

The World Zoo and Aquarium Conservation Strategy -- Chapter 5 Education and Training

Summary

Education is a central role for all zoos and aquariums and should thus be part of their organizational strategy. This includes having a defined education policy, making a strategic development plan for education and demonstrating environmental sustainability (a 'green' ethos). Education goals should be integral to planning collections, designing exhibits, developing conservation programmes and planning visitor services. The educational role is to interpret living collections to attract, inspire and enable people from all walks of life to act positively for conservation. Educators interpret animals in their economic, cultural and political contexts, as well as biological ones, and explain human impact on wildlife in both local and global contexts. In order to do this education staff (and volunteers) should be supported through training. Networking through the International Zoo Educators

Association and with counterparts in botanic gardens, museums, and science centres provides further opportunities to share methods. Zoos and aquariums undertake informal (free-choice) education with their visitors, and formal education through developing links with schools, colleges, universities and teacher training institutes. By participating in curriculum development, zoo and aquarium educators can keep their programmes up to date and help ensure that conservation is incorporated into courses. Living collections can be used well beyond biology, to teach animal care, horticulture, exhibit design, and leisure management; so developing training partnerships further expands educational roles. Education is also a critical component of field conservation, building awareness and support. The chapter thus presents a vision of zoos and aquariums making a significant conservation contribution by acting as leaders and mentors in socially- and culturally-relevant formal and informal education, thereby influencing people's attitudes and behaviour towards wildlife and environments, local and global.



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Vision

Zoos and aquariums with their unique resource of live animals, their expertise, and their links to field conservation will be recognized as leaders and mentors in formal and informal education for conservation. The educational role of zoos and aquariums will be socially, environmentally and culturally relevant, and by influencing people's behaviour and values, education will be seen as an important conservation activity. Zoos and aquariums will expand the training of their own staff and of others engaged in *in situ* and *ex situ* work.

5.1 Introduction

Zoos and aquariums are excellent centres in which to inform people about the natural world and the need for its conservation. Awareness can be converted into action with positive benefits for wildlife, people and conservation. Educational activities in zoos and aquariums will help realize the vision of Agenda 21, an initiative of the 1992 United Nations Conference on Environment and Development in Rio Janeiro. The official description reads: 'Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment'. It is a large document and the original text, in Arabic, Chinese, English, French, Russian and Spanish, can be found, at: www.un.org/esa/sustdev/documents/agenda21/. Chapter 36 of Agenda 21 entitled 'Promoting Education, Public Awareness and Training' provides an umbrella for all action related to education for sustainable development, including those foreseen by other UN conferences. Chapter 36 'encompasses all streams of education, both formal and informal, basic education and all key issues related to educating for sustainable human development, including environmental education'.

Progress in conservation depends upon the development of public understanding of the relationships between species, the environment and people's own attitudes and actions. The success of other conservation strategies, such as conservation management of *ex situ* populations, reintroduction and habitat protection, depend in the long term upon the influence of education on human behaviour.

Zoos and aquariums enable people to develop appreciation, wonder, respect, understanding, care and concern about nature. This can be achieved globally through the network of zoos and aquariums working locally, nationally, regionally and internationally, and via direct involvement in *in situ* and *ex situ* projects.

There is a need to develop further the potential that zoos and aquariums have for training — not just for zoo staff, but also for others involved in conservation, research, environmental management, education, community development and more.

Zoos and aquariums appeal to a very broad audience and have huge visitor numbers throughout the world. They therefore have the potential to be a very important source of environmental awareness, training and action for a sustainable future. In the early 21st century, we must make a concerted effort to revitalize and re-focus education and training programmes; develop appropriate resources; make direct links with *in situ* work; and engage with public needs, behaviour and aspirations. The aim should be for education to permeate all aspects of the zoo or aquarium's operation, no matter what its size, location or financial constraints.

5.2 Zoos and aquariums as learning organizations

Zoo and aquarium education is a holistic discipline targeted at visitors, staff and the wider community.

The educational philosophy of zoos and aquariums should incorporate the principles of environmental education and education for sustainability. This may be referred to as 'conservation education'. Zoos and aquariums should

recognize the importance of providing basic information about animals and habitats. However, we must all understand that cultural, economic and political factors will influence the emphasis placed upon the variety of environmental and conservation issues in zoos and aquariums in different parts of the world.

Zoos and aquariums should recognize the importance of education by including it in mission statements, by ensuring that it is integral to the activities of the senior management team and by making sure that education goals are fully considered when planning collections, designing exhibits, developing conservation programmes and planning visitor services. All zoos and aquariums, and their associated regional organizations, should produce a written education policy and a strategic development plan for education. (See Box 5.1.)

Zoos and aquariums should also make a suitably qualified member of staff responsible for developing and overseeing educational activities, and should make sure that trained staff and/or volunteers are available. Where possible, they should employ 'educators' and should develop education centres or similar educational facilities.

5.3 Networking

Education and other staff should be encouraged to participate in local, national, regional and international networks such as the International Zoo Educators Association (IZE) and its regional groups. The sharing of ideas, whether face to face or via written or electronic means, is an essential part of maintaining an effective education base. Zoos and aquariums should encourage educators, and give them the means, to engage in such productive dialogues, not just with fellow zoo educators but also with their counterparts in botanic gardens, museums, science centres and other relevant institutions.

5.4 Living exhibits

Living animals have an enormous power of attraction; seeing, hearing and smelling them has huge educational significance in itself. The primary goal of living exhibits is education and educators should be involved in the design of the exhibit. With an increasingly urbanized population, this contact with nature is of vital importance and we should build on it to promote and support conservation. For example, we can display animals in more natural settings, use appropriate mixed exhibits and/or provide contextual story-led or message-driven experiences, using a variety of interpretation techniques.

The design of exhibits based on habitat should include aspects of human culture appropriate to the species, and make use of plants, and features such as sound and climate. Visitors will then more easily understand the concepts of biodiversity and the interdependence of species, habitats and ecosystems, and recognize the links with human actions.

Zoos and aquariums should recognize that the visitors' experience is also affected by the welfare of the animals and their enclosures. Zoos should therefore ensure that positive educational messages are not compromised or confused by poor conditions or poor husbandry.

Box 5.1

Education Standards

The standards summarized here were adopted by the Council of the European Association of Zoos and Aquaria (EAZA) in September 2001. Other regional associations have also developed education standards for their member institutions. The achievement of these standards will enable members to enhance their professionalism and network together continually to improve their educational role and effectiveness.

Summary of the EAZA Education Standards (2001)

1. The education role of the zoo is to be clearly stated in its written mission statement.
2. The zoo must have a written education policy identifying components and setting out the methods by which these components are directed towards the different sections of the zoo's visitor audience. Zoo education should target all visitors, not just schools.
3. The zoo must demonstrate that it is carrying out its education policy, by reference to specific projects, attendance figures, evaluation procedures and research.
4. At least one member of staff within the institution should be responsible for professional implementation of the education policy.
5. Enclosures must clearly and correctly identify the animals in them. Signs should highlight threatened species and species in regional, national and international coordinated breeding programmes.
6. When animal demonstrations form part of the programme, they must contain an education or conservation message.
7. For education programmes to be successful, zoos must exhibit animals in the best conditions possible, in enclosures that enable them to live as naturally as possible and to exhibit natural behaviour as far as possible.
8. Interpretation and education should be an integral part of zoo exhibits; the educator should be involved in the exhibit planning and collection planning process.
9. A reference library appropriate to the size and complexity of the zoo should be maintained and made available to all staff members, and possibly to the public where practicable.
10. Resource material and education information should be made available to the general public and zoo audience. This might include leaflets, guidebooks, teachers' notes, resource packs and worksheets, which should be displayed and available.

5.5 Informal education and self-directed (free-choice) learning

The majority of visitors wish to have a day of recreation and fun and there needs to be a range of educational approaches providing access and opportunity for all, regardless of age or ability.

Within the visitor audience, there are various target groups that provide opportunities for focused conservation education — for example, decision makers, business leaders, consumers, parents, teachers, students, and

children. Groups from a wide range of social, cultural, ethnic and economic backgrounds visit zoos and aquariums.

Visitors are open to receiving information about animals, and are often more receptive to an informal approach. Informal education (e.g. keeper talks, close encounters, hands-on experiences, exhibits that allow visitor access, exhibits with a clear biological theme) is enhanced if the educational and conservation ethos permeates the organization and its staff. Education is more effective when the organization adopts the ethic of 'practise what you preach'; this can be seen if the organization operates in as 'green' or sustainable a way as possible. (See also Chapter 8.)

The educational aims of zoos and aquariums should include the following:

- to excite, enthuse and interest people about the natural world;
- to encourage understanding of conservation issues and visitors' individual roles in them;
- to develop public support and action to address conservation concerns at a variety of levels;
- to provide a range of experiences, materials and resources for the diversity of visitors, to enable them to make informed choices in their daily lives which benefit the environment and wildlife;
- to develop a sense of place as humans in the natural world and an understanding of the relevance of conservation to everyday life.

5.6 Formal education

All zoos and aquariums should attract groups from a variety of educational institutions. By provide exciting, interactive, structured educational workshops, programmes or classes and resources, tailored to meet the specific needs of these groups, zoos and aquariums can contribute to learning and understanding as part of local and national curricula frameworks. At the same time, zoo educators can raise the profile of environmental and conservation issues and advocate positive attitudes about and action for nature from schools, colleges and universities into the community.

Zoo and aquarium education staff should develop links and partnerships with teachers to ensure that zoo educational programmes are up to date with curricula developments. Well tailored education activities may thereby attract support from education authorities, while also demonstrating the important educational role of zoos and aquariums in their local community, and as part of a wider global network.

Zoos and aquariums should recognize the concept of lifelong learning and target students from a wide range of ages and abilities — from pre-school to university, and students with special educational needs. Additionally, zoo educators or specifically trained staff may advance the objectives of conservation education by working in the community — visiting schools, orphanages and old peoples' homes, or assisting with local environmental projects.

The objectives of formal education may be promoted through programmes specifically aimed at training

teachers, and by assisting curriculum development bodies to ensure that the roles of zoos and of conservation issues are incorporated into courses. The whole zoo or aquarium should act as a living classroom with specific on-site courses, and the organization should pursue opportunities for partnerships with local colleges and other educational institutions or agencies.

5.7 Education themes

Many zoos and aquariums have particular themes or specialities — for example, focusing upon a local species, a taxonomic group or a biogeographic region. The educational focus should induce a feeling of wonder and respect for the web of life and our role in it; it should engage the emotions and build on this experience to create a conservation ethic that can be carried into action. This can be summarized as 'attract, inspire, enable'.

Zoos and aquariums can use a variety of methods to engage their visitors' curiosity about wildlife. Visitors should be able to learn about species, their habits, behaviour and conservation, and be inspired to find out more. They should be encouraged to understand the importance of ecosystems, the socioeconomic value of species and habitats and the impact of human behaviour upon wildlife and the environment. Zoos should also enable visitors to take action and recognize their responsibilities for the world we all live in.

Various biological themes may be explored, including such complex concepts as population dynamics, anatomical and physiological adaptation, evolution and natural selection, conservation breeding and conservation management techniques. However, zoos should recognize their broad appeal and explore other educational themes appropriate to their audience — for example, the importance of some species in cultural and religious beliefs, the domestication of species, aspects of good husbandry and the inappropriateness of keeping certain exotic animals as pets.

5.8 Wildlife conservation advocacy

Zoos and aquariums are ideally placed to encourage public support for conservation campaigns, action and political advocacy. Through focused activities, displays, campaigns and information about the choices people can make in their everyday lives, zoos can help visitors make a difference to wildlife.

For some visitors, zoos may be the primary source of information about wildlife, its legal protection and alternative values placed upon nature. Zoos have an important opportunity to promote moral responsibilities and to change behaviour and values.

Wherever possible, zoos and aquariums should make environmental issues relevant to visitors by relating the issues to their own lives and experience. For example, the illegal bushmeat trade in Africa may be compared to over-fishing in Europe. In this way, visitors to European zoos and aquariums can relate to issues in other regions without assuming that environmental problems only happen somewhere else. In other words, education can encourage local action.

5.9 Communicating the message

Zoo and aquarium visitors represent a wide cross-section of society, so a variety of communication methods should be used.

The experience of zoos, aquariums, botanic gardens, exhibitions and museums in the first part of the 21st century indicates that priority should be placed upon live interpreters, as they can be the most effective means of communication. Such interpreters may be staff (who may have other roles within the organization, be it keeper, gardener or education officer) or they may be volunteers, but all should be trained in public presentation skills.

There is a wide range of communication techniques available to zoos and aquariums and these have varying resource implications. However, all zoos and aquariums should try to use a diversity of techniques in ways appropriate to their location, size and budget. The use of the Internet is expanding rapidly, and provides a huge opportunity for zoos and aquariums to disseminate their message globally, even to non-visitors. The Internet also provides a means of exchanging ideas and information. The international network of zoos and aquariums, working together online, makes it possible to share techniques and resources relatively cheaply and even to use Internet technology for specific educational activities such as training. Whenever possible, zoos and aquariums should also communicate their messages through the media, including newspapers, radio and television. (See also Chapter 6.)

5.10 *In situ* conservation education

Education is a critical part of building support and understanding of field conservation projects among local communities in range countries. Indeed, *in situ* projects are doomed to failure in the long term if the local people are not involved and if the underlying causes of habitat loss and the threats to species are not addressed. Cultural awareness, an understanding of the language and a sympathetic ear are also essential.

Zoo and aquarium educators, with their particular skills, may have a part to play, especially in those projects that are supported by their own associations and/or institutions. A zoo or aquarium involved in a field project has a good opportunity to use relevant educational activities to encourage public understanding and appropriate action to support the specific project. For example, projects can encourage organizations to examine issues of global trade, can enable people to buy products that support specific environmental objectives, or can encourage people to save resources or plant a tree.

Zoos and aquariums can also form partnerships with other conservation organizations, and can use the network of the IZE, to form a unified global programme to raise awareness and encourage conservation action.

5.11 Training: focused skills-based education

Zoos and aquariums are well placed to offer support through training for their staff and others engaged in specialist and community based conservation action.

Staff training

Zoo and aquarium staff must be trained and qualified for their roles; every employee and volunteer should be given an introductory overview of the aims and objectives of the organization, including its conservation and education activities. No matter what their job, the staff should be aware that they are working towards a common goal.

All zoos should develop a structured training plan for their staff and volunteers to ensure best practice in all fields of operation and support for the professional development of their staff.

While some roles may require specific qualifications, the practical work is something for which 'on-the-job' training is most appropriate, and clear objectives and processes should be identified. Zoos and aquariums should be encouraged to develop additional training programmes for some posts, particularly those where technical skills are critical and where additional training is necessary for advancement. This may be achieved in partnership with other organizations, e.g. colleges. Some organizations develop training programmes that can also be used by people other than their staff.

Zoo and aquarium programmes should focus on more than biology, science and education, teaching their staff how the organization works, how to build teams and how to be a leader.

Zoos and aquariums may also form partnerships with local or international course providers who can then use the specialist skills and knowledge of zoo and aquarium staff.

Staff should be encouraged and supported in attending workshops, conferences and seminars given internally or externally.

Training partnerships

Zoos and aquariums are excellent learning places for the study of a wide range of disciplines, from animal care to horticulture, from information technology to exhibit design, and from leisure management to catering. In some countries (e.g. Switzerland) staff training is regulated by law, and it may be required that animals are cared for by keepers who hold a certificate. Where this situation applies, zoos and aquariums should cooperate closely with the authorities setting the legal requirements and those implementing them.

For formal education there are benefits in developing partnerships with other training and education providers, such as colleges and universities, and professional organizations such as zoo veterinarians (e.g. European Association of Zoo and Wildlife Veterinarians). Zoos and aquariums can also offer students work placements and internships, teaching and observing the work on site. Such partnerships may be used in developing staff training programmes and gaining certification and qualifications. They may also provide opportunities for funding towards training costs. Similarly, there are benefits in developing partnerships with a variety of non-governmental organizations specializing in conservation and volunteering training, e.g. Earthwatch, Landcare Australia.

Sharing skills with colleagues

One of the greatest training opportunities that should be offered by all zoological collections is that of sharing skills and experience with colleagues in other zoos and aquariums, and with people, such as national parks officers and local wildlife officers, involved in similar activities.

Training can be both formal and informal. For example, staff from one site may visit another and discuss the way they do things (informal) or one zoo may decide to run a training workshop or conference and invite others to attend (formal). The latter is likely to reach more people, but is resource dependent and may be costly if people have to travel to attend it. Less costly options include use of the Internet and video conferencing technology, and publications.

Additionally, relatively resource-rich organizations should consider sponsoring participants from other organizations to attend conferences, or to visit their facility for training. It must be recognized that this should be a two-way process, and those organizations that are resource-rich may learn a lot from those which are not.

5.12 Evaluation

It is essential that zoos and aquariums use a variety of methods to evaluate the impact of their education and training programmes. This will influence their planning for the future and help them to collect evidence illustrating their effectiveness as centres of good conservation education and as agents of change in affecting human behaviour and values for the benefit of wildlife and society.

Evaluation techniques can include comparative assessments of the educational effectiveness of different exhibits, surveys and questionnaires, observations of visitor behaviour, conversations, and satisfaction, records of sales of products in the zoo that have been associated with particular messages or campaigns, records of donations received, responses to pledges and petitions, records of media coverage, and teacher feedback on formal programmes.

Evaluation should be ongoing; methods and results should be shared first with the institution and then with the whole zoo and aquarium community through publications, and presentations at conferences, such as the IZE congresses and regional network meetings.

Evaluation is also essential for developing new exhibits, testing resources in development, monitoring interpretation, and undertaking long-term strategic planning. Evaluation may be conducted by education staff, researchers and marketing staff; however, outside opinion is also most valuable. Zoos and aquariums should take advantage of evaluation activities to make links with those local universities whose students who want to conduct social research projects. It is also useful to link up with other visitor attractions and exchange views on each other's methods.

5.13 Conclusions

The education role of zoos and aquariums is critical in achieving the goals of the WZACS. The aim of conservation

education is to interpret living collections to attract, inspire and enable people to act positively for conservation. Educators need to develop linkages with a wide variety of institutions, establish networks, and improve and evaluate methods and results. They can thus build support for a more sustainable way of living, through both informal and formal education, and both within and outside their own organization.

Recommendations

The World Zoo and Aquarium Conservation Strategy (WZACS) urges all zoos and aquariums to ensure that education is a central part of their reason for being and to provide adequate support and resources to enable this role to be fulfilled.

The WZACS recommends that all zoos and aquarium associations, regional and national, develop an education policy. This should provide a coordinated approach to education, both formal and informal, and provide leadership in the formulation of principles, strategies and minimum education standards.

The WZACS recommends that individual zoos and aquariums develop or adapt their own education policies in line with those of their association and their own needs.

The WZACS recommends that education policy statements, strategies and standards be readily available and be reviewed and updated regularly.

The WZACS recommends that zoos and aquariums enhance the effectiveness of conservation education by working closely with other education institutions and organizations, governmental departments and ministries, and by being involved in formal education curriculum activities, and formal educational programmes designed for all ages and abilities.

The WZACS recommends that zoos and aquariums endeavour to develop structured training programmes available to all staff and volunteers.

The WZACS strongly encourages all zoos and aquariums to use objective and tested methods of evaluating the effectiveness of their conservation education and training programmes.



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