

# WZACS Review and where Dhaka Zoo Stands -- an honest assessment

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Nowadays, a zoo is not only a showcase for animals, but also an educational institution, to highlight and illustrate important issues like wildlife conservation, zoo ethics, animal welfare etc. The zoo also promotes awareness development, recreation, animal welfare, research, biodiversity, ecosystems, environmental protection, etc. using sale of zoo products, zoo marketing and other devices to capture public attention.

Dhaka Zoo is still yet to perfect our promotion of most of these issues, in fact. Dhaka Zoo, as an *ex situ* institution, claims wildlife conservation as one of its major mandates but no timely updating concepts or development efforts are undertaken to achieve this goal due to several regulatory bindings.

On consideration of mandate of zoos revealed in WZACS (World Zoo and Aquarium Conservation Strategy) by WAZA (World Association of Zoos and Aquariums), the Dhaka Zoo aspires to carry out the common philosophy of biodiversity conservation and sustainable development through its conservation education programme and other practical activities. As contemporary young people and the next generation of the world's cities have their first contact with nature through zoos, Dhaka Zoo is hopeful of future success in this context. Our zoo harbours a huge number of components of biodiversity and can also, to an extent, demonstrate their interactions in the zoo itself. Dhaka Zoo wishes to foster all concerted efforts for conservation of wildlife and nature though several limitations accompany us.

Dhaka Zoo is now ambitious in aiming for a much higher standards of animal welfare and husbandry, highest possible standard of medical care, coordinated cooperation and collaboration with the other 8-9 zoos in Bangladesh, conservation management, breeding animals, and zoo marketing (National and International animal exchange). We have a newly initiated conservation education programme, even though we are still a far distance from the goals or standards we have set. Much of our inability to progress quickly is out of inherited limitations, such as no human resource development schedule and the limitation of not having the freedom of doing everything that is necessary at once. Breeding of Hoolock Gibbon *Hoolock hoolock hoolock* and the eggs of Bengal vulture, *Gyps bengalensis*, with our existing capacity demonstrates our potential capacity even if it is not yet consistent.

We hope for a good start with our plan of remodeling enclosures to naturalistic or semi naturalistic style. We have been minimally successful in motivating our media, for addressing the issues of continued reduction of our valuable component of biodiversity, over exploitation of natural resources and their impact on human life, value and vulnerability of species and ecosystem. Also we hope to encourage the media to help ease the existing social conflict on wild animal keeping in captivity by writing fairly about the potential of zoos and the problems which keep them from achieving their potential as aides to conservation in some form.

Zoo database like ARKS, ZIMS are still being talked without having significant real progress to ensure a start for this unique software initiative. Again, we are serious to bring to the political arena our intention to expedite public opinion and awareness development in favour of zoo by formulating legislation which would insure welfare for wild animals in captivity and obviously training and education for quality achievement. Internally, Dhaka Zoo, is doing well to some extent, but could progress much faster in integrating conservation by dealing and treating visitors, expediting its education and research programme better collaboration, coordination and communication, and by networking with different proactive organizations with values and ethics.

Dhaka Zoo, by this time, is organizing seminars, workshops and programmes on biological diversity. For further conceptual development, framing future activities with maximum cohesive and strategic thoughts, it yet needs more concentration, discussion and financial allocation. In order to fulfill the aims of conservation and sustainable use in any real sense (that is in the wild) provision of knowledge, skills and resource is much required.

## **Reintroduction/translocation**

Dhaka Zoo is yet to consider reintroduction and translocation as it needs carefully managed programme, extensive scientific planning, following the Reintroduction guidelines before releasing the first individual. It is still a panic word for us due to the required preconditions set out for pre-release and an expensive long term project. The problems are complex in nature, such as possible conflict with human population, ecological, social, economical and political debates, disease risk, behavioural and environmental problems, etc. Adequate research and precautions are required to combat adverse impact, so, Dhaka Zoo should not consider such ambitious activity right now. It may even generate negative impacts if animals destroy habitats and come into conflict with human beings upon release if not well planned.

## **Science and research**

A few steps on science and research have been conducted and undertaken by Dhaka Zoo i.e. organizing seminars on biodiversity, workshops on other scientific issues and scientific lectures for graduate intern students of several universities. Although only a little research work is being conducted at present, Dhaka Zoo might consider steps to foster the research work by identifying potential projects and facilities both for internal and external researchers. This will generate more collaboration with other educational institutions and projects to encourage young researchers to come up.

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### **Population Management**

Population management, when viewed scientifically and systematically, is a very big, complex and important management tool. It is easy to become frustrated when thinking of population viability of 90% for 100 years, or of the science of population management, use of population management tools (ISIS, ZIMS, REGASP), cooperative breeding programmes, confiscated and abandoned animals as breeders, metapopulation management and regulations in respect to the Dhaka Zoo. Where does Dhaka Zoo stand in this scenario? We have moderate management on feeds and feeding, optimum veterinary care, shed cleaning and herd management (hence a good number of few species out of good propagation and even some exceptional propagation are there in Dhaka Zoo). On the other hand we have no studbooks, no ISIS, ZIMS or REGASP software, no genetic diversity in almost all species. We have never thought of gene banking. We have no organized or scheduled plan outlined for any of these important tasks outlined in WZACS. We have no reversible or even irreversible contraceptive for controlling indiscriminate breeding, and thus no reproductive management existing. Therefore, we need to fix priorities on these issues in order to set out a long term future plan to take part in a good population management.

How can we say, in this situation, that we are really conserving threatened wild animals?! We should think and start materializing now from any point to become expert so that we can participate in integrated conservation. By starting studbooks, using international database software (ISIS, ZIMS, REGASP) we might make a beginning towards population management for effective conservation. Cooperative efforts may be helpful for Dhaka Zoo, plus metapopulation management plan, because potential in several dimensions are still present here.

### **Education and Training**

Dhaka Zoo is not conducting zoo education or conservation education at the level and frequency it should be. Earlier this programme practically did not exist, even lacked in keeping files or records on the activities. Now, zoo/conservation education, whatever is done, is recorded and documented as organized issue-based conservation education ready to be given to graduate interns and some post graduate students of different universities. It is a matter of aspiration that the officers and local authority are becoming enthusiastic and talking of the essence of organized zoo education which should now become incorporated in our official yearly plans and budget. We must target education policy depending on our context (both formal and free-choice) and curriculum formulation. Moreover, a rough exercise is being discussed to bring up our own staff, setting up standards, networking with International Zoo Educators Association (IZE), setting up national priorities of education topics by living exhibits, heading wildlife conservation advocacy to state concerns, electronic and printing media and obviously those who are working in *in-situ* conservation to carry out effective education programmes. WZACS mandate on the issue is surely to take action. Dhaka Zoo has enormous potential with our almost 5 million visitors per year to whom valuable information on conservation can be disseminated. Even fundraising issue might be popularized by the intended

conservation education programme. Needless to say, attractive and accurate signages are good tools for education.

### **Communication: Marketing and Public Relations**

Dhaka Zoo has enormous potential and possibilities of good communication with other zoos and can establish same with the public. For this a communication strategy integrated in nature must be formed that can resolve some conflicts and confusions existing on animal welfare and ethical issues. Current regulations are a limiting factor for this work. However, it is at least coming to our internal discussions and we are hopeful to carry out an effective communication strategy in near future.

### **Partnerships and Politics**

Conceptually, Dhaka Zoo thinks that all zoos are in the same family and wants to work together for wildlife welfare and for the conservation of biodiversity, although all zoos are not equal in standards. Dhaka Zoo always feels responsible to influence policy makers but regulations are a limiting factor here also. Nonetheless, Dhaka Zoo will foster efforts towards contributing to the conservation of biological diversity. Dhaka Zoo commits to 'Animal Embassy' a helpful step towards ISO 14001.

### **Ethics**

- Conveying credible conservation education message to the public - Dhaka Zoo is still far away from doing this activity but potentials and possibilities are there.
- Concept of species survival without compromising individual welfare - Dhaka Zoo admits it and doing it by utmost effort but not yet at desired level.
- Animal acquisition and disposition policies - Dhaka Zoo may try to carry out in absence of any local policy.
- Surplus Zoo (animal) production to minimum - Not maintained by Dhaka Zoo.
  - Considering surplus transfer to any accredited institution - Doing well.
  - Surplus releasing to semi-reserves or wild - Not possible locally, not even hope to think by Dhaka Zoo.
  - Temporarily preventing reproduction - recently started keeping bachelor herds.
  - Failing all avenues/when nothing else found feasible, euthanasia as a last resort - Started in a few cases
- Suitable environments in meeting animals' physical and psychological needs - Thinking vigorously but doing it very slowly because of practical limitations.
- Enrichment activities as a part of routine husbandry - Thinking vigorously but doing it very slowly because of practical limitations.
- Evidence-based assessments of designing new enclosure - Considering seriously and sincerely.
- High legislated standards - Started with formulating Zoo Act but yet a long journey to go.
- Continual process of critical thought and deliberation i.e., the views and the sentiments of visitors and the media.
- Human behaviour to animal - trying to directed by signage and in few cases, explaining the priority of species survival not justifying the animal suffering (Conflict situation).
- Regional/ National code of ethics - not yet formulated according to our cultural situation.
- Promoting interests of wildlife conservation, biodiversity and animal welfare to colleagues and to society at large -

started but not yet satisfactory.

- Cooperating with related agencies and the government for conserving global biodiversity, animal welfare improvement - Doing and always ready to cooperate.
- Encouraging research and disseminating achievements and result - thinking positively, doing minimum.
- Carrying out WAZA guidelines - Always forward in mind but bound to backdated administrative regulations.
- Animal exposure to a risk of injury to a visitor- Seriously taken care by Dhaka Zoo.
- Public health risk/zoonotic diseases on direct contact with visitors - Trying to minimize zoonotic diseases by prohibiting visitors direct contact with animals and by other possible ways.
- Invasive exotic animal & plant - Not yet considered in some major cases but thinking now-a-days for their potential problems to our indigenous fauna & flora.
- Acquisition of animals - Still collecting from dealers (may be from wild) but not having source (pedigree) information. It is also remaining to formulate policy.
  - Animal exchange and shift - Doing sincerely.
  - Animal loan - Not yet practiced.
- Disposal of animals- Undertakes but without policies.
- Population management - Carrying out to some extent but scattered and without following the prescribed grammar.
- Sheds making naturalistic - Dynamic thought is there but still far away from the goal.
- Release-to-the wild- Not even thought yet.
- Animal welfare on transferring- ethically maintained (Health, pregnancy, size and weight, crate cushions, watering and feeding in long distance in resting, season and time, choice of tranquilizing agent, attitude of animals) and so forth are being considered when captured and transferred.
- Health screening- before shifting and transferring animals we are used to screen animal health grossly but we feel it should be more concentrated and subjected to lab investigations Poratory (We have a very good quarantine facility but no isolation and baby care unit. Thinking positively to buildup these two important unit in the near future) as a continuous process.

#### Reference

WAZA (2005). *Building Future for Wildlife – The World Zoo and Aquarium Conservation Strategy*. Berne, Switzerland.

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#### Appendix — Acronyms

IUCN SSC Conservation Breeding Specialist Group	<b>CBSG</b>
Convention on Biological Diversity (1992)	<b>CBD</b>
Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)	<b>CITES</b>
International Species Information System	<b>ISIS</b>
International Zoo Educators Association	<b>IZE</b>
Re-introduction Specialist Group of the IUCN/SSC	<b>RSG</b>
Regional Animal Species Collection Plan	<b>EGASP</b>
The World Conservation Union (Formerly called International Union of Nature Conservation)	<b>IUCN</b>
Species Survival Commission of the IUCN	<b>SSC</b>
The world Organization for Animal Health / Organization of International Epizootics.	<b>OIE</b>
World Association of Zoos and Aquariums	<b>WAZA</b>
World Zoo and Aquarium Conservation Strategy	<b>WZACS</b>
Zoological Information Management System	<b>ZIMS</b>

#### Appendix — Glossary of Terms

- 1. Animal Embassy:** an International standard of environment responsibility with specific application to Zoos and aquariums; unites animal management and other standards with environmental criteria like those covered by ISO 14001, and is being developed by the Institute of Responsible Tourism and Loro Praque in Spain.
- 2. Biodiversity:** biological diversity- the variety of living things.
- 3. Biosecurity:** the management of deliberate or accidental unwanted animal and pest and diseases (e.g. new pests and diseases, invasive species, biological weapons).
- 4. Collection Planning:** strategic planning process carried out at an Institutional, regional or global level to prioritize species, which incorporates numerous factors, such as conservation status, taxonomic uniqueness, education value and availability.
- 5. Contraceptive:** agent or device intended to prevent conception or pregnancy by interfering with the processes of ovulation, fertilization or implantation.
- 6. Demographics:** study of factors that affects a population, such as birth and death rates.
- 7. Demographic management:** management of population by using demographic factors.
- 8. Demographic reservoir:** pool of individuals (usually in a regional breeding program) which represents a 'safety net to increase numbers and potential breeders of a species with a reduced wild population.
- 9. Demographic stability:** stable age distribution often measured by ability of a population to resist environmental disturbance by return to this equilibrium state; management of a breeding program to maintain it within the carrying capacity of participating institutions.
- 10. Ecosystem:** a dynamic complex of plant, animal and micro-organism communities and their non-living environment acting as a functional unit (e.g. rainforest, coral reef).
- 11. Ecotourism:** a tourism market based on an area's natural resources that attempts to minimize ecological impact (e.g. whale watching, trekking).

**12. Emerging diseases:** new or previously unrecognized bacterial, fungal, viral and parasitic diseases.

**13. Endemic:** species native to and restricted to a particular geographic area.

**14. Environmental footprint:** often called ecological footprint- measures of how much productive land and sea is required to provide the resources used in everyday living, including calculations of emissions produced from fuel burnt and land needed to process waste.

**15. Environmental Management System:** a continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its business goals.

**16. Environmental responsibility:** using resources in an environmentally responsible and sustainable manner.

**17. Euthanasia:** the act of putting painlessly to death.

**18. Ex situ:** away from a species' normal habitat (e.g. animal in a collection, plant in a seed store).

**19. Formal education:** education through education institutions with formalized curricula.

**20. Founder stock:** individuals drawn from a source population who contribute genetically to the derived subpopulation (e.g. in a breeding program usually wild-caught individuals who have produced surviving offspring).

**21. Genetic adaptation:** process of natural selection whereby individuals increase in fitness within a particular environment.

**22. Genetic reinforcement:** the introduction new genetic material or individuals into a population; usually done to increase genetic diversity in small, isolated, possibly inbred populations.

**23. Genome bank:** often called gene bank – an archive of genetic information from (often endangered) species, from a variety of biological samples, especially gametes (oocytes and sperm).

**24. Habitat fragmentation:** clearing or degradation of native vegetation where once continuous areas are split into isolated pieces; these may only support reduced populations and suffer from edge effects and changed microclimates.

**25. Health screening:** ongoing evaluation of health status; may involve clinical exam, haematology, parasitology, etc.

**26. Hotspot:** region harbouring great diversity of endemic species yet also heavily impacted by human activities; used as a way of establishing conservation priorities.

**27. Inbreeding:** mating among related individuals.

**28. Informal education:** self-directed (free choice) learning (e.g. through talks, sign boards, exhibits).

**29. In situ:** in a species' usual wild habitat.

**30. ISO 14001:** international standards on environmental management, providing a framework for the development of an environmental management system, conformance and compliance with environmental policies and practices, and external audit.

**31. Invasive species:** a species that competes with native species for space and resource; usually exotic or introduced but native invasive species also exist.

**32. Meta population management:** management of a group of partially isolated populations of the same species (e.g. may involve exchange of individuals or genes between wild and collection populations).

**33. Molecular genetics:** branch of genetics concerned with the structure and function of genes (e.g. how a gene is copied with, how a mutation arises, and how genetic information is translated into the phenotype).

**34. Pedigree:** a chart specifying lines of descent and relationships of individuals.

**35. Reintroduction:** an attempt to re-establish a taxon in an area which was once part of its historical range, but from which it has been extirpated or become extinct, often using individuals from collections.

**36. Studbook:** detailed records of births, deaths and genetic relationships and other biological data which when analyzed allow management of a population.

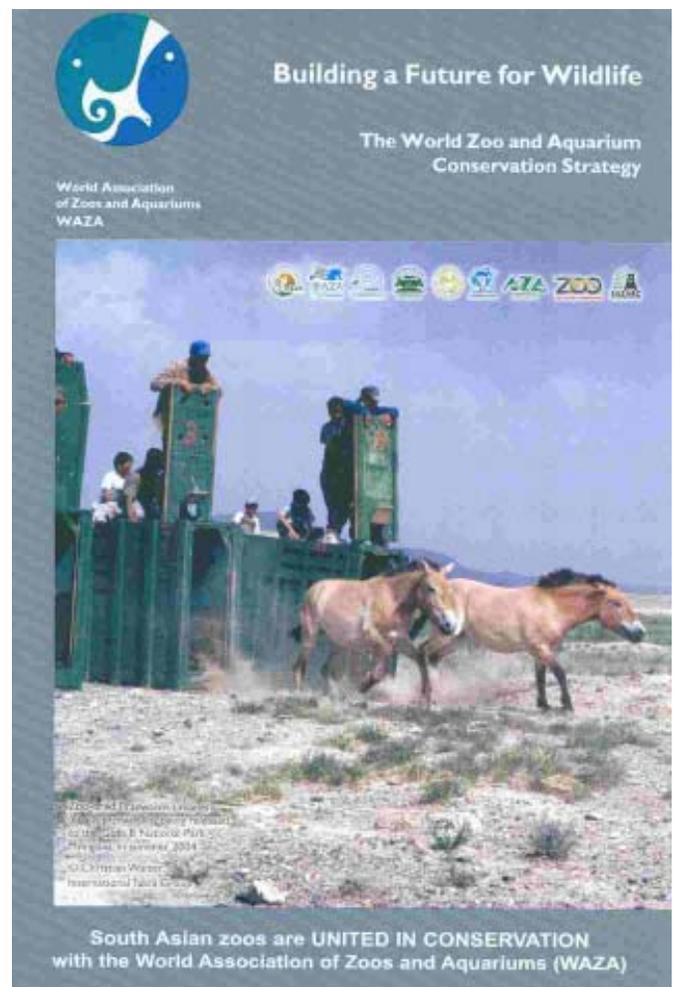
**37. Sustainability:** the concept of meeting the needs of the present without compromising the ability of future generation to meet their needs; in conservation terms, it refers to the use of a natural resource in a way whereby it can be renewed, such that the environment's natural qualities are maintained.

**38. Taxon:** a group of organisms of any taxonomic rank, such as species, genus, or sub specific division.

**39. Taxonomy:** the science of classifying and naming organisms.

**40. Translocation:** deliberate movement of wild animals from one part of their range to another.

**41. Zoonotic disease:** disease caused by infectious agents that can be transmitted between, or are shared by, animals and humans.



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