoo conditions, and come with known histories. There are a few long-lived individual animals in most zoos that were taken from the wild many years ago (particularly animals such as elephants, tortoises and parrots), but the vast majority of zoo animals have lived their entire lives in zoos.

The Convention on International Trade in Endangered Species ('the CITES Convention') regulates the transport of animals and animal products (live or dead) across international borders for any species that is considered threatened in the wild. A licence, for both export and import, is required for any such move. Licences are not granted for wild-caught animals of severely threatened species unless there are highly exceptional circumstances, such as the need for new blood in organised collaborative breeding programmes, or occasionally for rescue or welfare reasons. The issuing of CITES licences in UK is an open procedure managed by DEFRA (the Department for Environment, Food and Rural Affairs), and is scrutinised by knowledgeable personnel and organisations.

A distinction should be made between the zoo world and the private pet trade, where the scale of animal movements is far larger, where the picture is not so clear, and where the smaller animals (especially reptiles, amphibians, fish and invertebrates) generally involved are less closely monitored.

2. "Zoos distract attention from efforts to conserve animals in the wild"

There is not much evidence for this assertion. The implication is that the media would be carrying more field-conservation stories if they were not conveying zoo animal stories. Would editors agree? What is beyond doubt, however, is that within zoos and in zoo publications there is a great deal said and written about conservation efforts in the wild, often supported by the zoos themselves. Modern zoos see themselves, as indicated in the World Zoo Conservation Strategy, as strong supporters of the World Conservation Strategy (1980) of IUCN-The World Conservation Union, which outlines an important role for zoos both for practical action and for spreading public awareness.

The argument is sometimes made that people may make less effort to conserve animals in their wild habitats "because they can always survive in zoos". This is analogous to any argument about safety precautions, suggesting that people will take less care if they have a safety net, or a seat belt, or a hard hat, or insurance; a case can be made, but in general society tends to opt for precautions rather than for upping the stakes. Risking a species' extinction is not self-evidently a risk worth taking.

3. "The money spent on zoos should be spent on conservation in the wild instead"

The argument overlooks the point that the money spent on zoos in Britain is money earned by or given to zoos for the work they do; it is not money given from above that might otherwise be put to any other purpose. Were it not for the zoo, the money would not be forthcoming. In other countries, where zoos receive financial support from local or national government, the argument could carry some force: that the subsidy to the zoo should instead be directed towards work in the wild. Not everyone would agree in principle – money spent on inspiring and enthusing their citizens towards conservation objectives, using impressive living animals, is probably money very well spent. There will always be



Figure 2. A golden lion tamarin, one of many results of a collaborative zoo breeding programme, involving husbandry research, an international studbook, careful population management, habitat protection and management, reintroduction, and local awareness initiatives. © Zoological Society of London.

disagreement over what projects or undertakings should be supported – everyone's spending priorities are different (and of course other people's are always apparently less rational than one's own).

4. "Rather than shutting them up, species should be allowed to die out in dignity"

What dignity? When you look at the carcass of a rhino, shot with poisoned arrows or automatic rifle bullets, its horn hacked off, its decaying innards being consumed by vultures, it is very difficult to detect much dignity there. It is a fact that through human activities, many individuals of many species are dying, often very uncomfortably and in an undignified way. Most of the imminent extinctions we see are a result of human activity; it is not that mankind is interfering with the 'natural fading away' of a species. We do not apply the 'let them die out in dignity' argument in relation to starving human beings in famine-stricken areas. Nor, when you look objectively at healthy groups of Hawaiian geese, or Arabian oryx, or Pere David's deer – all species that now exist almost entirely thanks to zoos' captive breeding work – can one easily feel that it would be better had those species been allowed to 'die out in dignity'.

5. "It is wrong to restrict animals' freedom"

In an idyllic world, perhaps every animal is 'free as a bird'. In the real world, even wild animals are considerably constrained in where they go and what they do, although obviously not to the same physical extent as in captivity. Aggressive territorial neighbours, for example, can punish wandering quite severely, and so can predators. Like zoo animals, our domestic animals in farms or in the home are confined to where human beings wish them to go and, in general, human society does not consider that domesticating and keeping farm and pet animals is wrong. The argument about freedom can come consistently only from a Vegan, for consuming animals (as most of us do) and culling them humanely, necessarily involves keeping them under our control. To argue that totally different considerations apply to domestic animals versus undomesticated (i.e. zoo) animals requires ignorance of how quickly and fully domestic animals can revert to a successful wild existence when required to do so – dogs, cats and goats, domesticated for many generations, when put onto islands in previous centuries have thrived as truly wild animals, often to the detriment of the



Figure 3. Handrearing a baby chimpanzee. The range of knowledge and expertise among zoo staff is extending fast; their dedication is highly impressive. © Zoological Society of London.

native fauna and flora. Zoo animals and domestic animals are not fundamentally different.

6. "Confining wild animals makes them suffer"

Of course it could, if they were kept in unsuitable conditions. In relation to zoo animals, it should be remembered that almost all have been born and lived in a zoo environment, which it is more than tempting to assume they consider to be their home. Certainly most spend remarkably little time trying to escape, and when a zoo animal does occasionally get out of its enclosure, its first concern is usually to get back in again. Zoo animals are provided with good quality food in abundance, with appropriate environmental conditions, with freedom from predators, and with veterinary care, so all those natural causes of suffering do not apply to them. On the other hand, as a result of being relieved of the need to spend much time fulfilling those needs, zoo animals have much more spare time, in which potentially they could be bored.

We do not know how much different species are capable of experiencing, or suffering from, boredom. It seems reasonable to assume that species with more complicated brains are more capable of it than others – apes more than fishes, bears more than snakes – but there is not good evidence. Stereotypical behaviour may develop as a result of a social or physical environment that provides little stimulation to the animal within it, and may be manifested particularly in stressful situations. Some species, such as bears, are more susceptible to stereotypical behaviour than others, and the behaviour patterns can be remarkably enduring. But it is worth emphasising that the number of new cases of stereotyping developing in animals in organised British zoos nowadays is small.

We should beware of assuming that animals in the wild are never bored, or that they lead an idyllic existence. Living

probably involves a degree of acute discomfort or suffering at some stage in life or death for the great majority of sentient creatures. The mouse your cat catches, the gibbon with a broken limb, the elderly antelope with decaying teeth, the salmon failing to leap up a waterfall, or the lion starving for lack of catchable prey are all presumably experiencing suffering, in ways which are unlikely in a zoo. That fact of course does not justify tolerating suffering in captivity, but it helps to put it into context.

7. "It is degrading to animals to be gawped at"

'Gawping' is of course what other people do – thus I observe, you look, he stares, they gawp. Few people would consider that the birds you watch on your bird table are thereby degraded. We all look at one another, and do not feel degraded as a result. Of course we also value our privacy when we want it, and a good zoo enclosure will afford animals privacy when needed, from both their companions and from human onlookers. It is noteworthy that zoo animals do not in general tend to spend their time far away from or out of sight of zoo visitors; indeed they will often be in conspicuous places where they can see what is going on around them.

8. "Keeping animals for entertainment is wrong"

It is difficult to argue consistently that it is acceptable to keep an animal in order to eat it but not in order to enjoy its being alive. We human beings do not have to eat meat, yet to most of us it is a pleasurable and acceptable thing to do, and a great many other species do the same. Society also condones the keeping of pets, whose purpose is to provide companionship, pleasure or interest. The important issue with Granny's budgie is not that it is kept for pleasure rather than for food, but that it should be kept in such a way that it does not suffer through its needs not being met; the same should apply to farm and zoo animals. Zoos would argue that in fact they do not keep animals primarily for entertainment, but mainly for conservation and education reasons. Nonetheless, it is undeniable that visitors come to zoos of their own free will for recreation and entertainment, and zoo managers are aware of the need to attract them.

9. "We should be conserving habitats, not single species as zoos do"

They are not alternatives, and in fact we should be trying to do both, as modern zoos do. Clearly, to conserve patches of tropical rainforest habitat is thereby to conserve a wealth of plant and animal species in that ecosystem, and is the most sensible way to conserve those species. But that does not hold for all species. For example, the catastrophic decline in black rhinoceros numbers – from an estimated 100,000 a century ago to fewer than 3,000 today – has little to do with habitat loss but all to do with illegal killing for the horns. It was not habitat destruction but motorised hunting that drove the Arabian oryx to extinction in the wild in the 1950s to 1970s, since when it has been partly rescued through a collaborative zoo breeding programme and successfully reintroduced. In addition, there may well be instances where, through natural disaster or warfare, there is no way of conserving the habitat. There is clearly a role for single species conservation in providing a safety net against extinction in the wild where those species belong.

10. "It is more cost effective to conserve animals in the wild than in zoos"

The answer to this is that of course it depends what you include in the costs, but certainly in many cases conservation in the wild would be less expensive. To employ expensive



Figures 4a and 4b (below). Reminders that life in the wild is often far from comfortable. (a) (above) A juvenile lion starves gradually because prey are scarce and hard to catch. © Brian Bertram.

make more sense to translocate wild animals from relatively nearby, rather than zoo-born ones from distant zoos. Nonetheless, it has been amply demonstrated that reintroduction can be done successfully, and there is no doubt that it will become an increasingly important option as global climate change modifies increasingly fragmented habitats.

13. "Zoos are not really educational because they give the wrong messages"

It is argued that zoos misleadingly display animals out of their natural context, and by imprisoning them depict them as being subordinate to mankind. Clearly no zoo enclosure can fully convey the animal's natural habitat, but they can and do certainly give an indication; they usually convey to visitors at least some information about that animal, where it lives and the conservation issues associated with it. The

accompanying interpretation expands on that and raises awareness more broadly. Modern zoo enclosure design is increasingly removing the 'imprisonment' feeling and instead immersing visitors in the animal's environment.

Any literate interested person leaves a zoo knowing a bit more about animals and about conservation than when he or she came in. Education - broadening the mind - is helped by actual experience of the massiveness of an elephant, or the height of a giraffe, or the hoot of a gibbon. It is possible, indeed probable, that more dry zoological facts could be acquired if people stayed at home reading a good encyclopaedia instead of visiting a zoo; but if we are realistic, that is not the likely alternative pastime for most people. The teachers of the hundreds of thousands of children who are taken on organised educational excursions to British zoos know what they are doing.

14. "Fine modern films and television programmes make zoos unnecessary"

They are not alternatives; both are important and they are complementary to one another. There are of course a vast number of things that films can do better, such as showing how a cheetah outruns its prey, how whales behave, what lives on the ocean floor, how kangaroos are born, how Serengeti wildebeest perish, and so on. What they cannot

keepers in the West to feed rhinos, after providing the buildings to house the animals, costs more than employing game guards in Kenya to protect rhinos where they do not need housing and where they can find their own food. But it has been more effective as black rhinos have been almost wiped out in Kenya, in some instances involving the collusion of those game guards. Thus conserving in the wild may be cheaper but less safe. Nevertheless the two are not alternatives. And as in point 3, the money is not necessarily 'free' money but has mostly been earned by the zoos involved.

11. "Zoos can only save a tiny proportion of all the species that are under threat"

Undoubtedly true. And similarly, conservation programmes in the wild are going to be able to conserve only a small proportion of wild habitats that are threatened. But that is no reason for not saving some. You rescue as many people as you can from a sinking ship, not ignore them while bewailing the fact that you cannot rescue them all. In fact, the organised world zoo community, working collaboratively as they do but even more so, would be able to conserve viable captive populations of a significant proportion of the world's threatened species of larger mammals and birds. In general, zoos should and do concentrate on the larger species, rather than on the millions of small invertebrates.

12. "Reintroduction back into the wild doesn't work"

That is simply not the case, and there are numerous and well documented cases of successful reintroductions. The cases of the Arabian oryx, golden lion tamarin and Hawaiian goose are some of the earlier and better known instances involving zoo animals, but there have been hundreds of others worldwide (IUDZG and CBSG, 1993). It may be that, in over-emphasising the potential importance of reintroduction, the impression may have been conveyed that reintroduction is a panacea, with large numbers of zoo animals being destined to be put back into the wild: this is certainly not the case.

It is clear that reintroduction needs to be done with care, preparation, veterinary screening, and continuing monitoring. It is obvious that it only makes sense to do it when the factors that resulted in the species' elimination from the habitat no longer apply - the habitat must have been restored, or poaching prevented, or the introduced alien species removed. And if that is the situation, it will often



Figure 4b. A lame wildebeest caught by a lioness takes a long time to be brought down and killed. © Brian Bertram.



Figure 5. A rhino carcass, poached in a national park in Kenya in the 1970s for its horn. Is this what 'dying out in dignity' means? © Brian Bertram.

do is make baby animals and so keep species going – part of the practical conservation work that zoos undertake. Nor have people yet managed to set up financially viable wildlife cinemas able to attract enough people to fund their running costs plus film making and a significant amount of conservation work. Let us hope it will be possible. But even then, a lion on celluloid or videotape is not a complete substitute for the magnificence and unpredictability of the living animal.

15. "People can always go and look at animals in the wild"

Some can, lucky people. Most cannot, neither in the affluent West nor in most of the developing world - very few Indians have seen a wild elephant, and even fewer Brazilians a wild golden lion tamarin. We can hope that ecotourism will continue to thrive. But apart from major considerations of affordability, if the 600 million people worldwide who will visit zoos this year were all to go to exotic wildlife environments instead, the pressure on those habitats would be severe and the contribution to climate change from their aircraft considerable. And we would still have species going extinct without the safety net of captive breeding. Again, having zoos and watching animals in the wild are not alternatives.

16. "No useful research is possible in the unnatural conditions of zoos"

Quite untrue. Obviously there are some study topics where the artificial situation of captivity would make results inapplicable to life in the wild; nonetheless, even in these some useful things can be learned. Clearly sample sizes in zoos are generally rather small, but studies can be made in several zoos, and useful comparisons drawn. Increasingly wildlife managers in the wild must actively manage the small populations they are conserving, and many of the techniques (such as immobilisation, identifying, veterinary, pregnancy testing, etc) have been developed using zoo animals, where smaller populations are being managed more intensively. In addition, the functioning of zoos themselves is improving greatly as a result of the research they undertake and the sharing of the data obtained, in such

fields as veterinary care, nutrition, assisted reproduction, and animal husbandry. Conservation science derives huge benefits from zoo-based work (Olney, 1988).

17. "Some zoos are clearly bad"

Not in Britain they are not, although some are clearly less good than others, and half of them must be below average. (What do we mean anyway? Are there really 'bad' hospitals in Britain?) Like any other institution, any zoo could be improved further, and even the best zoo may have aspects that need to be brought up to scratch. You will not find in Britain today zoos where it is reasonable to say that the animals are suffering. The *Zoo Licensing Act* (1981) introduced in Britain a system of regulation and inspections that forced poor zoos to improve or close, and provides continuing pressure on all zoos for further improvement. The perception of zoo staff and of the general public as to what is acceptable is not static but evolving, most markedly in terms of the space available in relation to the size of the animal. At the same time more objective measurements of welfare are becoming available.

Overseas there are certainly zoos that do not meet the standards that we would consider the minimum acceptable, and where animals do appear to be suffering; there are also of course many magnificent zoos. The European Union Directive on Zoos, from 1999, is bringing in controls comparable to British ones across the whole of Europe, while around the world regional zoo associations are working to raise standards further. There will no doubt be pressure and improvement in many other countries, where it must be recognised that attitudes to animals, and priorities, are not the same as our own.

18. "Zoo staff don't care about their animals' welfare"

Anyone who knows zoo keepers knows that this is completely untrue. Several television documentaries in recent years have brought out how committed and caring zoo keepers are towards the animals for which they are responsible. The zoo world attracts able and dedicated people, who carry out a complex job for vocation-level wages.

19. "Zoos do bad things like culling animals"

Occasionally that happens, but it is rare. Nobody wants to do it. Curators go to enormous lengths in trying to find



Figures 6a. Worldwide, half a billion people visit zoos each year to experience a degree of contact with superb living animals. (a) a captive-bred orang utan with her baby © Zoological Society of London

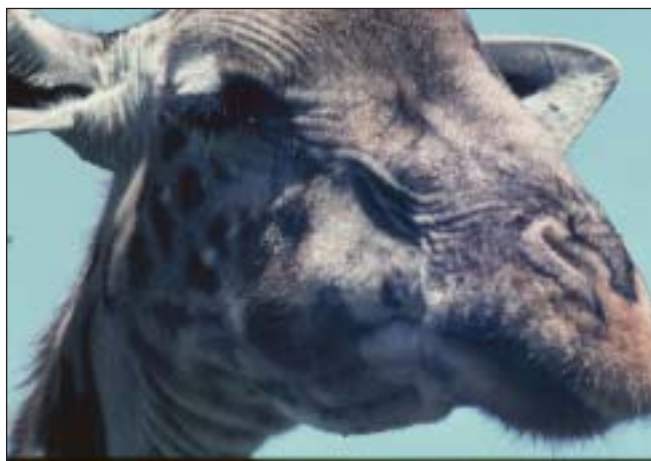


Figure 6b. A close up view of a giraffe. © Brian Bertram.

homes for any surplus animals, and almost always manage this. Zoo animals are not permitted to produce large numbers of offspring where it is known that homes will be difficult to find. As a result, most of the large cats in organised zoos nowadays have contraceptive implants fitted when they have made their reproductive contribution to the captive population; otherwise zoos would be severely overstocked with lion and tigers.

A decision to cull an animal as surplus is taken only after great deliberation, and, nowadays, after going through the ethical review process in the Secretary of State's *Standards of Modern Zoo Practice* (DETR, 1999).

The occasional painless culling of a zoo animal needs to be seen in the context of how society in general treats animals. The RSPCA on our behalf euthanases many thousands of unwanted (largely healthy) pets each year, and so do veterinary practices; we do not consider them wrong to do so, and we know that efforts are made to avoid wasting animal life unnecessarily. Livestock farming involves the culling of millions of healthy animals; many of those are destined to be eaten by human beings, but why should that provide a justification which does not apply to zoo animals?

Again, to put into perspective the small amount of culling necessary in zoos, compare the situation for the roughly 1,000 lions in zoos, of whom a minuscule proportion have to be culled, with what happens in the wild lion population (estimated at around 30,000). Those lions probably kill (and do not eat) of the order of 2,000 healthy lions each year, in the course of their natural territorial conflict and infanticide; those lions also kill and consume over a million prey animals (my estimates). Of course we do not have as direct a responsibility for them as we do for lions in zoos, but nor should we close our eyes to what happens in the even more real world outside.

20. "Some species should never be kept in zoos"

Clearly some species are much more difficult than others to accommodate to an acceptable standard. For example, it is difficult to conceive of a zoo being able in practice to provide an adequate captive environment for blue whales. Polar bears, with their tendency in barren enclosures to develop stereotyped behaviour, are sometimes cited as a species unsuitable for captivity, and elephants are two more. Some people would add also the great apes, on the basis of their mental abilities and their close relatedness to human beings.

There is no doubt that in all these cases there is a strong imperative to provide an environment (social as well as physical) that can meet adequately the occupants' mental and physical needs. Determining precisely what those needs are,

and how they differ from wishes, is an inexact area of study and one where our conclusions will change with time. But there is no reason in principle why it is not possible to build a polar bear (or elephant, or ape) enclosure of such a scale and design that almost everyone would consider it adequate.

If one takes an absolutist approach and believes for example that no elephants should be kept in captivity whatever, it throws up the testing point of what to do about those already there. The only humane alternative is euthanasia. Few people are in fact prepared to urge the putting down of a zoo elephant; that demands facing up to the difficult question of whether an animal is really better off dead than living in a captive environment. We know that even in the most appalling conditions, human beings for themselves almost always choose the latter. For what kinds of animal lives do we really consider that it would be better for them never to have been born?

Conclusion

Why bother to put up all those straw men, only to knock them down? Because, sadly, and often unreasonably, many people still seem to believe some of them, and that overshadows their perceptions of zoos.

Because the bad things that are said about a person are wrong does not in itself mean that the person is good; but these things need to be cleared out of the way in order to make a proper assessment. Organised modern zoos, the ones that make the news in Britain and that people know about, can and do stand on their own feet, and they contribute significantly to the cause of ensuring that our grandchildren's planet will be less impoverished than otherwise. Living animals in zoos can be powerfully effective ambassadors for the rest of their species. Zoos enliven many people's lives. Not everyone likes or appreciates them; to which an appropriate response might be that as with a museum or art gallery, if you find nothing of interest there, do not go, but recognise that the loss is yours, and that the choice is one of aesthetics not of morality.

In some respects the zoo world is like the hospital world. In an ideal universe, hospitals would not exist because there would be no need for them, in the absence of sickness or accidents. But in the real world we live in, hospitals carry out an important function. Some do less well than others, and some in places may be very poor. The solution is to improve the poor ones, rather than to condemn all hospitals.

In an ideal world too, zoos would be unnecessary: there would be no conservation problems, and people could harmlessly go anywhere to admire wildlife. But in the real world, zoos carry out an important function, while giving pleasure, inspiration and enlightenment to a great many people. Of course they can always do better, as can any organisation, and should be supported in their efforts to do so. They are a powerful force for conservation and a major force for good, in a world that elsewhere is regrettably becoming much less good for wildlife.

Websites

www.zsl.org

Zoological Society of London. Runs London Zoo; publishes annual International Zoo Yearbook; hosts Institute of Zoology research programme; runs field conservation programme.

www.zoofederation.org.uk

Now the British and Irish Association of Zoos & Aquariums.

www.defra.gov.uk/wildlife-countryside/qwd/zoosforum

The Zoos Forum is an independent advisory body on zoo matters, facilitated by the Department for Environment, Food and Rural Affairs.

www.waza.org

The World Association of Zoos and Aquariums; the umbrella body of the international zoo community.

www.eaza.net

The European Association of Zoos and Aquaria.

www.cbsq.org

The Conservation Breeding Specialist Group of IUCN, the international conservation union.

www.zoolex.org

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