

EAZA

Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria



2006

European Association of Zoos and Aquaria

Update of the EAZA Standards for Accommodation and Care of Wild Animals in Zoos (1994)

- Approved by EAZA Council on 23 April 2006 -

Introduction

These standards are based on present knowledge and practice for the accommodation and care of animals in zoos and aquaria.

In this Annex the following definitions shall apply:

1. **Zoos and aquaria** shall refer to all establishments open to and administered for the public to promote nature conservation and to provide education, information and recreation through the presentation and conservation of wildlife. This definition shall include zoos, animal parks, safari parks, bird gardens, dolphinariums, aquaria and specialist collections such as butterfly houses as defined in article 2 of Council Directive 1999/22/EC of 29 March 1999.

Zoos and aquaria situated in EU countries are requested to have a valid license under Council Directive 1999/22/EC of 29 March 1999. All others need valid licenses to operate, if these exist. The dates and/or numbers of these licenses have to be registered with the EAZA Executive Office;

2. **Animals** shall refer to all species of the animal kingdom including species of the classes Mammalia, Aves, Reptilia, Amphibia, Pisces, groups of Invertebrata;
3. **Welfare** shall refer to the physical, behavioral and social well-being of animals through the provision of appropriate conditions for the species involved, including but not necessarily limited to housing, environment, diet, medical care and social contact where applicable;
4. **Enclosure** means any accommodation provided for animals in zoos and aquaria;
5. **Enclosure barrier** means a barrier to contain an animal within an enclosure;
6. **Stand-off barrier** means a physical barrier set back from the outer edge of an enclosure barrier designed to prevent public access to the latter;
7. **Hazardous animals** means any representative of the groups or species listed in Annex I and any other animal which, because of its individual disposition, sexual cycle, maternal instincts, or for any other reason, whether by biting, scratching, butting, compression, injecting venom or by any other method, is likely to injure seriously or transmit disease to humans;
8. **Dangerous carnivores** means all members of the genera *Panthera*, *Acinonyx*, *Lynx* and *Neofelis*, the families Ursidae and Hyaenidae, *Canis lupus*, *Canis rufus* and *Lycaon pictus*.

The Standards

ANIMAL CARE - WELFARE, HEALTH AND HYGIENE

Routine observation of the animals

1. The condition and health of all animals in the zoo to be checked daily by the persons in charge of their care for that particular day.
2. Any animals which are noted to be unduly stressed, sick or injured to receive immediate attention and, where necessary, treatment.

Accommodation - Space, Exercise and Grouping

3. Animals to be provided with an environment, space and furniture sufficient to allow such exercise as is needed for the welfare of the particular species.
4. Enclosures to be of sufficient size and animals to be so managed -
 - a. to avoid animals within herds or groups being unduly dominated by individuals;
 - b. to avoid the risk of persistent and unresolved conflict between herd or group members or between different species in mixed exhibits;
 - c. to ensure that the physical carrying capacity of the enclosure is not over-burdened;
 - d. to prevent an unacceptable build-up of parasites and other pathogens.
5. Animals not to be unnaturally provoked for the benefit of the viewing public.
6. Animals in visibly adjoining enclosures to be those which do not interact in an excessively stressful way.
7. Separate accommodation for pregnant animals and animals with young to be available, if necessary, in the interests of avoiding unnecessary stress or suffering.
8. Provide appropriate accommodation for animals being temporarily separated from a group.

Accommodation - Comfort and Well-being

9. The temperature, humidity, ventilation and lighting of enclosures to be suitable for the comfort and well-being of the particular species of animal at all times, and in particular -
 - a. consideration to be given to the special needs of pregnant and newly-born animals;
 - b. newly-arrived imported animals to be fully acclimatized bearing in mind that this may be only a gradual process;

- c. tanks for fish and aquatic invertebrates to be adequately oxygenated, and appropriate water quality to be provided.
10. Animals in outdoor enclosures to be provided with sufficient shelter from inclement weather or excessive sunlight where this is necessary for their comfort and well-being.

Furnishings within Enclosures

11. Animal enclosures to be furnished, in accordance with the needs of the species in question, with such items as bedding material, perching, vegetation, burrows, nesting boxes and pools.
12. Provide appropriate environmental and behavioral enrichment.

Prevention of Stress or Harm to Animals

13. Enclosures and barriers to enclosures to be maintained in a condition which presents no likelihood of harm to animals, and in particular -
- a. any defect noted in an animal barrier or in any appliances or equipment within animal enclosures to be repaired or replaced without delay;
 - b. any defect likely to cause harm to animals to be rectified at once or, if this is not possible, the animals to be removed from the possibility of any contact with the source of the danger;
 - c. any vegetation capable of harming animals to be kept out of reach.
14. All plants and fixed equipment, including electrical apparatus, to be installed in such a way that it does not present a hazard to animals and its safe operation cannot be disrupted by them.
15. Rubbish in animal enclosures to be cleared regularly to avoid any possibility of harm to animals.
16. Trees within or near animal enclosures to be regularly inspected and lopped or felled as appropriate to reduce the risk of animals being harmed by falling branches or using trees as a means to escape.
17. Smoking is prohibited in animal enclosures, in parts of buildings where animals enclosures are located and in areas where food is stored or prepared.
18. Animals to be handled only by, or under the supervision of, competent trained authorised staff; and this to be done with care, in a way which will avoid unnecessary discomfort, behavioral stress or actual physical harm to animals.
19. Any direct physical contact between animals and the visiting public only to be under the control of zoo staff and for periods of time and under conditions consistent with the animals welfare and not leading to their discomfort.

Food and Drink

20. Food and drink provided for animals to be of the nutritive value and quantity required for the particular species and for individual animals within each species, bearing in mind the condition, size and age of each animal; the need to allow for special circumstances (e.g. fast days or longer periods of fast or hibernation) and special diets for certain animals (e.g. animals undergoing a course of veterinary treatment, or pregnant animals).
21. Veterinary or other specialist advice to be obtained and followed concerning all aspects of nutrition.
22. Supplies of food and drink to be stored, prepared and offered to the animals under hygienic conditions.
23. Natural behavior of the animals, particularly social aspects to be considered when offering food and drink, and feeding and drinking receptacles if used, to be placed so as to be accessible to every animal kept within a particular enclosure.
24. Uncontrolled feeding by visitors is not permitted. Where feeding is permitted it should be on a selective basis only with suitable food provided and approved by the management.

Sanitation and control of disease

25. Proper standards of hygiene, both in respect of the personal hygiene of the staff and that of the animal enclosures and treatment rooms, to be maintained, and in particular -
 - a. special attention to be given to the cleaning of animal enclosures and equipment within them, to reduce the risk of disease or disease transfer, including in the case of aquatic animals, regular monitoring of water quality;
 - b. non-toxic cleaning agents to be readily available, along with supplies of water and the means to apply them;
 - c. veterinary advice to be obtained and followed regarding all cleaning and sanitation requirements of enclosures or other areas following identification of an infectious disease in any animal.
26. The drainage of all enclosures to be capable of removing efficiently all excess water.
27. Any open drains, other than those carrying potable water, to be outside the areas to which animals have access.
28. Refuse material to be regularly removed and disposed of.
29. A safe and effective programme for the control of pests and, where necessary, predators to be established and maintained throughout the institution. It is also requested that animals must not escape from the zoo or aquarium, and create an ecological threat for native wild species.

30. Keeper staff to be instructed to report immediately if they have contracted or are in contact with any infection which they have reason to believe could be transmitted to, and adversely affect the health of, any animal; and management then to take appropriate action.
31. Keeper staff to be instructed to report in confidence any other disability which might affect their capacity to manage the animals in a safe and competent manner; and management then to take appropriate action.

ANIMAL CARE - VETERINARY ASPECTS

32. Arrangements to be made for routine veterinary attendance. In case of fishes and invertebrates, other specialist attendance is also acceptable. This also applies to all other references to veterinary aspects in fishes and invertebrates in this document.
33. A programme of veterinary care to be established and maintained under the supervision of a veterinary surgeon or practitioner.
34. Routine examinations, including parasite checks, to be carried out and preventive medicine, including vaccination, to be administered at such intervals as may be recommended by a veterinary surgeon or practitioner.
35. Where a full veterinary service is located at the institution, the facilities to include: an examination table; a range of basic surgical instruments; anesthetic facilities; basic diagnostic instruments; sufficient power points to take light and other electrical fittings; facilities, where appropriate, to take blood and other samples and to prepare and dispatch them; and a comprehensive range of drugs.
36. Where a full veterinary service is not available at the institution, a treatment room to be provided at the premises for use where appropriate for the undertaking of routine examination of animals in clean, ventilated surroundings.
37. A room or rooms to be provided for the care of unduly distressed, sick and injured animals and facilities for hand-rearing and nursing animals.
38. Facilities to be available for collecting, restraining and, if necessary, for administering a general anesthetic, for euthanasing animals and for the after-care of animals recovering from sedation.
39. Reserve accommodation to be available, away from other animals, for the isolation and examination of newly-arrived animals, under quarantine restrictions (conditions) where necessary.
40. Newly-arrived animals to be kept isolated as long as is necessary to ensure proper examination before introduction to other animals in the collection.
41. Particular attention to be paid to hygiene in the quarters where isolated or quarantined animals are kept.

42. Where practicable, protective clothing and utensils used by staff in the isolation area should be used, cleaned and stored only in that area.
43. All animal drugs, vaccines and other restricted veterinary products to be kept safely under lock and key with access by authorised persons only.
44. Except under the direction of a veterinary surgeon or practitioner, members of the staff of the zoo not to possess or administer controlled drugs.
45. Zoo management to seek agreement with the consulting local veterinary adviser regarding the desirability of either the zoo or aquarium, a local hospital or the veterinary surgeon or practitioner himself, of holding supplies of antidotes to potentially toxic veterinary products used at the institution.
46. All unwanted, contaminated veterinary equipment to be disposed of safely and following relevant legislative prescriptions.

POST-MORTEM FACILITIES

47. Dead animals to be handled in a way which avoids the risk of any transmission of infection.
48. The cause of death for each animal dying in the collection to be established where reasonable and practicable to do so, including, in the majority of cases, the examination of carcasses by a veterinary surgeon or a practitioner or a pathologist with relevant experience and training.
49. Where animal carcasses cannot be quickly removed to a professional veterinary laboratory centre outside the premises, facilities should be provided for conducting post-mortem examinations and the processing of samples resulting from them in a safe and hygienic manner. If immediate post-mortem examination is not possible, then in consultation with the veterinary surgeon or practitioner, refrigerated facilities or a deep freeze for storage to be provided pending the removal in a suitable insulated container to a post-mortem laboratory.
50. Facilities and equipment in any room provided on the premises for post-mortem examinations to include: an efficient drainage system; washable floors and walls; an examination table; an adequate selection of appropriate instruments; facilities for taking and preserving specimens; and, if larger animals are kept in the collection, a hoist.
51. Following post-mortem examinations conducted on the zoo premises, carcasses and organs to be removed swiftly and disposed of safely.

SAFETY AND SECURITY

General provisions

52. Local safety and security legislation regarding zoos and aquaria must be applied.

Enclosures

53. Other than when elsewhere in the control of authorised staff, animals kept for exhibition in the zoo to be kept at all times in enclosures or, in the case of free-running non-hazardous animals, within the perimeter of the zoo.

Enclosure barriers

54. Enclosure barriers to be designed, constructed and maintained to contain animals within the desired enclosures.

Stand-off Barriers

55. Where direct contact would be possible between visitors and hazardous animals through or over any enclosure barrier, to the extent that such an animal would be capable of causing injury, a stand-off barrier to be provided sufficiently far back to prevent such contact.

Perimeter Boundaries

56. The perimeter boundary, including access points, to be designed, constructed and maintained to discourage unauthorised entry and, so far as is reasonably practicable, as an aid to the confinement of all the animals within the perimeter of the institution.
57. No perimeter barrier to include any electrical section less than 2 metres from the ground, except in those cases where it also serves as a normal animal barrier and cannot be reached by the visiting public.

Warning Signs

58. In addition to a stand-off barrier, an adequate number of clearly visible safety signs to be displayed at each enclosure where there may be significant danger, including electric fences.

Exits

59. Sufficient exits from the zoo or aquarium to be provided, having regard to the size of the institution and the number of visitors anticipated at any time who may need to leave quickly in an emergency.
60. Exits to be clearly signposted and marked.
61. Each exit from the zoo or aquarium to be kept clear and to be capable of being easily opened from inside to allow the release of persons from the institution. All such gates to be capable of being closed and secured to discourage the escape of animals.

Drive-Through Enclosures

62. Unless there is stricter local legislation, this chapter will be applied to drive-through enclosures.

63. Where dangerous carnivores are kept in drive-through enclosures, entry and exit to such enclosures to be through a system of double gates, with sufficient space between to allow the gates to be securely closed to the front and rear of any vehicle which may enter or need to enter the enclosures.
64. In the case of dangerous carnivores the access gates to be protected by fencing positioned at right angles to the perimeter fence on each side of the roadway with the enclosure, and of the same standard as that for the main enclosure barrier and extending back from the access for a distance of at least 25 metres.
65. Double gates to be designed and maintained so that, where hazardous animals are within or have access to the enclosure secured by the gates, one gate cannot be opened until the other has securely closed - though, provided no danger to the public is thereby caused, provision may be made for this arrangement to be overridden in the event of an emergency arising.
66. For other hazardous animals, except those grazing or hooved animals where a cattle grid would be sufficient to contain them, single entry/exit gates, supervised at all times, to be provided.
67. Access points between enclosures to be controlled to prevent animals entering adjoining enclosures.
68. Electrified pressure pads, where used, to be designed and installed to ensure that in the event of their failure, any gate they control will close automatically or otherwise operate to ensure that animals are safely secured within their enclosure.
69. Gates which are mechanically-operated to have an alternative method of control whereby they can be opened and closed manually in the event of an interruption of the power supply or other emergency and to be designed to close automatically when subject to power failure.
70. Operators of mechanically-operated gates to have a clear, unobstructed view of the gates under their control and of the area within the vicinity of those gates.
71. A one-way road system to be used to assist the traffic flow and thus reduce the risk of accidents.
72. Stopping to be permitted only at places where the road is at least 6 metres wide.
73. Where dangerous carnivores and primates and (except where the enclosure is supervised by competent staff in a manner which prevents any danger to the public) any other hazardous wild animal are kept:
 - a. no vehicle to be allowed access unless a rescue vehicle capable of effecting its recovery is immediately available;
 - b. access to vehicles without a solid roof to be prohibited at all times;
 - c. notices, which are readily visible and easy to read, to be displayed to warn visitors whilst in the enclosure to:

- I. Stay in vehicle at all times;
 - II. Keep all vehicle doors locked;
 - III. Keep vehicle windows and sun-roof closed;
 - IV. Sound the horn or flash the headlights and await the arrival of a rescue vehicle if they break down.
74. Continuous observation to be maintained over the entire area of each enclosure containing any hazardous animal.
75. The staff member in overall control of supervision to be armed with an appropriate firearm and to be trained in its use so that a hazardous animal can be killed in an emergency if this will save human life or injury.

Removal of animals from enclosures

76. Hazardous animals not to be allowed out of their usual enclosures for the purpose of direct contact with the public, except, where the zoo operator is satisfied that such animals are not, when under control, likely to cause injury or transmit disease.
77. Where hazardous animals are allowed out of their usual enclosures an authorised and experienced member of the staff to accompany each animal.
78. Zoo operators to exercise caution and discretion in the case of the removal of non-hazardous animals since the behaviour of all animals may be less predictable when away from their usual enclosures.
79. Precautions to be taken to avoid injury to visitors when animals are used for rides.

Escape of animals from their enclosures

80. Zoo operators to assess whether any danger may arise in the event of an animal escaping from its enclosure, and to consider the possible or likely attempted escape route within and from the institution if this were to happen.
81. In the case of the escape of animals emergency plans must be available and fully understood and practised by all staff.
82. This emergency plan should include a member of staff to be readily available at all times to take decisions regarding escaped animals, including the use of firearms if needed.
83. Every employee with tasks under the emergency procedures to undergo periodic refresher training and practice.

Safety of access for the public

84. Buildings, structures and areas to which the public has access to be maintained in safe condition.
85. Trees within areas where visitors are likely to be walking or sitting to be regularly inspected and lopped or felled as appropriate to avoid visitors being harmed by falling branches etc.
86. Warning to be given of all edges where a person might fall, including into water; and, where necessary, such edges to be guarded by a barrier which would be capable of restraining children from falling.
87. Each walkway over an animal enclosure to be designed, constructed and maintained to withstand safely the weight of the maximum of adults who could use it at any time; and maintained, sited or protected so as to withstand any contact by hazardous animals and prevent contact between such animals and visitors.
88. The visiting public not to be allowed to enter any buildings or other areas of the zoo premises which could present an unreasonable risk to their health and safety.
89. Any buildings to which visitors are not allowed on the grounds referred to above, to be kept locked and warning notices to be displayed to indicate that access is both unsafe for, and not permitted to, the public.
90. Other areas to be clearly defined, e.g. by means of barriers and similar warning notices, or by suitable notices together with road markings where frequent access is necessary for vehicles operated by zoo staff along roadways to which the public are not admitted.

Emergency First-Aid

91. First-aid equipment and written first-aid instructions to be readily accessible on the premises.
92. Where venomous animals are kept, the appropriate and up-to-date anti-venom to be held at the zoo or a local hospital or within a reasonable time frame ensuring the safety of staff and visitors, and kept in accordance with the manufacturers instructions.
93. Written instructions to be provided for staff on the procedure to be followed in the event of an incident involving any venomous animal and a visitor or another staff member. These instructions to include:
 - a. immediate action to be taken in respect of the patient and;
 - b. required information on a pre-prepared form for forwarding to the local hospital which would include:
 - I. the nature of the bite or sting and the species inflicting it;
 - II. the specification, for cross-reference purposes, of the anti-venom which accompanies the patient;

- III. the telephone number of the nearest poisons centre;
- IV. the telephone number of the institution.

MISCELLANEOUS

Insurance against liability for damage or injury caused by animals

- 94. Zoo operators to hold a current liability insurance policy or other legal arrangements which indemnifies them and every other person under a contract of service or acting on their behalf, against liability for any damage or injury which may be caused by any of the animals, whether inside or outside the zoo, including movement by vehicle. Any upper limit on the sum involved which is included in the terms of such insurance to be set at an adequate and realistic level.

Stock records

- 95. Records to be kept by means of an established record system and maintained of all individually recognisable animals and groups of animals in the zoo.
- 96. Where animals are disposed of or die, the records to be kept.
- 97. The records to be kept in either a card index system or on a computer using the ARKS software, or other type of retrieval system by means of which information can be quickly examined.
- 98. The records should provide the following information -
 - a. the correct identification and scientific name;
 - b. the origin (i.e. whether wild or captive born, including identification of parents, where known, and previous location/s, if any);
 - c. the dates of entry into, and disposal from, the collection and to whom;
 - d. the date, or estimated date, of birth;
 - e. the sex of the animals (where known);
 - f. any distinctive markings, including tattoo or freeze brands etc.;
 - g. clinical data, including details of and dates when drugs, injections, and any other forms of treatment were given, and details of the health of the animal;
 - h. the date of death and the result of any post-mortem examination;
 - i. the reason, where an escape has taken place, or damage or injury has been caused to, or by, an animal to persons or property, for such escape, damage or injury and a summary of remedial measures taken to prevent recurrence of such incidents.

99. In addition to the individual records, an annual stocklist of all animals to be kept preferably in the form given below. (Estimated numbers should be available for all fish and invertebrate species).

1. Common and scientific names of the species
2. Total in the collection at 1 January
3. Number of arrivals into the collection from all sources during the year
4. Number of births into the collection during the year
5. Number which died within 30 days of birth
6. Number which died older than 30 days after birth/hatching
7. Number departed collection, including sales, breeding loans, etc.
8. Total remaining in the collection at 31 December

This record, giving details of male/female/unsexed animals as appropriate, to be set out in columns for ease of compilation and reference, e.g.:

Common name	Scientific name	Group 1-1-05	Arrive	Born	Neo-natal death	Death	Depart	Group 31-12-05
Bennett's wallaby	<i>Macropus rufogriseus</i>	5.11.0	1.0	1.1.8	1.0.3	1.2.0	1.1	4.9.5

All records can be kept in the local language or in the English language (in order to facilitate the international exchange of information and cooperation).

100. Surplus animal stock only to be passed on to responsible persons who have the appropriate facilities and expertise (cf also EAZA Code of Ethics).

Transportation and Movement of Live Animals

101. Facilities suitable for hoisting, crating and transportation of all the kinds of animals kept within the zoo, to destinations both inside and outside the zoo, to be available if not kept at the zoo.

102. Any animal taken outside the zoo to be in the personal possession of the operator of the zoo, or of competent persons acting on his behalf, and adequate provision to be made for its safety and well-being at all times.

103. Any hazardous animal taken outside the zoo to be kept securely at all times. Such animal to be kept away from direct contact with persons other than the zoo operator or competent persons acting on his behalf, except where the zoo operator is satisfied that it is not likely, when under control, to cause injury or transmit disease.

Annex I to the EAZA Standards for the Accommodation and Care of Animal in Zoos and Aquaria

List of dangerous and hazardous animals in zoos and aquaria

Preface:

- This list applies only to non-domestic animals kept under zoo-, aquarium or safaripark conditions;
- The animals mentioned can do harm to their keepers or to the public due to their physical strength, specific weapons including poison, and behaviour;
- Some animals mentioned are dangerous only during the breeding season;
- Some animals mentioned can - under exceptional circumstances (including hand-rearing) and subject to unprofessional handling - in some cases be hazardous;
- Dangerous carnivores are those mentioned with an asterisk (*).

Schedule

Mammalia (Mammals)

<u>Scientific name</u>	<u>Common name or names</u>
<u>Marsupialia</u>	<u>Marsupials</u>
Macropodidae of the species <i>Macropus rufus</i> and <i>M. fuliginosus</i> and <i>M. robustus</i>	Kangaroos (large males of Red and Grey kangaroos and Wallaroos)
<u>Primates</u>	<u>Primates</u>
Pongidae	Apes (adults)
Hylobatidae	Gibbons (adults)
Cercopithecidae	Leaf eating monkeys (males) Macaques (except <i>Macaca sylvana</i> ; adult males) Baboons (including <i>Mandrillus ssp.</i> ; adult males) Mangabeys (adult males) Guenons (adult males)
Cebidae	Woolly monkeys (adult males) Spider monkey (adult males) Capuchin monkeys (adult males) Howler monkeys (adult males)
<u>Carnivora</u>	<u>Carnivores</u>
Ursidae*	Bears*
<i>Ailuropoda melanoleuca</i>	Giant panda
Canidae* (only <i>Canis lupus</i> , <i>C. rufus</i> , <i>Lycaon pictus</i>)	Dogs* (only Wolves, Red wolf and African wild dog)
Mustelidae (<i>Mellivora spp.</i> , <i>Gulo spp.</i>)	Martens (only Ratel and Wolverine)
Hyaeonidae (except <i>Proteles sp.</i>)	Hyaenas (except Aardwolf)
<i>Crocuta crocuta</i> *	Spotted hyaena*

Felidae: all <i>Panthera</i> spp.	Cats (all large species, Lion*, Tiger*, Jaguar*, Leopard*, Snow leopard*, Clouded leopard, Puma and Lynx)
<u>Pinnipedia</u>	<u>Pinnipeds</u>
Otariidae	Eared seals (adult males)
<i>Odebenus</i> spp.	Walrus
<i>Mirounga</i> spp. and <i>Hydrurga leptonyx</i>	Elephant and Leopard seals
<i>Halichoerus grypus</i>	Grey seal (adult males)
<u>Cetacea</u>	<u>Cetaceans</u>
<i>Orcinus orca</i>	Killer whale
<u>Proboscidea</u>	<u>Elephants</u>
Elephantidae	All African and Asiatic elephants Of over two years of age
<u>Perissodactyla</u>	<u>Odd-toed Ungulates</u>
Equidae	Wild horses, Asses and Zebras (adult stallions)
Rhinocerotidae	Rhinoceros
Tapiridae	Tapirs (adult males)
<u>Artiodactyla</u>	<u>Even-toed Ungulates</u>
Suidae, Tayassuidae	Swine (all adult individuals)
Hippopotamidae	Hippopotamus (River- and Pygmy hippo)
Camelidae	Camels (males of the Old World Camels during the rut, occasionally males of the New World camels)
Cervidae	Deer
<i>Alces</i> spp.	Moose, all adults
<i>Elaphurus davidianus</i>	Père David´s Deer, Wapiti
<i>Cervus</i> spp.	Red deer, Sika deer, Sambar and other <i>Cervus</i> species (males during the rut)
<i>Rangifer</i> spp.	Reindeer (males during rut)
<i>Capreolus</i> spp.	Roe deer (hand-reared males) all hand-reared males of Cervidae during the rut
<i>Giraffidae</i>	Giraffes and Okapis
Bovidae	Cattle, Sheep, Goats, Antelopes, etc.
<i>Boselaphus tragocamelus</i>	Nilgai (males)
<i>Taurotragus</i> spp.	Eland and Giant eland (males)
<i>Hippotragus</i> spp.	Roan and Sable antelopes
<i>Oryx</i> spp.	Oryx (all species)
<i>Addax nasomaculatus</i>	Addax (males)

Kobus spp.
Connochaetes spp.
Alcelaphus spp.
Bison spp., *Bos* spp., *Bubalus* spp.
Syncerus spp.
Ovibos spp.
Budorcas spp.
Caprini

Waterbucks (males)
Wildebeest (all species)
Hartebeest (all species)
Cattle (all wild species)

Muskoxen
Takins (males)
Goats and sheep (all males of wild species during the rut)

Aves (Birds)

Struthioniformes

Struthio camelus
Dromaius novaehollandiae
Casuaris spp.
Rhea americana, *Pterocnemia pennata*

Ratites

Ostrich
Emu (in breeding season only)
Cassowaries
Rheas (in breeding season only)

Ciconiiformes

Ardea goliath

Ephippiorhynchus senegalensis, *Ephippiorhynchus asiaticus*, *Leptoptilos* spp.

Storks and Herons

Goliath heron
(not to be kept in walk-through aviaries)
Saddle billed stork, Black-necked stork, Marabus
(not to be kept in walk-through aviaries or behind low fences)

Gruiformes

Gruidae

Cranes

Cranes (can be dangerous during breeding season)

Falconiformes

Birds of Prey

Large birds of prey, some can be dangerous (e.g. *Harpia harpyja*) and attack intruders of their aviary in breeding season (not to be kept in walk-through aviaries)

Tame individuals used for falconry do not fall under the category dangerous

Strigiformes

Large owls

Some of the large owls attack intruders of their aviaries during breeding-season (not to be kept in walk-through aviaries)

Bucerotidae

Bucorvus spp.

Hornbills

Ground hornbills, some individuals attack people (not to be kept in walk-through aviaries)

Reptilia (Reptiles)

Crocodylia

Alligatoridae, Crocodylidae, Gavialidae (> 1,50 m)

Crocodiles

Alligators, Crocodiles and Gavials > 1,50 length

Sauria

Helodermatidae

Varanidae, only *Varanus komodoensis*,
V. varius, *V. niloticus* and *V. salvator* (> 1,50 m)

Lizards

Gila monster and Beaded lizard
Monitor lizards > 1,50 m length

Serpentes

Boidae (> 3 m)

Colubridae, only *Dispolidus typus* and
Thelotornis kirtlandii

Elapidae, Hydrophiidae, Viperidae and
Crotalidae

Snakes

Giant snakes (Boidae of over 3 m length)
Colubrid snakes (only the
poisonous species)
Poisonous snakes

Testudines

Macrolemmys temminckii
Chelydra serpentina

Turtles

Alligator snapping turtle
Common snapping turtle

Amphibia (Amphibians)

Dendrobates spp (only wild caught animals)

Phylllobates spp. (only wild caught animals)

Poison arrow frogs

Poison arrow frogs

Pisces (Fishes)

Chondrichthyes

Myliobatidae and Dasyalidae

Torpedinidae

Carcharhinidae and Sphyrnidae

Cartilaginous fishes

Stingrays

Electric rays

Larger pelagic sharks

Osteichthyes

Scorpaenidae: *Synanceia* sp.,

Inimicus sp. and *Pterois* sp.

Scorpaenid fish

Trachinidae

Uranoscopidae: *Uranoscopus* sp.

Muraenidae

Conger conger (large specimens)

Electrophoridae: *Electrophorus* sp.

Siganidae

Weevers

Stargazers

Moray eels - only large species

Conger eel > 1,50 m

Electric eel

Rabbit fishes

Invertebrata (Invertebrates)

Arthropoda

Orthognata and Scorpiones

Arthropods

Spiders and Scorpions (certain species only)

Mollusca

Conidae

Cephalopoda: *Hapalochlaena maculosa*

Molluscs

Cone shells (certain species only)

Cuttlefish: Blue ringed octopus