The New World Zoo and Aquarium Conservation Strategy WZACS Serialised !

Editors' Note : We are doing our best to see that everyone interested gets a copy of the new World Zoo and Aquarium Conservation Strategy but we will not be able to send it to everyone due to cost of postage. We have authority to serialise it so that you will, if you are a regular reader will have access to it over time, or, decide if you are willing to pay postage for ordering it. See how to order at the end of this chapter. The WZACS should be of interest and concern to everyone because it is very big on integrated conservation and partnerships. That means that every conservation actioner or enthusiast and every wild animal or education enthusiast should have some interest in see what is suggested for partners and public.

Remember that it is the WORLD Zoo and Aquarium Conservation Strategy and some things may not relate 100% to the zoos in your city or state. However, a great effort was made by WAZA to include people of all professions from all regions. There should be something for everyone to do to make the zoos in their locality better and to use the zoo to help them in the vocation or avocation. Happy reading. Editors.

Chapter 1 -- Integrating Conservation

Summary

This chapter explains why and how all zoos and aquariums need to be directly associated with conservation programmes in the wild, and why and how they need to integrate their conservation work with their own organizational activities, internally and externally. Internal integrated conservation activities are those which relate to the way in which a zoo or aquarium is organized and acts in regard to its everyday dealings with visitors. External integrated activities are those which an organization conducts away from its grounds. Both internal and external activities are discussed and listed, and basic strategies are suggested. The emphasis throughout is on collaboration, coordination and communication.

Vision

The major goal of zoos and aquariums will be to integrate all aspects of their work with conservation activities. The fundamental elements of each organization's culture will be the values of sustainability and conservation, and social and environmental responsibility. These values will permeate all areas of their work and will be understood and promoted by all those working within the WAZA network.

1.1 Introduction

Zoos and aquariums began to realize their potential as a positive and influential force for conservation of wildlife as early as the beginning of the 20th century, and by the 1960s increasingly included conservation as a major part of their overall mission. Throughout the world there are zoos and aquariums, particularly those in WAZA, that play a powerful role in the conservation of biodiversity and they strive to maximize their contribution to global conservation in various ways.

The aspiration now of the world zoo and aquarium community is that all its members be directly associated with conservation programmes in the wild and be seen to be involved. No individual zoo or aquarium can contribute to conservation in a meaningful way without integrating conservation into its organizational culture; integrated conservation must be its clear and explicit aim.

Integrated conservation is achieved most effectively when all the activities of a zoo or an aquarium are linked to one another conceptually, and are strategically coordinated both externally and internally; their main aim being the conservation of threatened species and the maintenance of healthy ecosystems. The processes of coordination, collaboration and communication should become routine and easy.

Thus, integrated conservation includes a set of internal processes by which a zoo tries to manage all its activities and relationships in support of specific and well-defined conservation programmes. Integrated conservation can also serve as a flag under which conservation programmes can be communicated to zoo visitors, supporters, the media and the general public.

Integrated conservation activities will vary in different parts of the world because of cultural and social factors and the everyday reality of life. Zoos located within the high biodiversity regions often invest much of their time, energy and financial resources in providing treatment and holding areas for individual, formerly free-ranging, wild animals. These include those animals which come into conflict with people in cities and towns, those which have been intercepted in illegal trade, wild animals taken as pets which have become a burden for their owners, or those which become victims of natural disasters such as floods, fire, or earthquakes, or even those which are lost, have strayed or have been stolen. These zoos are often heavily involved in welfare issues and this can affect the way the institution engages in, or even interprets, integrated conservation.

Zoos and aquariums around the world can undertake field conservation both in their own country and abroad. Many zoos in Europe and North America do much of their conservation work abroad, particularly in high biodiversity countries, as well as working within their own region, whereas the zoos and aquariums of Australasia, an area that includes some of the hotspots for endemics, collectively directs more conservation resources to within-region projects than to outside-region projects. Many zoos and aquariums in high biodiversity countries such as in Central and South America, Africa, and South and East Asia are still trying to establish their own roles in integrated conservation. These institutions often have significantly larger visitor numbers than zoos elsewhere and these can utilize much of their staff's work and energy. Such zoos are, however, ideally situated to educate very large numbers of

people about their country's conservation problems and potential. Thus, the notion of integrated conservation may mean different things in different places. There is always potential competition for resources between a zoo's revenue-producing activities and its conservation desires and needs. A zoo or aquarium which is financially successful will always be able to allocate or raise more money for conservation than a zoo which is struggling to meet its commitments to its own animals, staff and visitors. However, any zoo or aquarium, however small or short of surplus money, can find meaningful ways to contribute to conservation. Ultimately, we would expect that, rather than creating competition, the conservation role of zoos and aquariums will become so well integrated with institutional success that good conservation will actually enhance the institutional budget.

The World Zoo and Aquarium Conservation Strategy (WZACS) emphasizes that this document and this chapter apply to all zoos and aquariums, whether rich or poor, of whatever size or administrative conditions and from whatever country or culture.

1.2 Internal and external integrated conservation

Integrated conservation falls into two distinct but related sets of activities, internal and external. Internal activities are those which relate to the way in which an institution organizes itself and acts in regard to its day-to-day visitor-related actions. External activities are those which an institution conducts away from its own grounds.

Internal integrated conservation

Most zoos and aquariums around the world already perform many activities that would be described as components of internal integrated conservation. Some of these are listed below.

• All zoos and aquariums care for and exhibit animals in enclosed areas. Sometimes they construct groups of enclosures, often linked by a biological or conservation related theme that is based on habitat, geographical location or ecosystem. In some cases, exhibits contain several different species, both animal and plant.

• Zoos and aquariums serve as recreational facilities for families, social groups and individuals all over the world; in many parts of the world they are one of the major sources of safe and affordable outdoor entertainment.

• Through graphics and other methods of interpretation and engagement, such as keeper talks, animal feeds and natural-behaviour animal shows, they can explain the biology and behaviour of animals within the enclosures, including reproduction, social behaviour and population ecology. Some zoos also explain about the wild habitats where the animals are found, the threats facing the species in the wild and what zoos are doing to help conservation.

• Many zoos have education departments for both formal and informal educative processes, although in some parts of the world, education is undertaken by staff that have other duties or even by local non-governmental organizations.

• In order to attract visitors, zoos market themselves to the general public using many methods, including advertising, public relations and word-of-mouth. In some countries however marketing is hardly necessary and even restricting numbers at certain times may have to be considered.
In future, by adopting a strategy of integrated conservation, zoos and aquariums will also:

• adopt a truly sustainable approach to their own maintenance and construction processes by, wherever possible, building with sustainably-sourced or recycled materials with low embodied energy; minimizing energy consumption by using insulation and passive heating systems; generating their own energy by employing methods such as solar gain and wind power; and explaining all these 'green' initiatives to their visitors;

• make explicit links between all their major exhibits and field conservation projects so that visitors learn about the conservation status of the animals they are looking at;

• engage visitors and the broader community in debate about the wider issues threatening species in the wild and try to inspire them and thus secure their support;

• try to associate shops and catering facilities with conservation programmes – for example, by selling crafts from the area of a conservation programme and using the proceeds to benefit local people from that area;

• inform visitors about the conservation work of the zoo or aquarium plus that of other zoos and aquariums, conservation organizations and government agencies;

• draw conservation issues to the attention of a wider audience through promotional work such as public relations activity, the Internet and advertising. The Internet should not be underestimated as a tool for increasing awareness and building consensus on conservation issues.

External integrated conservation

The WZACS emphasizes that the modern, complex world of conservation has many agendas and many players. No single organization, be it zoo, aquarium, conservation charity or development organization should act alone. Conservation activities should be collaborative, with all the stakeholders working towards the same end, and avoiding competition or exploitation.

Conservation-active zoos and aquariums must cooperate proactively with human development agencies, national and international conservation agencies, government departments and local communities, to ensure long-term sustainable solutions. Much conservation activity in the past has failed to take enough account of wider agendas, in particular human development, and this is still of considerable concern.

Unlike many conservation organizations, which are not highly visible to the general public, zoos and aquariums, because they are popular visitor attractions, have unique opportunities to introduce their visitors to a wider world and

to explain the issues of international conservation. They can greatly enhance visitor awareness of conservation matters, both problems and solutions, by integrating their own work with that of other conservation bodies; by showing evidence of that integration, they become the 'shop window'. They can also act as physical foci for integrated networks of conservation and development organizations, providing central resources such as meeting and training facilities.

Many zoos and aquariums already keep species as part of cooperative and coordinated national, regional or international breeding programmes, collaborating with other zoos and other breeding facilities. The pattern of involvement in such programmes varies throughout the world; some regions have well established programmes, while others are only just beginning such work. By adopting a strategy of integrated conservation, zoos and aquariums will also:

• achieve their conservation aims in the field by forming strategic alliances with other organizations also working locally in the region of their field projects, including governmental and non-governmental, conservation, community, education and development organizations;

• where possible, raise funds to support field conservation projects or programmes, from visitors, individuals, corporations, charitable trusts or other sources;

• where possible, coordinate or participate in their own field-based conservation projects, whether these are practical (technical assistance), educational (capacity development and community involvement) or involve scientific research;

• work with breeding and welfare facilities within the localities of their field conservation projects, such as other local zoos, breeding facilities or sanctuaries;

• conduct or support appropriate scientific research, both in the field and in the zoo - such research should contribute directly to the conservation of wild nature, preferably the protection of habitats and declining species;

• participate in the activities of the Species Survival Commission of IUCN, including thematic groups such as the Conservation Breeding Specialist Group, the Reintroduction Specialist Group, and the Veterinary Specialist Group;

• engage in and stimulate political debate with their own governments and others.

1.3 Conclusion

Integrated conservation, as outlined above, is not easy to achieve. However, many zoos and aquariums have begun the process and success is becoming increasingly obvious.

Recommendation

The World Zoo and Aquarium Conservation Strategy (WZACS) calls on institutions to pursue a strategy of integrated conservation and strive to allocate all their financial and human resources carefully and intelligently, with maximum cohesive and strategic thinking within their own organization, and maximum collaboration with others. This will achieve the greatest sustainable conservation benefit for threatened species, their habitats and their human neighbours.

Chapter 2 -- Conservation of Wild Populations

Summary

This chapter presents a vision of zoos and aquariums as a force for worldwide conservation, and details how this can be achieved. From a framework based on the Convention on Biological Diversity and the UN Millennium Development Goals, policy is translated into conservation action through involvement in regional, national and local Biodiversity Action Plans and Species Recovery Programmes. This ensures that zoo and aquarium-based activities are integrated, rather than isolated, activities. These institutions engage actively in conservation through diagnosis, problem solving and remedial action, with an emphasis on sustaining long-term studies and programmes. For example, zoos and aquarium wildlife veterinarians are uniquely placed to contribute to research on emerging diseases, and to work at the interfaces between wild and domestic animals and between humans and animals (such as in great ape ecotourism). Wildlife health is also an integral part of the reintroduction and translocation programmes which may be increasingly needed to cope with habitat fragmentation and human-wildlife conflict. All these activities will be most effectively carried out by field units of conservation professionals. Zoos and aquariums are developing as training centres for these professionals, thereby also building local conservation capacity. They are also centres of excellence in animal welfare, breeding, small population management and wildlife health care and use their sites to attract and sustain local wildlife. Moreover, the annual 600 million visitors that zoos and aquariums attract represent an important resource that can be used for funding field conservation. In conclusion, zoos and aquariums are ideally placed to contribute to conservation in the wild, in their own and other countries, through application of their knowledge, skills and resources. Developing this contribution should be a major focus.

Vision

Zoos and aquariums will make further contributions to conservation in the wild by providing knowledge, skills and resources through initiatives in zoo breeding, translocations and reintroduction, wildlife health, research, training, education and by funding field activities. Zoos and aquariums will be an important force for worldwide conservation by their employment or support of field workers active in the conservation of wild animals and their habitats.

2.1 Introduction

The moral obligation of zoos and aquariums to make a direct contribution to conservation in the wild and to be a more potent-force for conservation internationally is not a new aspiration It has however, gained greater momentum in recent times as people have moved from wanting to look at and learn about animals in zoos to wanting to do something about their conservation in the wild as well. Now is the time to move even more strongly toward concerted conservation action, and for zoos and aquariums to expand their support for field conservation activities and develop corresponding systems of accreditation.

From the outset it is important to acknowledge that zoos and aquariums vary in their capacity to support conservation in the wild. This chapter sets a framework for what can be achieved, singly or in collaborative partner-ships. It is not prescriptive, and inevitably different institutions will engage in different activities. Support for conservation in the wild can be through direct action to improve habitats and target species numbers, or indirect action such as education, fund-raising and research to guide policy and practice. These indirect approaches are more fully dealt with in other chapters but are also mentioned briefly below.

2.2 International context

In the introductory sections of the 1993 World Zoo Conservation Strategy (WZCS), the World Conservation Strategy published by IUCN in 1980 was cited as an important framework for looking at conservation action. However, the policy landscape changed when the Convention on Biological Diversity (CBD) was adopted at the Earth Summit in Rio de Janeiro in 1992. The zoo and aquarium world must now consider its conservation proposals and actions in this context, rather than developing zoo-based initiatives which are separated from mainstream conservation efforts.

Over 180 countries are signatories to the CBD (www.biodiv.org), which is legally binding and has three goals:conservation of biological diversity; sustainable use of the components of biological diversity; and the fair and equitable sharing of the benefits arising from the use of genetic resources. An important point to bear in mind in this international context is that the CBD distinguishes between ‘conservation’ and ‘sustainable use’, which are two separate objectives in the convention, unlike the World Conservation Strategy, where sustainable use was perceived as a part of conservation.

The CBD is the overarching convention for addressing conservation issues, but there are a number of complementary conventions: the 1971 Ramsar Convention on Wetlands (www.ramsar.org), the 1972 World Heritage Convention (www.unesco.org/whc), the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (www.cites.org) and the 1979 Convention on Migratory Species (www.cms.int). These are also important for guiding conservation policy. The move from policy to changes on the ground is brought about through various action plans, in particular regional, national, and local Biodiversity Action Plans (BAPs), which nationally are a requirement under the CBD. Zoos and aquariums can focus their conservation attention on BAP priorities, thereby contributing to wider processes and collaborating with a broader set of partners than those generated by the zoo community alone. Where BAPs are weak, or do not exist, zoos and aquariums can contribute information, ideas and staff to formulate or implement effective BAPs.

2.3 Development

As well as considering the spectrum of conservation action, from global to local, zoos and aquariums need to be aware that achieving effective conservation and sustainable use are only likely to be lasting if programmes are implemented in the context of local cultures, livelihoods and development needs. In broad terms, the United Nations Millennium Development Goals (www.undp.org/mdg) provide a useful framework for approaching this issue. The bulk of the goals and targets focus on reducing poverty and hunger, and improving health and education, but there is also an environmental sustainability goal, with a target ‘to reverse the loss of environmental resources’ by 2015. It is important that this target is not forgotten, and that it is integrated into the achievement of the other development goals. Attempting to bridge the conservation and development agendas is a big step, but if it can be done, zoos and aquariums have an opportunity to tap into, or at least influence, huge amounts of official development assistance (often called ‘aid’).

Box 2.1 shows two examples, one at the policy level and one in the field, which indicate how this can be done. Other conservation initiatives supported by zoos and aquariums have taken community wildlife management approaches, in an effort to ensure that these stakeholders do not pay disproportionately for international conservation benefits. Where there is strong social cohesion and a capacity for partnership approaches to conservation management, this policy can be effective and long-lasting.

2.4 Reintroductions and translocations

The earliest proposals for conservation of wild populations by zoos were through breeding and reintroduction, building on the successes of breeding American bison, *Bison bison,* and European wisent, *Bison bonasus,* at North American and European zoos and wildlife parks respectively. Zoos and aquariums can act as ‘arks’ in which carefully managed populations of animals are bred and the progeny released back into the wild.

In appropriate circumstances, zoos can provide the necessary animals, skills and know-ledge for breeding: identifying breeding stocks (through genetic analysis when necessary); establishing appro-priate social units for successful breeding and rearing; attending to behavioural needs; determining diet and welfare standards. By combining these aspects of husbandry, implementing pre-release training and acclima-tization, and conducting research to improve breeding and

reintroduction success, suitable animals can be provided for reintroduction into the wild.

The spectacular early success of the Arabian oryx *Oryx leucoryx* restoration programmes in Oman and Saudi Arabia showed that zoo-bred animals could be released in appropriate wild areas, at appropriate times, and using appropriate release techniques, to build up populations in the wild. As more attempts were made, international stan-dards were developed for best practice in reintroduction projects (www.iucn.org/themes/ssc/pubs/policy/reinte.htm).

However, the simple logic of this approach often belies the complex reality on the ground, and many attempts to reintroduce species into the wild have had limited success and/or been hugely expensive. Some of the obvious limitations relate to animals having to cope with dangers of the wild; clear examples are heavy predation of reintroduced Golden lion tamarins *Leontopithecus rosalia* and Ruffed lemurs *Varecia variegata*. Even more complex problems arise when zoo bred chimpanzees *Pan troglodytes* which have lost their fear of humans are released and then come into conflict with local people – although 17 chimpanzees were released onto Rubondo Island NP in Tanzania during 1966-69 and have since increased to about 50 individuals.

Zoos and aquariums need to expand research on methods to improve reintroduction successes. New factors pro-moting extinction may arise at later stages of re-estab-lishment that were not present or did not need to be prevented earlier on. For example the early success of the Arabian oryx restoration programme in Oman was radically changed by extra-territorial incentives to capture for stocking elsewhere; this could not have been foreseen. Reintroduction projects are not only about the animals being reintroduced but in many cases are a combination of ecological, social, economical and political aspects that all need to be taken into consideration, and over a very long time frame. By not addressing socio-economic aspects and integrating adaptive management into a project, the result in the long term may be frustration and failure.

Releasing animals to reduce a zoo surplus, or ostensibly for animal welfare reasons, is more likely to increase disease risks and lead to behavioural and environmental problems with resident animals and vegetation, and other dangers both to humans and animals, than to improve successful conservation of wild populations. Such releases should be limited to occasions when adequate research and precautions have been taken to ensure there will be no adverse impact on existing wild populations or ecosystems. There should also be careful monitoring, post-release, in order to provide sound scientific information which may influence future release attempts.

An important activity which uses a number of skills from reintroduction programmes is the translocation of wild animals. This may be done, for example, to reduce conflicts between humans and wildlife where wild animals are killing livestock or people (e.g. tigers, *Panthera tigris,* in Malaysia) or destroying property (e.g. African elephants, *Loxodonta africana,* in Zimbabwe or Botswana). As habitat fragmentation becomes more extreme, and climate change shifts the boundaries and quality of habitats, translocation is likely to become an increasingly important tool for conservation in the wild. The skills and knowledge of trained and experienced zoo and aquarium professionals, as well as other husbandry experts, are needed to guide conservation management agencies in such translocation work.

Needless to say, these various efforts will do little to help populations in the wild unless the skills and resources are available to maintain and manage wild populations. All reintroduction and translocation programmes need longterm support in research, time, dedication and money.

Box 2.1

Bridging the Conservation and Development Agendas

EAZA Bushmeat Campaign

In 2000, the European Association of Zoos and Aquaria (EAZA) Bushmeat Campaign was launched. This public awareness and fund-raising effort included a public petition, signed by 1.9 million people who visited European zoos, calling on the European Union, through its parliament and commission, to take greater action to safeguard great apes and other large mammals that are being lost through the bushmeat trade. The results, at the time of writing, are a resolution from the European Parliament to improve European aid investments (e.g. transport) to take account of bushmeat issues, and a call for greater European spending on initiatives that improve management of the bushmeat trade.

Royal Chitwan National Park

The Zoological Society of London, with funding from the UK's Department for International Development and Kadoorie Charitable Foundation Trust developed a project that focussed on setting up four veterinary clinics in the buffer zone around Royal Chitwan National Park. The aim was to improve poor relations between the park and local communities by providing veterinary care benefits for herders to offset the costs of lost access to grazing in the park and the costs of livestock killed by tigers (*Panthera tigris*) and leopards (*Panthera pardus*). After four years, many local herders had exchanged their zebu cattle for improved breeds, which were more expensive but provided a five times higher milk yield. The new clinics and veterinary support had reduced livestock losses, and importantly the herders had stopped sending these more expensive animals into the park, because they did not want to risk their death or injury. This in turn reduced illegal grazing and lowered the risk of cattle diseases affecting gaur *Bos gaurus* and wild Asiatic buffalo *Bubalus arnee*. A previous long-term project of the Wildlife Conservation Society on the Indian rhinoceros *Rhinoceros unicornis* had resulted in a major expansion of park lands.

2.5 Wildlife health

Zoos and aquariums have large numbers of veterinary professionals working with non-domestic animals and these veterinarians can actively contribute to field conservation, as well as building a body of skills and scientific knowledge to aid intervention in the wild. Zoos and aquariums also provide a key resource for training wildlife veterinarians.

Veterinary input to reintroduction work involves the treatment and evaluation of diseases and illnesses and the control of parasites and pathogens in zoo and other institute breeding populations, as well as ensuring that there are no disease, stress or injury problems during translocation and release. Between these two steps, wildlife veterinarians also need to carry out health screening of animals before they are reintroduced, to avoid the inadvertent release of parasites and pathogens from breeding centres into wild populations.

Wildlife health is also an important issue in the conservation of wild populations. A long-standing problem of rinderpest is described in Box 2.2. New and emerging diseases are becoming an urgent issue, epitomized by the catastrophic declines in amphibian populations in recent years in at least four continents as a result of attack by a novel pathogenic fungus
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Other wildlife health issues also need to be understood. For example, research on the magnificent Steller's sea-eagle *Haliaeetus pelagicus*, led by Moscow Zoo, showed how lead shot in carrion was accumulating in the eagles, causing their deaths. The Wildlife Conservation Society in New York is conducting research in central Africa on the Ebola virus, which circumstantial evidence suggests is devastating lowland gorilla and chimpanzee populations. More recently, the abrupt and rapid decline in Asian vulture populations has been ascribed to the use of the drug diclofenac in domestic animals, particularly cattle, whose carcasses are the vultures' main food.

The link between human and ape health needs even more detailed attention in the light of ecotourism developments. Such developments aim to give greater value to wildlife resources, which might otherwise be destroyed, but also bring tourists into close proximity with animals such as gorillas and chimpanzees. Mountain gorilla tourism is an excellent example of this situation: there is evidence to show that human diseases can be transmitted to wild populations of great apes. Wildlife veterinarians have a key role to play in guiding tourism operations to safeguard wild populations of apes and other species from these risks.

2.6 Field conservation units

Reintroductions, wildlife health and zoo-based research are, however, insufficient in themselves to achieve lasting conservation in the wild. They can be successful only under limited circumstances, often to rescue a desperate situation, and with variable and uncertain success. They are often very expensive. To become a major force for field conservation, zoos and aquariums will have to create or support field units of conservation professionals.

Box 2.2

Rinderpest

A conspicuous example of an imported disease is rinderpest, which was brought into Africa in infected cattle in the 1840s. By the 1890s it had devastated ungulate populations that had evolved in Kenya with no resistance or tolerance to the disease. The initial death toll was hundreds of thousands, with rotting carcasses smelling for months on the East African savannas. These included Serengeti wildebeest *Connochaetes taurinus*, whose numbers fell to about 300,000. The population only recovered to levels of around 1.5 million in the 1960s, after rinderpest was eradicated in cattle, and consequently in wild ruminants. Rinderpest in wildlife populations needs to be monitored, so that eradication programmes can focus on danger areas, such as the Somali-Kenya border where the endangered Hirola antelope *Damaliscus hunteri* occurs.

The work of these field staff can vary from short assessment surveys to long-term studies. Small, well-focused surveys and research can be highly effective in identifying problems, starting management processes and encouraging policy change. However these need to be supplemented with long-term research to show how the animals live in the wild, and what threats they and their habitats face. This information will guide the longterm actions of conservation management agencies.

To take this step, zoos and aquariums will need to invest in recruiting, training and retaining field conservation staff. It is also important that these conservation professionals be versed in social, economic and institutional principles, in addition to having biological knowledge and experience. The scale of the task must be appreciated because lasting conservation outcomes require wildlife rangers and parks staff to be trained and developed, local communities encouraged to participate, and governments and private companies persuaded to give support; this requires the recruitment of, and support for, conservation professionals
in the range countries.

2.7 Funding base

To accelerate this change, zoos and aquariums can pool resources, particularly funding, to achieve conservation in the wild, since many may not be able to set up their own 'field conservation units'. Zoos and aquariums attract over 600 million visitors each year (www.waza.org), and often have membership organizations which would together comprise hundreds of thousands of people. This repre-sents a large segment of society concerned about conser-vation, and it represents an important resource for fund-raising for field conservation.

The range of activities and approaches that zoos and aquariums can use to fund field projects is enormous, as are the sums that can be raised. For example, a three-

year review of British and Irish zoos (1997–2000) showed that over £5 million was spent by the zoos on field conservation. EAZA annual conservation campaigns (which exclude individual projects) have raised over 250,000 euros each year and Zoos Victoria (Australia) directs about A$300,000 per year to field projects. The Wildlife Conservation Society based at Bronx Zoo, NY, disburses about $32 million on *in situ* conservation projects each year. Sums raised through gate takings can be supplemented through corporate sponsorship and foundation or government grants, which further lift the potential for raising substantial sums for field conservation.

The extent to which zoos and aquariums fund field conservation varies greatly. Large institutions spend substantial sums, but equally groups of zoos have collaborated to achieve particular conservation aims. For example, a consortium of 39 zoos formed the Madagascar Fauna Group (MFG - www.madagascar faunagroup.org), which funds field activities, including conservation edu-cation and lemur reintroductions. In 2003, over 120 EAZA zoos, as well as Australasian, Russian and non-EAZA European zoos, joined together to raise funds for nine tiger field projects supported by 21st Century Tiger.

These fund-raising activities are open to zoos of all sizes; the smaller can contribute to larger consortia to ensure that enough funds are raised overall to make a difference on the ground. There is no doubt that by being seen to be actively involved in field conservation, zoos and aquariums will attract a wider donor base.

2.8 Zoo and aquarium site enhancement

The importance of zoos as refuges for urban or rural wildlife is often not given a strong focus, yet zoos can be managed to improve habitats for rare species that are not in the collection. By planting hedgerows, leaving 'weeds' and rotting wood for insects, making ponds, providing food at key times, and offering protection such as nest boxes for birds and dormice, or roosting boxes for bats, many wild animals can be encouraged. Some of these may be locally or nationally rare, such as House sparrows *Passer domesticus* at London Zoo, and Bog turtles *Clemmys muhlenbergi* at Baltimore Zoo.

Furthermore, zoos and aquariums should make their visitors aware of the conservation actions being carried out, to elicit their support, and to inform them about local wildlife, both plant and animal.

2.9 Training courses

For those zoos and aquariums that plan to support effective conservation in the field, as well as increasing their own ability to conduct surveys and research, and to implement conservation management, there is a need to develop new sets of management skills. Conservation in the wild is generally implemented away from the parent institution, possibly in another country, where it is necessary to work through government agencies, often in another language and with a different culture, and where field staff have to be supported over long distances.

There is an ever-present need to train staff from wildlife, forestry, national parks, and zoos and aquariums from countries where training and education resources are scarce, but where many rare plants and animals dwell. Zoos and aquariums can offer ideal training centres for these professionals, with courses specially designed to suit a range of candidates. Long-running examples include the Smithsonian Institution's Conservation and Research Center at Front Royal, Virginia, USA (www.nationalzoo. si. edu /ConservationAndScience/ CRC) and the Durrell Wildlife Conservation Trust's International Training Centre (www.durrellwildlife.org). at Trinity, Jersey. Having a range of animals on site offers an important resource in training courses to increase skills, which then helps to build world-wide networks of like-minded professionals. The next step in this capacity building is for zoos and other institutions with acknowledged success in such training to work closely with other zoos and aquariums that have the financial capacity and interest to teach the organizers and trainers.

2.10 Evaluation

There are few published studies to date quantifying the effectiveness of conservation projects supported by zoos and aquariums or for other kinds of conservation organizations, and there is a need for objective methods of assessing the success of such projects.

2.11 Conclusion

Zoos and aquariums are ideally positioned to contribute directly to conservation in the wild, both in their own and other countries, by combining two approaches. First, they are uniquely qualified to provide skills and information in the disciplines of animal husbandry, welfare, breeding, small population management, and wildlife health care. Second, they can implement field projects by working with local partners and with supporting institutions. The unusual integration of these two sets of capacity, expertise and information offers an important opportunity for zoos and aquariums to contribute to conservation in the wild.

In summary, zoos and aquariums can take direct action to conserve wild populations through:

• appropriate breeding in collections, reintroduction and translocation programmes, and advising on behaviour, diet and welfare standards;

• advice on wildlife health issues and practical assistance in the wild;

• funding;

• establishing and/or supporting field conservation units;

• education through conservation programmes, including those for wildlife indigenous to the zoo area;

• training programmes.

This direct conservation action needs to be complemented and supported by indirect conservation

action: research into genetics, physiology, nutrition, behaviour, behavioural ecology, animal welfare and reproduction; fund-raising for field activities; education and raising awareness; and policywork.

Recommendations

The World Zoo and Aquarium Conservation Strategy (WZACS) calls on all zoos and aquariums to increase their work in support of conservation in the wild.

The WZACS takes the view that zoos and aquariums, encouraged by WAZA and its regional and national associations, should focus their conservation proposals and actions within local, national, or regional Biodiversity Action Plans and/or similar species recovery programmes. Where these have not been set up or are not effective, their formation should be initiated, supported or strengthened.

The WZACS emphasizes that zoos and aquariums must not work independently in reintroduction or translocation programmes but must work with other institutions, and always with the appropriate government authorities, the relevant IUCN/SSC Specialist Groups, and other governmental and non-governmental conservation agencies, particularly those in the host country, and with the relevant national or regional zoo or aquarium associations.

The WZACS strongly recommends that where possible zoos and aquariums recruit, train and support conservation staff for work in the wild; the WZACS also applauds those zoos and aquariums that have set up training courses for conservation professionals, and encourages other institutions to consider setting up their own courses or offer assistance to those courses already operating.

The WZACS calls on national and regional associations and all zoos and aquariums, however small or large, to be actively involved in raising funds for field conservation.

The WZACS suggests that zoos and aquariums enhance their sites with a view of providing habitats for threatened native species.

The WZACS recommends that regional and national zoo associations devote time and money to devising and implementing methods of assessing the success of the conservation contributions being made by their members.

Making WZACS work for you :

Launching the World Zoo Conservation Strategy in your city, country or individual zoo

The new World Zoo Conservation Strategy can help the image of your individual zoo, your zoo society, your city services or your country's zoo community. We encourage you to order additional copies of the Strategy and conduct a press conference in your city, making your zoo the star of the show and using the opportunity to get public interest and support as well as funding to improve your facility.

Refer in situ conservation, get involved with your forest division (we are sending copies to a number of forest divisions) and try to help them with an in situ project as suggested in the Strategy. Organise a workshop with concerned citizens, your zoo society, staff and government officers using the World Zoo Conservation Strategy to create an Action Plan for the next five years of bringing your zoo into the 21st Century. Strategies are with us in plenty ... none to waste but enough for using constructively. Send us a list of foresters you want to receive the Strategy or Summary. The Summary will be a document of about 24 pages with the same attractive cover, a summary of chapters, recommendations and also a few pages of more basic zoo information from the earlier strategy and an action plan by the SAZARC meeting. There will be a Hindi translation of the Summary. We will be distributing copies of both free on the same basis we do our education programmes -- send us a proposal and agree to pay postage and we will send you Strategies or Summaries free of cost.

The following are some documents which have been used as press releases, speeches, and publications announcing and promoting the new Strategy. These will give you ideas for your on activities. Take bits that are useful to you and modify them for your own purpose.

Building a Future for Widlife

The World Zoo and Aquarium Conservation Strategy Ed McAlister, AO - President of WAZA Message to the World Zoo and Aquarium Community

It gives me great pleasure, as President of the World Association of Zoos and Aquariums, and the first one from Australasia, to be launching this new World Zoo and Aquarium Conservation Strategy here in Australia. I am also pleased that there are a large number of delegates and attendees from different parts of the world and from both the Northern Hemisphere and the Southern Hemisphere. I will not dwell too long on the contents of the document but let me say a little, however, about the history of this document and its predecessor. In 1993, the original World Zoo Conservation Strategy was launched and made a big impact on the direction which zoos, and to a lesser extent, aquariums, were to take for the next ten (10) years.

In 2002, in preparation for the tenth anniversary of the original strategy a small, but important meeting was held. The late Ulie Seal, then chairman of the Conservation Breeding Specialist Group (CBSG) of the IUCN, Bill Conway, then Director of the Wildlife Conservation Society of New York, Bert de Boer, Co-ordinator of the 1993 strategy, Alex Rubel, President of the WAZA and Gunther Nogge, Director of the Cologne Zoo, met to discuss the structure of a new strategic document which would build on the success of the original publication but also demonstrate ways in which zoos and aquariums could successfully support conservation activities.

The decision was taken to have nine (9) chapters and to expand areas of the original document to indicate their growing importance in the 21st century. These chapters were to be:-

Chapter One - Integrating Conservation
Chapter Two - Conservation of Wild Populations
Chapter Three - Science and Research
Chapter Four - Population Management
Chapter Five - Education and Training
Chapter Six - Communication : Marketing and Public Relations
Chapter Seven - Partnerships and Politics
Chapter Eight - Sustainability
Chapter Nine - Ethics and Animal Welfare

Each chapter would have a lead author supported by a group of contributing authors and reviewers. In my case, while as President, I read the document many times, my particular area of involvement was that of Ethics and Welfare; an area which I believe is fundamentally important if we are to increase our credibility and standing in the general community.

It was recognised that in having nine different authors there would be a variation in style and thus, Peter Olney, because of his many years experience with the International Zoo Year Book, was asked to undertake the task of editing the publication and turn something written by nine authors into a document which appeared to be cohesive. Jo Gipps as Chairman of the WAZA Conservation Committee was asked to head the Working Group charged with completing the strategy. He was assisted by a Core Group consisting of Miranda Stevenson, Onnie Byers, Peter Dollinger, Chris West, Bert de Boer, Alex Rubel and Ed McAlister. At this point, I acknowledge the help we received from others such as members of the CBSG.

It was decided to complete the Strategy and then, as before, write an Executive Summary which could be used as a marketing document. This Executive Summary will be critical to the success of the strategy as it is aimed at people who will not have the time, or interest, to read the whole document. At one stage, there was a suggestion that there could be a number of Executive Summaries to serve different purposes. I opposed this suggestion because I believe that the summary MUST give the same message to all readers, however, I have suggested that different précis could be created for different purposes depending upon the intended audience, e.g. politicians, school-children, etc.. The strategy will be available in a number of different languages. As we already know, the English version has been printed and is being launched today, the German edition will be launched in Berlin on 27 May, the Spanish version was discussed in South America in mid-April and will soon be launched.

Other languages will follow quickly thereafter. At this point, I must express my personal thanks to our Executive Director, Dr Peter Dollinger, for all his hard work in helping to bring this monumental task to a successful conclusion. Peter worked tirelessly to ensure that we got the best result possible.

In addition to the Strategy itself and the Executive Summary there will shortly be available a Resource Manual. This Resource Manual will give examples of successful projects and tell others how to undertake these projects and avoid the pitfalls which can so easily befall even the best-intentioned program.

Time does not permit me to discuss each chapter in detail. Suffice to say that each chapter has a short Summary of the contents of the chapter, Vision Statement and a number of Recommendations. This strategy will, I believe, set the guidelines for the profession for the next five to seven years. I take this opportunity to thank, publicly, all those people involved with the conception, gestation and delivery of this strategy document. I am aware that many colleagues have already started to implement the vision and recommendations from the strategy as they were able to read the drafts as they were being improved. I urge all members to purchase sufficient copies to allow them to forward a copy to Board Members, decision makers, politicians, research associates, academic colleagues, etc., and others with whom we work so that they achieve a better understanding of what we stand for. Most importantly, I urge you all to implement this strategy with all possible speed and to adhere to it; our organisations and our effectiveness will be so much the better for it. **ED McAlister, AO PRESIDENT, WAZA**

WORLD ASSOCIATION OF ZOOS AND AQUARIUMS

Media release, 2 May, 2005 -- ZOOS VICTORIA Conservation Boost as Victoria hosts International Zoo Conference

Zoos Victoria today announced a boost to its conservation programs as it hosted a major international Zoo conference. More than 200 delegates from around the world are in Melbourne for the joint conference of the Australasian Regional Association of Zoological Parks and Aquaria and the South-East Asian Zoos Association.

Zoos Victoria CEO, Laura Mumaw, said $50,000 would provide a boost to programs to conserve three threatened species – the Eastern Barred Bandicoot, the Corroboree Frog, and Scott's Tree Kangaroo. "This is on top of the $4 million-plus that we contribute to supporting conservation both directly through field conservation and through measures like development and application of animal management expertise, new infrastructure, and community engagement," Ms Mumaw said. "To boost our contribution to field conservation programs, from September we will work with our catering partner to allocate $2 for every person attending a catered zoo function to field conservation". "This is expected to raise an extra $120,000 per year to go direct to field conservation programs."

Ms Mumaw welcomed the launch of the new World Zoo and Aquarium Conservation Strategy, Building a Future for Wildlife, by the Minister for Environment, John Thwaites, at the conference opening at Melbourne Zoo today. "Zoos Victoria is already implementing one of the main recommendations of the Strategy – strengthening links between zoos around the world – by hosting this major conference," Ms Mumaw said. "Each year, Zoos Victoria helps 1.5 million on-site visitors and one million online visitors connect to animals and the environment. "We also share expertise and skills with external organisations and communities to assist in the care and conservation of wildlife. "In all these activities, Building a Future for Wildlife will be a valuable guide and resource. We urge other zoos and aquariums around the world to take it up."

WORLD ASSOCIATION OF ZOOS AND AQUARIUMS MEDIA RELEASE, Melbourne, 02.05.2005 For immediate release

New Blueprint for Zoos and Aquariums Conservation Work

Zoos and aquariums around the world have a new blueprint for their conservation work with today's launch of Building a Future for Wildlife – the World Zoo and Aquarium Conservation Strategy. The international launch of the strategy was hosted by Melbourne Zoo at its award winning Trail of the Elephants.

World Association of Zoos and Aquariums president, Ed McAlister, said the strategy would be an important resource for zoos and aquariums everywhere. 'Building a Future for Wildlife is a blueprint for action on conservation by zoos and aquariums worldwide,' Mr McAlister said. 'The Strategy encourages zoos and aquariums to become models for truly integrated conservation, linking programs inside and outside their properties. 'It recommends that zoos and aquariums assess their conservation efforts with hard data and measurements.

'It urges zoos and aquariums to set examples for environmental sustainability; and to set and follow ethical standards for animal welfare 'It calls on zoos and aquariums to strive to become major advocates for wildlife and wild places in their respective communities; and to maximise the use of education and communication as important conservation activities. 'It recommends increased work by zoos and aquariums to support conservation in the wild, through science, research, breeding programs and application of their skills and expertise.'

The Strategy also urges an increase and strengthening of networks, information exchange, and co-operation between zoos and aquariums themselves, and with other organisations. 'Zoos and aquariums are already setting examples for vital conservation work that in some cases would not otherwise occur,' Mr McAlister said. 'The new Strategy, to be published in several different languages, will be backed up by a Resources Manual with practical examples and advice on conservation initiatives.'

Notes to Editors : The World Association of Zoos and Aquariums (WAZA) was founded in 1946 in Rotterdam as International Union of Directors of Zoological Gardens. It promotes effective stewardship of the natural world by encouraging its members to bring people close to living animals, applying and advancing in situ and ex situ conservation, science and education, and setting standards of excellence in animal welfare and environmental responsibilities. WAZA-more than 200 major zoos and aquariums (institutional members) and 22 regional or national federations representing another 1000 zoos and aquariums. The headquarters of the organisation are located at Berne, Switzerland.

WORLD ASSOCIATION OF ZOOS AND AQUARIUMS

How to order a copy of WZACS individually

For individuals who want a copy of WZACS, a WZACS poster and a WZACS sticker, you can order the same by paying for postage. Either you can order by V.P.P. only which will cost you Rs. 46. If you order any other way we will charge you postage, packing, cheque charges, receipt charges, time and energy charges and every other charge except for the book. That is free, thanks to Chester Zoo, Thrigby Hall Wildlife Park, North Carolina Zoo, European Association of Zoos and Aquaria and Koln Zoo and the Central Zoo Authority of India.

We should mention that in the relatively near future (perhaps two months at most) we will also be circulating summaries of the Strategy with a few pages of the old 1993 document which consists of just facts about zoos and the SAZARC Action Plan for using WZACS which was decided at the 2004 SAZARC meeting held in Lahore, Pakistan in December.

There will be ways to get Strategy summaries for education also but that will be figured out later. Eds.