

Zoos as a force for conservation: a simple ambition – but how?

Zoos in Britain are subject to many forces and pressures. There are certainly alternative attractions for the public's increasing leisure time and spending power, and tolerance of rows of animals in concrete pens has markedly diminished. As a result, welfare standards have improved in line with a greater understanding of captive animal behaviour and welfare needs. The stated aim is now to achieve an animal collection that plays a role in conservation. Only the most hardcore commercial exploiters of animals would not claim to be contributing to conservation.

The transformation of zoos receives strong encouragement from the new Conservation Strategy of the World Association of Zoos and Aquariums (WAZA). Replacing a pioneering strategy from 1993, the 2004 strategy indicates the great distance that the zoo world has covered in its thinking over 10 years. The new strategy defines conservation as '... the securing of long-term populations of species in natural ecosystems and habitats wherever possible'. The emphasis is on the wild, not in cages. Furthermore, the strategy lists attributes that it characterizes as an ideal for zoos in the future, and top of the list is 'Increasingly commit to conservation in the wild as the primary goal and focus for any zoological institution.'

There is a further significant shift in conservation that favours zoos and their capabilities: areas that are true wilderness, in the sense that if left alone their plant and animal inhabitants will remain secure, are declining. As a corollary to this, we see conservation interventions for species increasing in a way that would have been inconceivable 30 years ago. Intensive management can save species at very low numbers, and it is a sad fact that this activity will only increase. As the antiquated and simplistic hard boundary between *in situ* and *ex situ* dissolves, many zoo techniques and technologies can be applied to the widening zone between work in the wild and out of the wild.

A second trend, as Rees (2005) identifies and with which the zoo community may tentatively agree, is that zoo populations are not often the source of animals for reintroduction. There have been some great successes in the restoration of zoo-bred animals, but the reality is that reintroduction of captive-bred individuals is not a common conservation action and, where it is done, released animals have usually been bred at special facilities in the

country of release. This is not an argument against keeping animals in well-managed populations in second countries. Benefits of doing this under suitable international arrangements are many and ever more pressing as the biodiversity crisis accelerates and new, and greater, environmental threats pervade.

So, how can zoos respond? I start from the point that the number of visitors to zoos is staggering; each visitor is an opportunity for the demonstration of the wonders of nature, the products of natural selection, and messages about conservation. No office-based organization can showcase conservation so well. But how can this be transmitted into effective conservation?

Zoos are concentrations of skills that are increasingly needed in the field: how to handle and care for animals, passion and intuitive understanding of animals, rigour in practice and standards, and the adherence to scheduling that zoo work requires. This sort of management in support of species recovery is now extremely sophisticated. Zoos should be the prime source of relevant skills and short-term help. At the Durrell Wildlife Conservation Trust, we regard and develop our staff as keeper-conservationists.

Not surprisingly, many zoos support rescue centres for animals in their countries of origin, supplying keeper staff to develop these institutions and provide training. Sceptics may say that a collection of rescued chimpanzees has little bearing on chimpanzee conservation in the wild, but there is a duty of care, and outside zoos can apply their experience to improve the welfare of these animals. Until capture from the wild is halted, the contribution of skills to animal care is valuable in showing the concern in other countries, while improving awareness in the country of origin.

These possibilities for zoos and their staff mesh with the realization that western zoos will rarely contribute animals in large numbers for release into the wild. Coincidentally, it is becoming harder to move animals around the world, with veterinary regulations and security concerns combining to make animal movements ever more expensive and difficult. Furthermore, keeping and breeding animals in their own country is consistent with the Convention on Biological Diversity.

What is the role of research in zoos? As Rees (2005) argues, much research done in zoos either relates to welfare in captivity or is academic and without bearing on conservation in the wild. Better collaboration with universities, recommended at a recent symposium

(Anon., 2004), is a means to bring more research specialists into zoos. Similarly, Heribert Hofer, director of the Leibniz-Institute of Zoo and Wildlife Research in Berlin, made the case at the 2004 WAZA conference for specialist research institutions assisting zoos and boosting their reputations for first class research opportunities. Nevertheless, there must be a solid framework of relevance and priority to ensure zoo-based research does realistically help conservation.

Research sits on a pedestal, with its own dedicated specialists. But how much does conservation benefit from research as opposed to rigorous science-based management? Is the latter what zoos can contribute? For example, after the volcano on Montserrat erupted in 1995, Durrell Wildlife Conservation Trust imported a few of the island's massive frogs, the mountain chicken *Leptodactylus fallax*. It was at risk from overhunting and volcanic ash cover, yet its breeding biology was unknown. In Jersey the frogs bred in a simulated forest environment, and a new breeding system was described and published (Gibson & Buley, 2004). We substituted the natural conditions, in which the information could not be collected, for artificial controlled conditions in which the critical observations were made. We have not returned frogs to the wild, but we have sent back knowledge, experience of keeping the species, and amphibian specialist staff to contribute to island-wide studies of biodiversity and conservation of the frog. This was a strong and practical link between in-the-wild conservation and out-of-country support, and this approach may be especially valuable for small animals such as amphibians and reptiles.

There are many activities through which zoos can and do support conservation, with opportunities to suit zoos of every size and pocket. Collaborative efforts involving consortia of zoos are developing, with the advantage of greater levels of combined funding and greater dependability from year to year. With respect to the common assumption that the best zoo conservation is overseas, there are many examples of zoos making a critical difference in their own backyards. Examples include Chester Zoo's release of dormice in England, and the Zoological Society of London breeding and releasing the wart-biter cricket in Sussex. Durrell Wildlife Conservation Trust is surveying the common toad in Jersey, with massive public response, to assess its status and conservation needs.

The issue of proportionality for conservation by any zoo is real (Wehnelt & Wilkinson, 2005), but suitable opportunities do exist. Perhaps the bigger issue is how to get zoos to embrace a conservation imperative. The EU Directive may be vague in its requirements for conservation by zoos (Rees, 2005) but it has to cover a vast range

of establishments, especially in the newly enlarged Community. It is also unquantified: how much or how little education counts as an adequate contribution to conservation?

It seems axiomatic that the bigger the unit covered by a set of rules or a strategy, the more anodyne those rules or strategy will be. The WAZA Conservation Strategy will face the same problem, but its development did involve 230 people in 40 countries. Can conservation involvement be neatly specified and packaged by legislation and regulation or should the desire to be conservation-focused come from each zoo: this is the internal drive or external directive issue (Thomas, 2005). The answer may be both, but perhaps the missing link of appropriate scale is the regional zoo association. Most of the world's zoos can now belong to an association. WAZA has 22 national or regional associations as members, and all are committed to the Conservation Strategy. Zoo representatives within their association will mostly know each other, allowing peer pressure to back up global and regional commitments to conservation. All zoos can contribute to conservation; the challenge is to combine all of their efforts for massive impacts.

There is little excuse nowadays for zoos to avoid a conservation role: knowledge and opportunities abound, and the public increasingly expects it. But the zoo world could think more creatively and not merely in overseas conservation, or research or education, to answer the fundamental question 'How most directly can we help the conservation of wild populations?' The answer to this may include the realization that zoos' greatest resource is as much their staff as the animals they hold.

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