ABTA ANIMAL WELFARE GUIDELINES

Overview manual

ABTA
The Travel Association

Introduction

Animal attractions and experiences are now a common part of many holidays, but while they are undoubtedly popular, customers want to be assured of good animal welfare standards. A 2017 ComRes survey found that 71% of respondents would be more likely to buy from a travel company that cares for animals. Animal welfare is a complex area as different species have different requirements.

When travel providers and suppliers work together, visitors can have meaningful, rewarding experiences and standards of animal welfare and customer health and safety can be upheld. This approach can achieve longer-term business success, raise welfare standards across the industry and strengthen the partnerships that exist between travel providers and animal-related attractions.

The 2019 edition of the *ABTA Animal Welfare Guidelines* set out basic welfare requirements and unacceptable practices. The guidelines have been developed in consultation with a broad range of experts across NGOs, academia and industry.

By working together, the standard of animal welfare across the tourism industry can be improved.

Nikki White
Director of Destinations & Sustainability
ABTA

ABTA
The Travel Association

Intended use of this guidance

ABTA's role is to provide advice, guidance and tools to its Members to support them to implement approaches that respect animal welfare. Implementation of the guidelines is voluntary.

This guidance and its supporting manuals are intended to be practical guides for travel providers to issue to their suppliers, for tourist boards in destinations, for destination governments and ultimately and most importantly, for animal attraction and experience suppliers.

They consolidate an abundance of existing guidance. They are by no means intended to be the definitive source of information about managing animal welfare considerations. We recognise that there is a great deal of variation in available standards around the world and that for many businesses the manuals will contain commonly known information, but for others they will likely serve as a useful reference regarding animal welfare. In all instances of uncertainty, we encourage suppliers to seek further advice from a suitably qualified individual or organisation.

Guidance manual summary

The *Overview manual* provides an introduction to animal welfare and an overview of good practice that is applicable to businesses and attractions within the tourism industry involving animals.

It covers:

- An insight into the different ways in which animals and tourism are linked
- Basic welfare requirements and unacceptable practices
- Advice on developing an animal welfare approach
- An overview of the range of issues relevant to animals in tourism
- Animal husbandry tables which describe specific welfare needs of commonly managed species.

SUPPORTING MANUALS

In addition, supporting manuals cover a variety of activities commonly encountered through tourism. These manuals are intended to guide suppliers to achieve the basic welfare requirements for each of the specific activity types, and highlight additional welfare improvements. They should be read in conjunction with the *Overview manual*.

Supporting manuals are available for:

- Animals in Captive Environments
- Elephants in Captive Environments
- Wildlife Viewing
- Working Animals
- Unacceptable Practices

The manual for cetacea in captivity is under review.

Authorship

The *ABTA Animal Welfare Guidelines* have been developed through a multi-stakeholder consultation process involving industry experts, scientists, zoologist organisations, associations and non-governmental organisations (NGOs) from around the world. A list of stakeholders is included in Appendix 7. It is important to point out that the content of these manuals does not necessarily reflect the exact views of the listed individuals or organisations. All stakeholders have, however, seen merit in these guidance manuals and provided invaluable input during the consultation. ABTA extends its appreciation to all the stakeholders for their contributions.

SECTION 1

Managing animal welfare in tourism

Viewing wildlife from a distance.

Opportunities to view or interact with animals are commonly offered in tourism destinations around the world, and are popular with many holidaymakers.

Animal attractions linked to tourism have the potential to offer authentic experiences that enhance the appeal of destinations. Aside from the enjoyment factor for tourists, these attractions can play a vital role in improving education around biodiversity, enhancing species protection and aiding conservation. They are also a major contributor to economies and provide employment opportunities around the world. As the number of activities involving animals in tourism has grown, so too has the scientific knowledge of the potential impacts of interaction with tourists on animals' welfare. It is clear that animal attractions require a carefully managed approach to safeguard animal welfare.

Tourist viewing elephants eat from feeding tubes.

The business case for safeguarding animal welfare

Travel provider Members of ABTA's Animal Welfare Group analysed the rapid growth of animal attractions and animal interaction experiences within their supply chains. One Member found that more than 70% of their excursion portfolio included the opportunity for customers to interact with animals. Strong links have developed between tourism destinations and animal attractions, and for customers good animal welfare standards are increasingly important. By adopting the *ABTA Animal Welfare guidelines*, and a collaborative approach, travel providers and attractions working with these manuals are aiming to ensure that elements of bad practice are phased out and that associated business risks are minimised.

Customer pressure and damaged reputations

Customers can have a strong emotional link to animals, and they regard animals in distress, neglected or abused, or commercially exploited as unacceptable.

Many travel providers have received customer complaints relating specifically to animal welfare. These may be in relation to an organised activity sold by the travel provider or about something the customer has witnessed in the destination, for example, wild animals being used for photo opportunities, or stray animals in tourism resorts.

Many travel providers have now made strong commitments to sustainable tourism and are working to ensure that these commitments are embedded in their supply chains.

External pressures and campaigns

Animal attractions come under intense external scrutiny from NGOs, charities and other stakeholders involved in the animal welfare agenda. Over the years organisations have campaigned actively against animal attractions that exhibit poor or unacceptable practices and against tourism businesses that are linked to them.

Encouragingly, however, through dialogue and engagement, both the industry and some of these organisations have agreed that working together achieves more than working apart.

The legal dimension

The legislation around animal welfare, animal acquisitions and keeping of animals is complex and subject to local variations. Many tourism destination countries are official signatories to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This convention aims to regulate the trade in animals appearing on the International United Conservation Network (IUCN)'s Red List of Endangered Animals. This list includes animals such as bottlenose dolphins, a species commonly found in tourist attractions. Under the articles of the convention, capture and trade in these animals is regulated and is only permitted where scientific investigations conclude that capture will not adversely affect wild populations and that transport safeguards welfare.

Enforcement of CITES can vary from destination to destination. More information about CITES can be found in Section 7 of this document.

Working together for progress

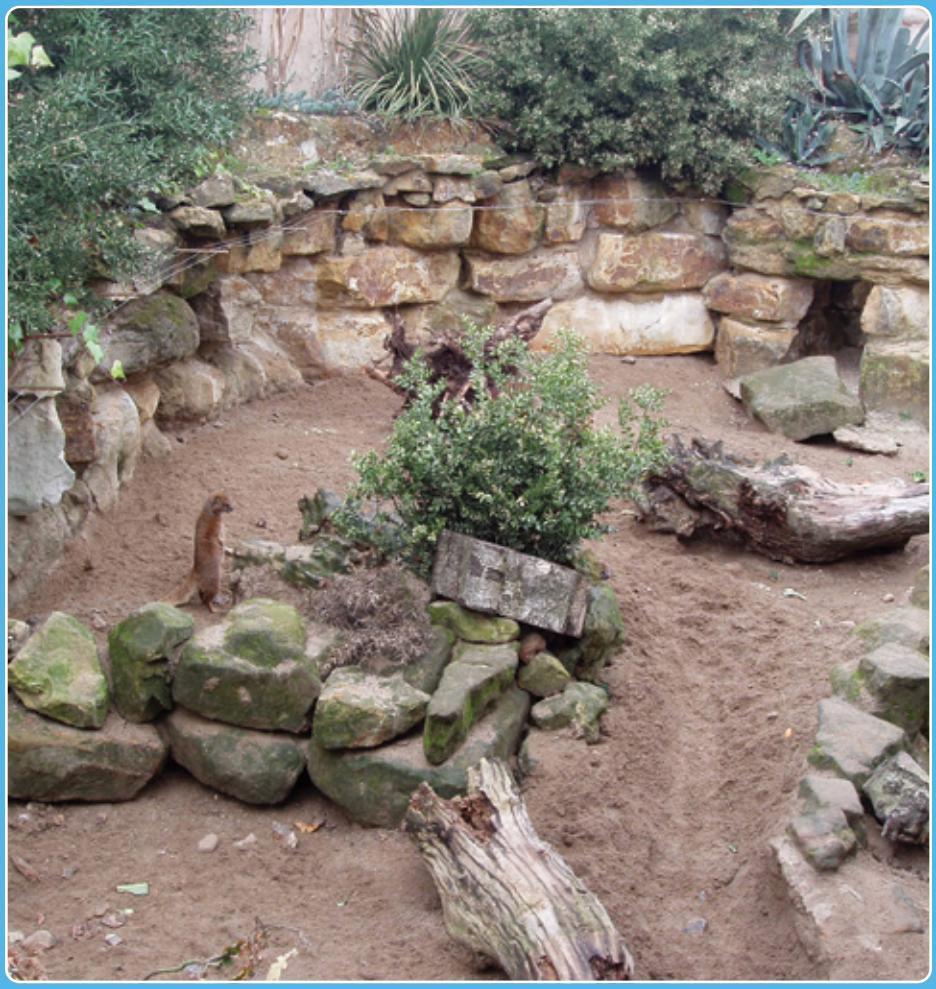
There is a strong case for the tourism and animal attractions industries to work with animal welfare scientists and experts, to ensure that good practice around animal welfare becomes commonplace in animal attractions. This should not only improve the customer experience but enhance the welfare of the animals involved.

KEY POINTS

- The popularity of animal attractions is increasing.
- Public awareness has significantly increased over recent years, and travel providers and tourists expect good standards of animal welfare.
- Risk to travel providers of badly managed animal attractions include: reputational damage; customer complaints; health and safety issues; NGO pressure.
- The tourism and animal attraction industries can work together to safeguard animal welfare.
- The rise in popularity of the 'selfie' has led to tourists seeking increased proximity to animals in some wild and captive contexts.

SECTION 2

What is animal welfare?



Mongoose enclosure with natural substrate, structures and shelter.

Animal welfare refers to the physical and mental state of the animal. An animal may experience positive mental states if it is healthy, well-nourished, safe, able to exhibit choice and control over its behavioural repertoire and if it is not suffering from unpleasant, negative mental states such as pain, fear and distress. Other terms such as animal care, husbandry or humane treatment refer to how an animal is looked after. Reasonable animal welfare requires those responsible to ensure disease prevention and veterinary treatment, appropriate and enriching environments, shelter, management, nutrition, humane handling and opportunities for social interactions. Animals in a captive environment rely on the care and ability of humans to provide them with what they need to maintain their welfare.

Safeguarding animal welfare

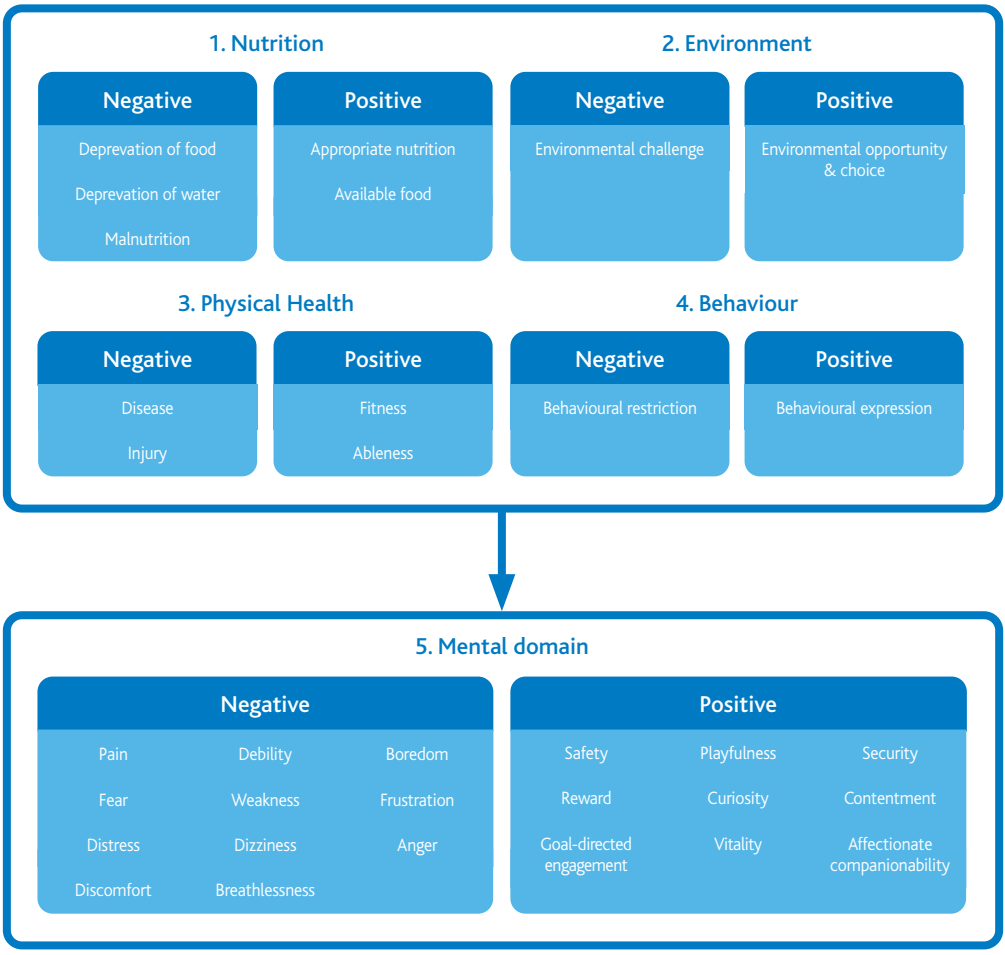
The *ABTA Animal Welfare Guidelines Overview manual* and its supporting guidance manuals build upon the principles of the extended Five Domains Model (developed by Mellor & Beausoleil (2015), originally based on the Farm Animal Welfare Council's Five Freedoms (FAWC 1979) and the Welfare Quality® criteria. See Appendix1: Sources of further information.

The extended Five Domains is the most contemporary and well-accepted framework for measuring animal welfare. The main improvement from the Five Freedoms, on which it was based, is the consideration of positive welfare as well as negative, since minimising negative welfare states does not automatically guarantee positive ones. The figure on page 8 shows the four main 'functional' domains, and how the fifth 'Mental State' domain integrates all the conditions from these four and describes indicators of an animal's positive and negative mental states.

KEY POINTS

- You are responsible for an animal if you use, supply, own or are in charge of it.
- The Five Domains form the basis of good animal welfare.

The Five Domains model.



Based on Five Domains model, p20 WAZA Caring for Wildlife, Welfare Strategy 2015

A person is responsible for an animal's welfare if they use, supply, own, or are in charge of it. This responsibility includes the provision of conditions to meet its basic welfare requirements.

SECTION 3

Animals in tourism

Example of a good bridle.

This section covers the range of tourism activities involving animals, both captive and in the wild, and their differing animal welfare needs. It also considers customer health and safety at animal attractions.

Tourism, animals and captive environments

Guaranteeing appropriate standards of animal welfare in captive environments is complex. Animal species have evolved over thousands of generations, both physically and behaviourally, in order to optimise their chances of survival in the wild. In captivity animals potentially face a number of challenges for which evolution has not prepared them; the geographical location, climate, enclosures and vegetation may be alien to the species as it exists in the wild. Similarly, some of the survival challenges an animal confronts in the wild may be absent in captivity (hunting, foraging, territorial defence and social dominance). To deliver high standards of welfare these conditions may need to be provided artificially or compensated for. In captivity animals often rely on humans to provide suitable physical, social, biological and other conditions.

Types of captive animal facilities

Though there are many different types of captive animal facilities, they commonly focus on enabling the public to view or interact with animals. These include the urban zoo; rural safari park; aviaries or falconry centres; crocodile and snake farms; riding stables; elephant camps; dolphinaria; animal sanctuaries open to the public; rescue and rehabilitation centres open to the public; circuses; individual animals kept for display or performance purposes.

Potential welfare impacts in captive environments

In captivity, living conditions should cater for the species-specific needs of the animal. For example, this may include providing opportunities to dig, climb, run, swim or interact as part of a social group. Requirements vary depending on the type of species being housed in a captive environment. For a table explaining the common types of animals kept in captive environments and their species-specific needs see Appendix 1: Animal husbandry information tables.

Failure to address these needs – for example, by keeping animals in unsuitable captive conditions for prolonged periods, or in inappropriate social environments – can damage physical and mental health and can contribute to the development of abnormal behaviour, disease and early mortality (poor welfare). Similarly, invasive actions such as the restriction of movement, training using punishment and negative reinforcement techniques, being trained to perform unnatural behaviours, or making modifications to the normal physiology of animals to reduce risks when handling, can cause severe and lasting distress.

Careful management of wildlife tourism is needed to ensure health and safety of animals.

Working animals in tourism

Working animals form the backbone of many societies, where the life of a family or community in many countries depends on the task performed by the animal(s). The welfare of these working animals is directly linked to the life and health of the humans who depend on them for their livelihoods. Maintaining healthy working animals will therefore support both animal welfare and people's livelihoods.

Types of working animals in tourism

There are many species used for work around the world, but those most often encountered are domesticated animals such as donkeys, horses, mules, camels, and sled dogs. In tourism, working animals are not only used in the transportation of goods, they have increasingly become part of the tourism experience. Holidays can involve horse riding, while excursions in a variety of destinations can include riding camels, donkeys and mules. Various animals are used to pull carts, carriages and sleighs, and animals are used in traditional contexts (for example, rodeos), which have been modified for the tourist experience.

Potential welfare impacts on working animals in tourism

Welfare problems that may affect working animals include: malnourishment; dehydration; poor living conditions; inability to seek refuge from adverse weather conditions; lack of veterinary/animal healthcare; problems caused by poorly designed or ill-fitting harnesses, saddles and yokes; overloading or pulling unroadworthy vehicles; lameness or injury; being tethered or hobbled using inappropriate materials or methods; being denied social and behavioural needs; working long hours with little rest; cruel training methods; and inhumane handling.

Tourism and animals in the wild

Wildlife tourism activities are increasing across the world. The broad term, wildlife tourism, is used to describe an extensive range of different wildlife-based tourism activities, where tourists travel to natural areas to appreciate and enjoy wildlife.

Wildlife tourism can be an important source of local economic development. These activities can bring many benefits when best practice is adopted, including local revenue and employment, and support for conservation efforts. However, when not managed appropriately, this type of tourism has the potential to negatively affect the welfare of the animals and their survival. For instance, by causing disruption to the natural feeding behaviours and breeding success, alterations to natural habitats, disease transmission from tourists to animals or accidental deaths of animals.

Responsible whale watching.

The range of wildlife tourism activities

Wildlife tourists expect a reasonable chance of viewing key species. Habitat types and the variety and abundance of wildlife species can determine the viability of wildlife tourism opportunities. African savannahs are one of the most popular destinations for wildlife tourism due to the high concentrations of easily visible large mammals. Wildlife tourism also occurs in rainforests, but it can be more difficult to view wildlife. Wildlife tourism includes:

- Non-consumptive forms, for instance photographic and walking safaris, bird-watching, whale-watching, reef-diving, and the viewing of focal species (species that are part of a conservation project) such as nesting turtles, bears, gorillas, sharks, and polar bears
- Consumptive forms of wildlife tourism include sport fishing (excluding catch and release) and trophy hunting.

The means of accessing the wildlife experience can vary, including by foot, vehicle, boat, balloon, by swimming or by riding certain animals specifically kept for that purpose.

Potential welfare impacts in the wild

Without careful management of tourism activities in the wild, there is the potential to cause stress to animals. For example by approaching animals too closely, or causing them to be poisoned or maimed by leaving litter. Similarly, tourism activities can potentially damage or destroy animal habitats by, for example, lighting bushfires, walking on coral reefs or unsustainable use of shared resources such as water sources. The trade in wildlife curios has also increased the collecting of wild plants, corals and shells, as well as the illegal capture and killing of wild animals for fur, feathers, skins, ivory, horn, teeth and eggs, all of which have the potential to threaten the survival of certain species in addition to the often-detrimental welfare impacts associated with their collection.

Customer health and safety at animal attractions

Animals, whether wild or domestic, can be unpredictable and potentially dangerous. Even in a controlled, captive environment or after generations of captive breeding, an animal retains its innate behaviour and instinct. Suppliers of activities involving animals and people should take all reasonable steps to safeguard the health and safety of visitors and staff, as well as the animals themselves.

Many countries have categorised commonly kept animal species by their ability to cause harm; based on this categorisation they then restrict, control or prohibit human/animal contact. For example, in the UK the Department for Environment, Food and Rural Affairs (Defra) has produced a species list based on three risk categories.

For specific animal categorisation and management recommendations based on the Defra species list, please refer to Appendix 1: Animal husbandry information tables.

Some animal species can harbour diseases that may be transferable to humans and vice versa. These are called zoonoses. Examples include salmonella (associated with birds and reptiles), hepatitis or monkey pox (associated with primates) and the common cold (carried by humans). To prevent zoonotic infection, contact between people and animals should be controlled. Customers should be informed of the potential risks and the rules of engagement, for example, washing their hands

before and after permitted animal contact to prevent disease transmission. For further infectious disease information, please refer to Appendix 2: Zoonoses.

Further guidance on customer health and safety

Local standards and regulations with regards to safety and hygiene can vary from country to country and even from region to region. Compliance with local law and regulation is a pre-requisite for suppliers of animal attractions. Suppliers should be aware of and have in place, appropriate safety management controls for the safety of visitors and staff. Documented evidence to demonstrate this should be retained.

In terms of animal welfare it is important to establish an open and informed dialogue with customers. This can help ensure that customers behave appropriately and that suppliers are aware of, and can respond to, their customers' expectations and concerns.

In the absence of local standards or regulations, the British and Irish Association of Zoo and Aquaria (BIAZA) and the Health and Safety Executive (HSE) have issued useful guidelines on managing public health and safety within zoos and aquaria that you may find of use. See Appendix 7: Sources of further information.

KEY POINTS

- Captive animals rely on humans to provide for their species-specific needs.
- Wildlife tourism should be carefully managed to protect animals and environments.
- Trade in wildlife curios can threaten species survival.
- Governments restrict or prohibit human contact with certain dangerous species of animals.
- Suppliers of tourism activities involving animals should manage animal/human contact to prevent zoonoses – transferable diseases.
- Tourist activities involve working animals, such as horses, donkeys, camels, and sled dogs.

SECTION 4

Basic welfare requirements

Basic welfare requirements for animals managed and/or dependent upon human beings

Application of and adherence to these basic welfare requirements, as structured within the Five Domains framework, will ensure a basic level of welfare and that is essential in striving to provide animals with a good quality of life. The four physical and functional domains of Nutrition, Environment, Physical Health and Behaviour combine to result in the animal's Mental State.

Nutrition

1. All animals have unrestricted daily access to adequate and clean drinking water in line with their species-specific needs.*
2. All animals are provided access to food that is adequate in quality, amount and variety for the species, the captive environment and the individual animals' needs. Feeding routines should be species-specific, mentally stimulating and encourage natural behaviours.

Environment

3. In captivity, enclosures are environmentally complex, including natural substrate, structures, shelter and environmental enrichment, in order to encourage a normal and diverse behavioural repertoire. All animals should be able to access shelter and a climatic environment suitable for their species-specific needs and seek privacy from view.
4. In captivity, enclosures are clean, hygienic, free of excessive artificial noise such as visitor or speaker noise, and well maintained (for example, devoid of excessive faeces, urine or rotting food, litter, not waterlogged, not infested with vermin etc.)

Physical Health

5. The facility has access to a vet, either employed or externally contracted, who is knowledgeable and experienced in the health and welfare of the relevant animals.
6. There is a policy not to surgically modify the skin, tissues, teeth or bone structure of animals, and not to sedate animals, unless it is for the purpose of genuine medical treatment or improved welfare, and always under the guidance of an appropriately trained vet.
7. Complete, accurate animal stocklists, veterinary records and any appropriate licences or permits should be up-to-date and available for inspection. The required paperwork should be in place for all animals.

**Working animals should have regular access to clean drinking water while at work and unrestricted access to water when at rest. Example of species-specific need: aquatic animals and some reptiles get their required hydration through their food only.*

Behaviour

8. In captivity, enclosures (including pools) or methods used to contain the animals for temporary periods, allow all the animals to move and exercise freely, and to maintain sufficient distance from other animals in case of conflict.
9. Depending on their species-specific and seasonal needs, animals should have the opportunity to interact regularly with other members of their species. Animals should not be prematurely separated from their young.
10. Any training of animals should never involve punishment or food deprivation.

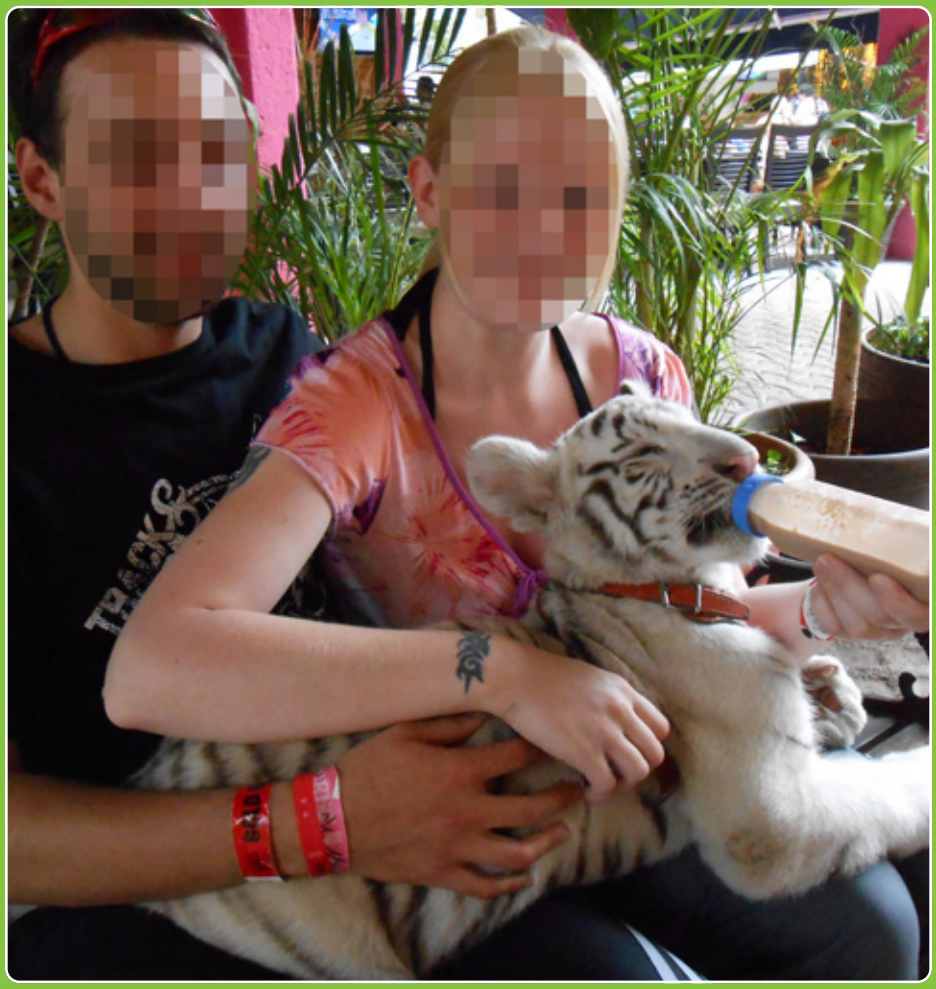
Additional basic welfare requirements for businesses with working animals

1. Tethering or hobbling during an animal's non-working period should be for a limited time only (see species-specific guidance in Section 5 of the *Working Animals* manual). When tethered, the animals should be able to walk, lie down and stand up without putting tension on the tether, and reach basic resources like food, water and shade. If hobbles are used, they should join the two front legs, the straps should be lined and regularly greased, be adjustable and have a quick-release mechanism. All tethered or hobbled animals require a high degree of supervision.
2. Young, pregnant, nursing, injured, ill, distressed or elderly animals should not be ridden, or be required to carry/pull loads. Equids (for example, horses, mules, donkeys and zebra hoofed mammals) should not be worked before they are three years old; camels should not be ridden before four years. Weaning should not be conducted for horses, donkeys and mules before six months and for camels not before four months. In all cases, it is preferable for weaning to occur naturally.
3. Equipment should fit, be comfortable, not cause distress or injury, and be in working order (for instance, tyres properly inflated on a working cart). It should be cleaned and dried after use. Equipment should be removed during rest periods and when the animal is eating or drinking.
4. Animals should train and work within their physical capabilities. Loads should be appropriate for the animal's size and ability, body condition and fitness level (for example, not more than one person on an equine or camel, but equally, a 150kg person should not ride a 150kg donkey), work should not be in the hottest part of the day and animals should have regular rest periods each day of at least an hour between working periods.
5. Effective and regular shelter should be provided for working animals both in resting and working environments to avoid heat or cold stress.

Donkeys.

SECTION 5

Unacceptable practices



Tiger cub used as a photo prop.

Certain activities are widely recognised as having a detrimental impact on animal welfare. These activities have therefore been classified as 'unacceptable' as defined by evidence supplied by experts.

Unacceptable practices

These activities divide into three categories:

1. Unacceptable practices involving animals in captive attractions.
2. Unacceptable practices involving animals in cultural events and activities.
3. Unacceptable practices involving free-roaming animals in the wild.

Using animals for begging is an unacceptable practice.

KEY POINTS

- The 'unacceptable' classification is based upon scientific evidence and/or legislation.
- Unacceptable practices include practices that may take place in captive attractions, cultural events and those involving animals in the wild.

More details on each practice can be found in the *Unacceptable Practices* manual.

1. Unacceptable practices involving animals in captive attractions

- Animal breeding or commercial trade in sanctuaries and orphanages.
- Any tourist holding of, or photo opportunity with, wild animals where the animal does not have the choice of terminating the interaction or moving away.
- Performances or tourist interactions involving animals where training involves punishment or food deprivation, causes the animal fear, injury or distress, or the tasks are not based on normal behaviour.
- Tourist contact or feeding with elephants without a barrier.
- Elephant shows or performances for tourists.
- Tourist contact, feeding of and 'walking with' wild cats.
- Tourist contact or feeding of crocodiles or alligators.
- Tourist contact or feeding of great apes (chimpanzees, orangutans, gorillas, bonobos).
- Tourist contact or feeding of bears.
- Tourist contact or feeding of sloths.
- The feeding of animals with live vertebrate prey.
- Canned hunting.
- Ostrich riding (observing or participating).
- Unlicenced zoos.
- Euthanasia, unless carried out by a trained professional because welfare needs cannot be met, or because the animal cannot be released into the wild.
- Acquisition of any CITES Appendix I, II or III listed species except for demonstrable conservation or rescue/rehabilitation purposes.
- The manual for cetaceans (aquatic mammals, such as whales, dolphins, porpoises) is still under review, but tourist contact or feeding of orca, and unsupervised tourist feeding of cetaceans are unacceptable.

Trophy hunting is an unacceptable practice.

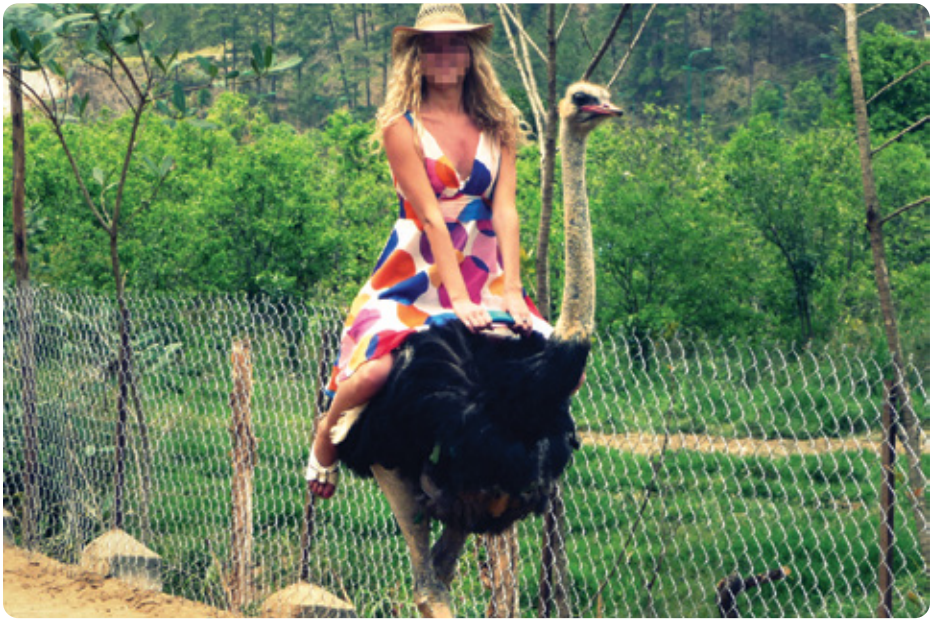
2. Unacceptable practices involving animals in cultural events and activities

- Animals used for begging (for example, dancing bears, snake charming, primates).
- Bear pits.
- Bear bile farms.
- Tiger farms.
- Any animal fighting, whether against humans or other animals.
- Bull running.
- Rodeo events that include calf-roping, team-roping, steer wrestling, bareback horse/bull riding using flank straps, wild-cow milking, wild horse racing or horse/steer-tripping.
- Ritual animal slaughter as part of the tourism experience.

3. Unacceptable practices involving free-roaming wild animals

- Unregulated animal and plant collection from the wild.
- Human-initiated contact with or feeding of animals in the wild.
- Trade and sale of endangered wildlife products.
- Trophy hunting.

For more information refer to the *Unacceptable Practices* manual.



Riding can be detrimental to ostriches.

SECTION 6

Developing an animal welfare approach

Dog sledging.

Step 1: Learn about animal welfare

Do you know how prevalent animals are in what you sell? This could include visits to animal attractions, animals in hotels, viewing animals in the wild or the use of working animals.

A first task is to complete a baseline assessment, identifying where animals may be a part of what you sell.

Do you understand how important animal welfare is to your customers? A 2017 ComRes survey found that 71% of respondents would be more likely to buy from a travel company that cares for animals[1].

Are you receiving any customer complaints on animal welfare and are you aware of the potential reputational risks?

Step 2: Create a plan

Identify your animal welfare lead

A named contact who has responsibility for animal welfare within the business provides a focal point for all members of the team and ensures that there is a regular emphasis on progress. This doesn't necessarily need to be a person's only role within the business, it may be an additional responsibility.

Your approach to animal welfare is likely to sit within a broader sustainable tourism approach, so this person may also have responsibility for the broader sustainability agenda.

Develop an animal welfare policy

It is recommended that you develop an animal welfare policy. Having one provides a reference to help you make strategic decisions and a focus point for all staff to be informed of the business commitment to animal welfare. We recommend referencing the ABTA Animal Welfare guidelines explicitly in your policy. You may want to make a streamlined version of your policy publicly available.

It is important that your animal welfare policy includes the following points:

- Clear overriding objectives and direction
- How the policy is supported by all levels within the business
- Details of any red-line issues or 'no-go' areas for the business.

Your policy should have support and engagement from your senior leadership.

Develop an animal welfare action plan

As with any other area of business, it's important that your approach to animal welfare is systematic and set against defined objectives, has clearly defined actions and a realistic timeline.

You may include the following areas of your business in the action plan:

- Marketing and communications
- Product and purchasing
- Customer-facing staff throughout the whole customer journey
- Destination-based staff.

Your action plan could set out how you intend to engage and assess your suppliers and any potential NGO partnerships.

[1] *ComRes poll, commissioned by Born Free Foundation, April 2017*

Step 3: Involve your suppliers

Your relevant suppliers may include animal attractions, as well as ground handling agencies or destination management companies. This may also include your accommodation providers.

Share your policy with your suppliers to raise their awareness of your commitment to animal welfare. ABTA Members can share the ABTA Animal Welfare guidelines with their suppliers. You may want to reference your policy in your supplier contracts.

You should evaluate what you sell against the criteria in your policy. This may be through third-party on-site audits, information provided by the supplier or information gathered by you remotely or in person.

It's best to work with your suppliers to improve animal welfare but you need to decide what your policy is if suppliers won't engage.

Step 4: Tell your customers

Develop an approach to communicate with customers on animal welfare.

This may include a customer-facing animal welfare policy.

Are your customer-facing staff, from booking agents to tour leaders, familiar with your animal welfare policy and able to explain it to customers? For example, would the relevant staff know how to handle a customer complaint on animal welfare?

Do you highlight tourism products that represent best practice in animal welfare to your customers, and avoid accidental use of imagery representing poor animal welfare? This could include images on your website, in brochures or promoted on social media. This will require appropriate staff training.

Prepare your communications team to respond to media coverage or NGO pressure by ensuring they are familiar with your policy and achievements. There could also be opportunities for positive media coverage.

Step 5: Measure success

Set clear, easily measurable indictors that will be meaningful to those wanting to know about your achievements. Indicators could include:

- The proportion of attractions you have reviewed against your animal welfare policy
- The number of attractions where animal welfare standards have improved as a result of engaging with your business
- The number of products you have decided not to sell because they do not align with your animal welfare policy.

SECTION 7

Legal requirements – CITES

Parrots in transportation.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was established in 1975 to protect wild animals and plants from over-exploitation through international trade.

Approximately 182 countries (Parties) have now signed CITES and more than 35,000 plant and animal species are protected.

CITES is legally binding. Suppliers who own a CITES specimen (alive, or dead parts and derivatives) should comply with the convention. Those found to be in contravention of CITES are operating illegally and risk prosecution.

How CITES works

CITES provides three levels of protection for species in international trade:

Level 1: Species threatened with extinction.

Species listed in Appendix I of the CITES document, such as tigers, Asian elephants and orangutans are the most endangered among CITES-listed animals. Threatened with extinction, they may not be traded internationally for primarily commercial purposes. However, these species may be traded internationally for non-commercial purposes. CITES import and export permits are required for trade.

Level 2: Species for which trade must be controlled to avoid use incompatible with survival.

Species listed in Appendix 2, such as beluga whales, bottlenose dolphins, lions and most species of bear, are not necessarily threatened with extinction now, but may become so unless trade is closely controlled. They may be traded internationally for commercial purposes, but this trade is strictly controlled. CITES export permits are required for trade (no import permit is required).

Level 3: A voluntary Appendix in the CITES document to which any Party can unilaterally add species. This indicates that the species is subject to regulation within the Party's jurisdiction and needs the cooperation of other parties to monitor and control trade.

See Appendix 4: Sample CITES permit.

Enforcing CITES

CITES Parties are expected to implement and enforce the convention using domestic legislation. Each Party has a CITES Management Authority (to issue import

CITES permits are also required for trade in animal parts and deliveries such as coral jewellery.

and export permits, to monitor trade in CITES species, and to compile annual trade reports), and a CITES Scientific Authority (to provide scientific expertise on import and export decisions).

CITES encourages precaution; in uncertain cases, trade should not be allowed unless there are sufficient safeguards to ensure that a species is protected from overuse and the risk of injury, damage to health or cruel treatment is eliminated/minimised.

Determining the impact of trade

If a party wishes to export a CITES-listed species, the exporting country should make Non-Detriment Finding (NDF). An NDF is a finding that the export will not be detrimental to the survival of that species.

The NDF should be based on scientific studies of the status of the wild population from which the animal was taken. A scientific assessment should show that trading the animals (or their parts) will not deplete the wild population.

CITES does not require an NDF to be formally written or published. Enquiries about NDFs need to be directed to the CITES authorities in the exporting and/or importing country.

Transporting animals

A CITES export permit for any live specimen of a species listed on CITES Appendix I or 2 may only be granted when the Management Authority of the exporting country is satisfied that the animal will be: "prepared and shipped so as to minimise the risk of injury, damage to health, or cruel treatment".

A CITES import permit may only be granted when the Management Authority of the importing country is satisfied that: "the proposed recipient of a living specimen is suitably equipped to house and care for it".

For CITES resources see Appendix 6: Sources of further information.

Limitations of CITES

CITES only governs international trade in wild animals or plants recognised as endangered or at risk of extinction. However, many wild animal species are not listed due to a lack of evidence and research; thus some species may disappear before they can even be recognised by CITES. It is also important to recognise that while the convention includes a few requirements as to avoiding poor welfare, it does not serve as an animal welfare regulating mechanism in most cases. National animal welfare regulations are necessary to safeguard the welfare of all animals, whether they are in captivity or the wild, and facing significant threats or not.

KEY POINTS

- CITES is legally binding and protects wild animals from over exploitation through international trade.
- CITES aims to ensure that these traded animals do not become endangered by applying three levels of protection to them.
- CITES import and export permits are issued when trading listed animals (or their parts).
- CITES is enforced using domestic legislation in each country.
- The limitation of CITES is that it only protects species facing significant threats, and only those with enough supporting data. While they aim to avoid poor welfare, CITES regulations do not focus on animal welfare.

SECTION 8

Acquisition of animals

Phelsuma ghecko.

Acquisition of any CITES Appendix I, II or III listed species is an unacceptable practice, except for conservation or rescue/rehabilitation purposes.

Before contemplating the capture of a wild animal, the following should be considered:

- Legislation governing international trade in wild-caught species (CITES), and regional, national and local laws relating to the capture of animals from the wild
- Potential conservation impact of removing individual animals from the wild on the survival prospects of a species or population (taking into account CITES Non Detriment Findings (NDF) and relevant IUCN guidelines). See Appendix 3: Captive animal guidelines
- Potential welfare impact on individual wild animals, for example injury and mortality as a result of capture and transport. The impact of selected removal (for example of males) on the sex ratio
- CITES aims to ensure the captive welfare of the animal and whether its future environment and management offers acceptable conditions that meet all its species-specific needs.

Dolphin drives are a widely opposed practice used to capture dolphins for both their meat and for use in captive animal attractions.

SECTION 9

Animal sanctuaries

Bear enclosure with natural substrate, structures and shelter.

An animal sanctuary is a facility that rescues injured, confiscated, orphaned or abandoned animals in need and provides short or long-term refuge and/or rehabilitation.

Like any captive animal facility, the basic welfare requirements and the guidance in the manual *Animals in Captive Environments*, applies to sanctuaries and orphanages. In addition, animal breeding or commercial trade in sanctuaries and orphanages is an unacceptable practice.

Guiding principles of animal sanctuaries

Facilities wanting to be identified as animal sanctuaries should consider the following principles:

Animal acquisition

- No purchasing of animals.
- Only accepting animals as a result of official confiscation, by donation or by rescue.
- Records should be kept of the source of all animals.

Removal of animals from facilities

- No sale of animals.
- Only moving an animal from a sanctuary to another facility that is demonstrably of equal or better standards and then only if relocation is in the animal's best interests.
- Records should be kept of any disposition (including death) of animals.
- Euthanasia should be humane and carried out in a timely manner if necessary to prevent animal suffering.

Breeding

Sanctuaries should operate a no breeding policy and will implement all necessary humane birth control measures to ensure this.

Commercial activities

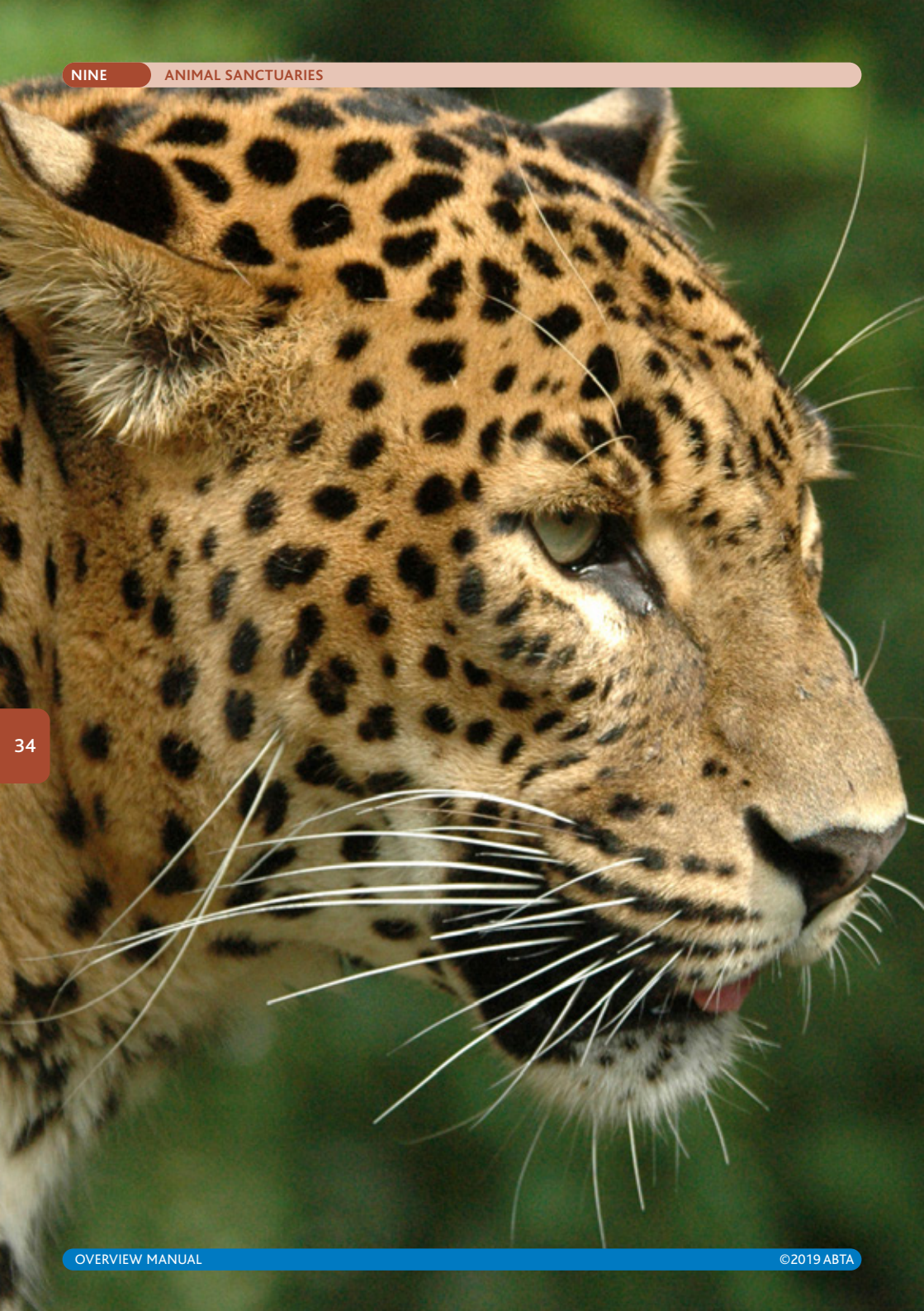
No commercial exploitation, including performances, shows or use of animals as photo props, is allowed.

Handling of animals

- No physical contact is allowed between visitors and animals.
- Only permitting physical contact between staff and animals when necessary for essential management/veterinary purposes.

Welfare and care

- All animals should be kept in clean, comfortable, species-appropriate and enriched environments.
- The active supervision of animal welfare at the sanctuary by a licensed veterinarian.



Accreditation

We hope that suppliers keen to operate and promote their facility as an animal sanctuary will abide by these principles, and that travel providers will only promote animal sanctuaries facilities that meet these principles. Sanctuaries can apply for accreditation from the Global Federation of Animal Sanctuaries (GFAS).

For animal sanctuary resources see Appendix 6: Sources of further information.

KEY POINTS

- Animal breeding or commercial trade in sanctuaries and orphanages is an unacceptable practice.
- Sanctuaries should keep their animals in conditions that meet their species specific needs.

SECTION 10

Protecting livelihoods

Farrier with horse, Ethiopia.

When people's livelihoods are secure they are less likely to resort to practices that are detrimental to the environment and wildlife on which their income depends. Equally, through understanding that the health and welfare of the working animal is linked to the life and health of the owner and their family, they are more likely to provide appropriate animal welfare.

Many tourism businesses acknowledge that local people are well placed to protect wildlife if they derive a benefit from it, for example, jobs, new enterprises, contributions to community development funds, improvements in infrastructure etc.

If people living in wildlife areas are employed within the tourism industry and receive training, promotional opportunities and good working conditions, this can be a powerful force to motivate people away from unsustainable practices.

It is also important that the tourism industry supports communities who run their own tourism enterprises, particularly in wildlife tourism areas, in order to secure sustainable livelihoods.

However, many communities are increasingly counting the costs of tourism that does not put their needs and rights on a par with those of tourism companies and tourists. It is important that these communities are compensated for their losses and that tourism developments do not deny communities their access rights

CASE STUDY

In Kenya, for many years driver guides employed by tour companies have kept the majority of the fees tourists pay to visit Maasai tribes in their cultural settlements and surrounding wildlife.

This has had an indirect effect on wildlife by failing to demonstrate the link between conservation and tourism for the Maasai tribe.

However, the introduction by some travel providers and lodges of a cashless ticketing system for tourist visits to the settlement has significantly increased the benefits to the Maasai and therefore encouraged more support for wildlife as a source of that income.

Maasai Tribe in Kenya.

CASE STUDY

The Kalandar tribe in India has a cultural practice involving dancing bears. The bears suffer as they are taken from the wild, beaten, mutilated and forced to dance.

Wildlife Trust of India, Wildlife SOS, World Animal Protection, International Animal Rescue and Save the Bears have worked to end this practice and provide sanctuary for rescued bears.

From the very early days, working with the owners of the bears formed an integral part of the project; this ensured that owners would never revert to using the bears as a way of earning a living.

The Kalandar tribes-people have learnt new trades and received financial enterprise backing to help them support their families and enjoy a better way of life. In return, the Kalandar tribe have signed a legally-binding contract promising never to acquire another bear on pain of arrest, imprisonment and seizure of all assets to repay the start-up loan.

Some Kalandars who clearly had a genuine bond with their bears have even been employed by bear sanctuaries.

to common resources, such as good fishing grounds, grazing pasture and water sources.

Many of these issues are similar for captive wildlife attractions. Efforts should be made to identify and secure alternative livelihoods for individuals engaged in unacceptable wildlife tourism practices.

Preferred practice for a livelihoods approach

- Manage the natural resources used for wildlife tourism activities to allow for ongoing access by local communities.
- Maximise the positive effects of tourism activities on local communities for example, by employing local staff, buying produce from local suppliers, using local service providers.
- Pay fair wages and provide good working conditions to all staff.
- Offer training and career progression opportunities to local people.
- Purchase locally-produced goods that benefit the wider community where possible, as long as their production does not put an unsustainable strain on the natural resources in the area.
- Support community-based tourism initiatives/enterprises by encouraging tourists to visit these. Implement fair-trading practices with local communities.
- Make financial contributions towards projects that improve the welfare of the local community and local animals. A good example here would be projects that aim to establish alternative livelihood plans for local people to move them away from unacceptable practices.

KEY POINTS

- Local and indigenous people are well placed to protect wildlife especially if they derive benefit from it.
- Ethical and responsible tourism that safeguards animal welfare can maximise the sustainability of the local tourism industry as well as the livelihoods of local people engaged in or trading with it.
- Tourism developments should respect communities' rights to common resources , for example, grazing pasture, water etc.
- Efforts should be made to secure alternative livelihoods for individuals engaged in unacceptable practices involving animals.

SECTION 11

Wildlife souvenirs

Ivory chopsticks and other souvenirs destined for market.

Many tourists take souvenirs home as a reminder of their holiday. It is extremely important that any wildlife (plant or animal) souvenirs do not affect threatened animal and plant species. Additionally the importation of some plant and animal products is illegal in many countries and may result in prosecution.

Shells are an example of unsustainable wildlife souvenirs.

Examples of unsustainable wildlife souvenirs include:

- Shells, coral, starfish and sea horses
- Ebony and other hardwood products used for wood carvings
- Wild reptile skins, for example, monitor lizards/snakes (worked into leather products)
- Porcupine quills
- Animal horns, for example, antelope, rhino
- Tortoiseshell products
- Spiders, butterflies and other insects
- Products made from ivory
- Products made from endangered animals' skins and/or furs
- Traditional medicines made from animal parts and products.

CITES provides a comprehensive list of protected species of plants and animals within its appendices. See Appendix 6: Sources of further information.

Additionally the WWF (World Wildlife Fund) have produced a useful guide regarding what tourists should be aware of when buying souvenirs. See Appendix 6: Sources of further information.

SECTION 12

Food and animal welfare

Shark fins, often used for shark fin soup.

While many tourists have a desire to try something exotic while on holiday, travel providers should proceed with caution with regards to including menu options consisting of wild animals since sourcing such food items often has welfare or conservation impacts.

Food options that have been subject to wide-reaching controversy are whale and dolphin meat, shark-fin soup, foie gras, civet cat coffee (where it can't be guaranteed as cage-free), crocodile, snakes and kangaroo. Travel providers should be aware of the evidence of poor welfare associated with the animals sourced for these foods.

Concerns go beyond wild animals, there are welfare concerns with cat and dog meat as well, for example.

Travel providers should also consider the risks of offering food that may provoke strong reactions from tourists, such as whole animal displays, for example, a whole pig.

Whole shark display in restaurant.

Whole crocodile display in restaurant.

SECTION 13

Volunteer tourism

Volunteers in action.

For many customers, it is no longer enough just to travel and tour. People want an experience – their own 'life on earth' moment. This experiential travel is fast becoming popular as part of a gap year or career break and as volunteer tourism.

Conservation volunteering or animal-based volunteer tourism gives people back-stage passes to wildlife centres and hands-on experiences. Gap year travel brochures often contain photos of privileged closeness to endangered animals.

The increased demand for volunteer placements in developing countries has been met by a growth in projects and organisations. Unfortunately, these volunteer activities can have negative impacts on the animals and local communities if not managed appropriately.

Volunteer tourism, as with all types of tourism, should be responsible and strike a balance between the needs of visitors, suppliers, local communities, animals and their welfare and the natural environment. Volunteer tourism, like any other experience involving animals, should adhere to the *ABTA Animal Welfare guidelines* to ensure responsible and sustainable practices.

Responsible volunteer tourism

Adopting the principles of responsible volunteer tourism benefits the host communities and reduces negative social, economic and environmental impacts. In responsible volunteer tourism:

- Volunteers should work with, not instead of, local workers
- Appropriate resources and support should be provided to run the volunteer programmes
- Ongoing evaluation and monitoring is essential to ensure projects meet the criteria for responsible tourism and sustainability.

Lion cubs

Responsible walking safari

Marine conservation fieldwork

SECTION 14

Management of stray animals

Stray animals can be found in and around tourist hotels and venues.

In some destinations, local populations of stray and feral animals, cats and dogs in particular, have grown drastically. As a result, stray animals can be found in and around tourist hotels and venues. This can present challenges for the tourism industry, for example, if customers see animals in a poor condition and can present hygiene issues if stray animals are entering restaurants or food storage and preparation areas.

It is essential that any measures to control populations of stray animals in destinations are humane. Neutering programmes to prevent further population expansion, rehoming programmes and the creation of animal shelters are preferred practices. Capture and euthanasia of animals should only be conducted as a last resort, under the guidance of an appropriately qualified vet and must be conducted humanely.

Hotels with populations of stray animals in the hotel grounds, gardens and beaches should clearly inform customers not to feed the animals to discourage further animals coming on site and to minimise the risk of bites or scratches.

Some hotels have established controlled feeding zones within grounds, gardens and beaches to try to contain stray populations in certain areas that are off-site to customers. Where this is conducted, it's important to minimise any potential hygiene concerns such as animals entering food preparation or storage areas, food consumption areas or being in close proximity to hotel staff working in kitchens or restaurants.

Stray animals can be found in and around tourist hotels and venues.

Appendices

Lion cubs in the wild.

Appendix 1: Animal (husbandry) Information Tables

The following tables provide basic information on mammals, birds, reptiles, amphibians and fish commonly kept by captive animal facilities. The tables have been created to be used in conjunction with ABTA's Animal Welfare Guidelines, to guide the auditor in their assessment of suppliers that keep animals in a captive environment. The information contained includes: the species' Hazardous Animal Category (indicating their ability to cause harm); a description of the species' natural habitat; and detail on the habitat features for appropriate living conditions; guidance on dietary requirements; and appropriate environmental enrichment. This information has been compiled from reliable sources, including: the UK Secretary of State's Standards of Modern Zoo Practice (DEFRA 2012), European best practice documents for zoos (EAZA 2014; EU Zoos Directive 2015), and the Animal Protection Ordinance of Switzerland, Tierschutzverordnung 2008 (APOS).

Please note: the tables are a useful reference for keeping different species and ensuring that enclosures fulfil species-specific needs. This information is a helpful guide, but not exhaustive. Individual differences between animals and context-specific management should always be considered, where in some cases additional or alternate requirements than those listed in these tables may be necessary. **If in any doubt, seek guidance from a qualified expert.**

Key to understanding the Animal Information Tables:

Hazard:

Animals of wild species are categorised according to their ferocity and ability to cause harm to people – shown according to risk levels.

Category 1 – Greatest Risk. Hazardous.
ABTA states that contact between the public and animals of these species is only permitted after a thorough risk assessment Constant supervision is necessary. Unsupervised contact animals of these species is discouraged.

Category 2 – Less Risk. Less hazardous.
ABTA states that there should be separation from the public by a barrier but need not prevent all physical contact as an assessment has been conducted. Caution should be taken, however, constant supervision is necessary.

Category 3 – Least Risk. Non-hazardous.
ABTA states that these animals are not naturally ferocious or cannot inflict significant injury to humans.

Habitat:

Indicates whether an animal lives primarily on land / the ground (**Ter** – terrestrial), in the air (**Fly** – flying), in trees (**Arb** – arboreal) or in water (**Aqu** – aquatic). In some cases, species may live in more that one of these environments.

Dietary requirements (Diet):

Indicates the dietary requirements of the species, whereby **C** – carnivore (animal eater), **H** – herbivore (plant eater), **O** – omnivore (all-eater) and **S** – scavenger (carrion eater). The majority of species, in particular omnivores, have a varied diet of numerous food types, which help to keep the animals physically and mentally healthy. To maintain balanced diets in a captive environment, vitamin and mineral supplements may need to be added to the diet. Some facilities may also use ready mixed formulas presented in a pelleted or biscuit form.

Social status:

Indicates whether the species is commonly solitary (living alone or in pairs), or lives within a social structure (living in a recognisable and distinct family group, colony or society). There are sometimes differences in social status within the same species, for example, between sexes or environments and these are listed as specific examples in the following tables although it should be kept in mind that the information given here has been generalised wherever possible.

Requirements:

The given numbers relate to features and furnishings for appropriate living conditions that provide the animals 'opportunities' to express natural behaviour, consistent to the species. The key following the tables defines the numbers.

Environment and enrichment:

Indicates the appropriate environment and enclosure enrichment for the species to help maintain both physical and mental fitness. A stimulating environment and enrichment program encourages behaviours specific to each species which may include and combine social, cognitive, sensory or physical factors. Implemented techniques are likely to include a combination of furnishings, apparatus, feeding devices and methods of food dispersal that are regularly changed to maintain interest and activity.

Table 1a: MAMMALS

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
MARSUPIALS AND MONOTREMES							
Echidnas	3	Ter	C	Mealworms, beetle larvae, crickets	Solitary	1) 6) 11)	The enclosure should have soft substrate with planted vegetation; piles of logs and shelters as required by ground-dwelling animals; features with crevices to hide insects; natural light and places to bask in sun; substrate to allow for digging.
Cuscus, American opossums, brushtailed possums, gliders, Kowari	2 or 3	Arb	O	Fruit, vegetables, nuts, crickets and mealworms, nutritionally balanced marketed brands of dried herbivore formulations	Solitary	2) 3) 4)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: if so, the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The enclosure should have a mass of branches, shelters, vegetation and apparatus with crevices to hide fruit and insects. There should be indoor enclosure with sufficient bedding, platforms, nest baskets and access ramps. Outdoor enclosure requires platforms at varied heights, tree trunks, mass of branches to allow climbing and shelters, and substrate to allow for digging.
Wombat, Tasmanian devil	2, 1	Ter	Wombat – H Tasmanian devil – C	Wombat – fruit vegetables, seeds and hay, nutritionally balanced marketed brands of dried herbivore formulations. Tasmanian devils – Smaller prey meat	Solitary	1) 3) 4)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: if so, the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The enclosure should have some soft substrate with planted vegetation, piles of logs and shelters as required by ground-dwelling animals. Should have indoor enclosure or shelter with sufficient bedding and places to allow refuge and escape. Outdoor enclosure should be planted with vegetation with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. Wombats specifically should have access to burrows, and multiple burrows if possible: they can use burrows to thermally regulate, using different depths to provide different temperatures for appropriate sleeping conditions.
Koala, tree kangaroos	3	Arb	H	Browse (eucalyptus species), vegetation, vegetables, hay, nutritionally balanced marketed brands of dried herbivore formulations (tree-kangaroos also eat seeds)	Solitary	2) 5)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: if so, the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, as koalas tend to be, the animal must be given continuous access to dark boxes or dens, away from public view. The enclosure should have a mass of branches, shelters, vegetation and apparatus with crevices to hide food.
Small kangaroos, Ouokkas	3	Ter	H	Fruit, nuts, vegetables, seeds and grass, nutritionally balanced marketed brands of dried herbivore formulations	Social	6) 22)	There should be continual access to indoor enclosure or shelter containing sufficient bedding to allow nest building and privacy from view. The outdoor area should have soft substrate and planted with thick vegetation with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other, with crevices and bark chippings to hide food.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Rat kangaroos	3	Ter/Arb	O	Fruit, nuts, vegetables, seeds, mealworms, grass, nutritionally balanced marketed brands of dried herbivore formulations	Solitary	6)	This species is nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. There should be continual access to indoor enclosure or shelter containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other. Climbing apparatus will provide extra enrichment, and soft substrate allows for digging.
Rock wallabies	3	Ter	H	Browse, vegetation, vegetables, hay, nutri-tionally balanced marketed brands of dried herbivore formulations	Social	2) 7) 8)	There should be continual access to indoor enclosure or shelter containing sufficient bedding to allow nest building and privacy from view. The outdoor area should have boulders and rocky outcrops with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other, and crevices to hide food.
Wallabies (all species apart from rock wallabies), pademelons	3	Ter	H	Browse, vegetation, vegetables, hay, nutri-tionally balanced marketed brands of dried herbivore formulations	Solitary (although forage in groups)	7) 8)	Should have sufficient space to allow movement, exercise and feeding - preferably on natural substrate or grass, and planted vegetation to provide shelter providing refuge, privacy and shade. There should be unrestricted access to indoor enclosure or shelter with straw bedding. Providing browse will encourage the animals work for their food by removing leaves and bark. Tying up the browse off the ground at different places around the enclosure will ensure all animals have the opportunity to eat. Vegetables should be provided whole, rather than chopped, and food pellets scatter-fed or provided in troughs (must be well-cleaned to prevent excess bacterial build up, which wallabies are particularly sensitive to).
Wallaroos and kangaroos	1	Ter	H	Browse, vegetation, vegetables, hay, nutri-tionally balanced marketed brands of dried herbivore formulations	Wallaroo – Solitary Kangaroo – Social	7)	Providing browse will encourage the animals work for their food by removing leaves and bark. Tying up the browse off the ground at different places around the enclosure will ensure all animals have the opportunity to eat. Vegetables should be provided whole, rather than chopped. Food pellets provided in troughs or scatter fed. Both dry soil and grass should be provided as substrates, with areas for sunbathing, and the enclosure should have sufficient space for exercise, given their bound can reach 7m in length, and their speed and agility seen in the wild.
BATS							
Bats, flying foxes	1, 2 or 3	Fly / Arb	H, C	Flying foxes – 2/3 hard and 1/3 soft fruit, syrup + protein supplements Other bats – mealworms	Social	9) 10) Some bats: 50)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be lit in twilight lighting during the day and light at night. If exhibited in natural light, the animal must be given continu-ous access to dark boxes or dens, away from public view. The enclosure should have ample vegetation and branches to allow the bats to perch, and sufficient space for flight between the perches.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
PRIMATES AND SIMILAR							
Tree shrews, marmosets	3, 2	Arb or Ter	O	Fruit, insects, nuts and syrup	Solitary	2) 3) 6) 14) 34) 36)	Continual access to indoor (or shelter) and outdoor enclosures should be offered. Indoor and outdoor environments should be well-ventilated, dry, warm and light. These species live purely in the trees in tropical forests and therefore their enclosure should mimic this - a mass of branch-es, shelters, vegetation and apparatus with crevices to hide fruit, nuts and insects. These should be at varying heights to give the animals multiple dimensions to explore in their environ-ment, encouraging them to exercise and allow them to get away from each other or seek privacy. Active foraging should be encouraged by methods such as smearing fruit residue on branches, using mealworm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps.
Lesser mouse lemurs	3	Arb	O	Fruit, nuts, mealworms, nutritionally balanced marketed brands of dried herbivore formulations	Social	2) 3) 6) 14) 36)	This species is nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. Indoor and outdoor enclosures should be well-ventilated, dry and warm. This species lives purely in the trees in tropical forests and therefore their enclosure should mimic this - a mass of branches, ropes, shelters, vegetation and apparatus with crevices to hide fruit, nuts and insects. These should be at varying heights to give the animals multiple dimensions to explore in their environment, encouraging them to exercise and allow them to get away from each other or seek privacy. Active foraging should be encouraged by methods such as smearing fruit residue on branches, using mealworm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps.
Lorises, potto, golden pottos	3	Arb	O	Meat, mealworms, fruit, nutritionally balanced marketed brands of dried herbivore formulations	Solitary	2) 3) 6) 14)	This species is nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. Indoor and outdoor enclosures should be well-ventilated, dry and warm. This species lives purely in the trees in tropical forests and therefore their enclosure should mimic this - a mass of branches, ropes, shelters, vegetation and apparatus with crevices to hide fruit, nuts, meat and insects. These should be at varying heights to give the animals multiple dimensions to explore in their environment, encouraging them to exercise and allow them to get away from each other or seek privacy. Active foraging should be encouraged by methods such as smearing fruit residue on branches, using mealworm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Tarsier, small galagos, bush babies, gentle lemurs, dwarf lemurs, tamarins, Goeldi's monkey, greater galagos, owl monkeys, Titi monkeys	2 or 3	Arb	O	Fruit, vegetation, insects, nuts	Social	2) 3) 6) 14) 34) All but owl monkeys: 36)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: if so, the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. Indoor + outdoor - well-ventilated, dry and warm. These primates live purely in the trees in tropical forests and therefore their enclosure should mimic this - a mass of branches, ropes, shelters, vegetation and apparatus with crevices to hide fruit, nuts, meat and insects. These should be at varying heights to give the animals multiple dimensions to explore in their environment, encouraging them to exercise and allow them to get away from each other or seek privacy. Active foraging should be encouraged by methods such as smearing fruit residue on branches, using meal-worm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps.
Lemurs (apart from gentle or dwarf lemurs), Sakis, Uakaris, howler monkeys, capuchins, squirrel monkey, talapoin	1 or 2	Arb	H	Fruit, vegetables, browse, nuts, crickets, high-fibre biscuits, nutritionally balanced marketed brands of dried herbivore formulations	Social	2) 6) 14)	These primates should have continual access to indoor and outdoor enclosures. Indoor enclosures should be well-ventilated, dry, warm and light. The indoor as well as outdoor enclosure floor should be covered with straw, bark chippings, sawdust and other natural substrates to stimu-late natural foraging behaviour and reduce any abnormal behaviour. There should also be series of climbing frames, ropes hung both vertically and horizontally, objects like tyres hung from the climbing frame, shelters, vegetation and plat-forms, of varying heights to give the animals multiple dimensions to explore in their environ-ment, encouraging them to exercise and allow them to get away from each other or seek privacy. Active foraging throughout the day should be encouraged by methods including smearing food residues on branches, using mealworm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps, scatter feeding on hay floor.
Woolly monkeys, spider monkeys, guenons, macaques, small langurs, ruffed lemurs	1	Arb or Ter	H	Vegetables, nuts, nutri-tionally balanced marketed brands of dried herbivore formulations, minimal fruit (and only if high-fibre, low-sugar fruits)	Social	2) 6) 11) 12) 14) Ruffed lemurs: 3)	These primates should have continual access to indoor and outdoor enclosures. Indoor enclosures should be well-ventilated, dry, warm and light. The indoor as well as outdoor enclosure floor should be covered with straw to stimulate natural foraging behaviour and therefore reduce any abnormal behaviour. There should also be series of sturdy climbing frames, ropes and platforms, of varying heights to give the animals multiple dimensions to explore in their environ-ment, encouraging them to exercise and allow them to get away from each other or seek privacy. Suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps, scatter feeding on hay floor etc. should be employed to encourage active foraging throughout the day.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Patas monkeys, mangabeys, baboons, large langurs, colobus, sifakas	1	Ter or Arb	H	Vegetables, nuts, nutri-tionally balanced marketed brands of dried herbivore formulations, minimal fruit (and only if high-fibre, low-sugar fruits)	Social	2) 6) 11) 14)	These primates should have continual access to indoor and outdoor enclosures. Indoor enclosures should be well-ventilated, dry, warm and light. The indoor as well as outdoor enclosure floor should be covered with straw to stimulate natural foraging behaviour and therefore reduce any abnormal behaviour. There should also be series of sturdy climbing frames, ropes and platforms, of varying heights to give the animals multiple dimensions to explore in their environ-ment, encouraging them to exercise and allow them to get away from each other or seek privacy. Active foraging throughout the day should be encouraged by methods including smearing food residues on branches, using mealworm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps, scatter feeding on hay floor.
Gibbons	1	Arb	H/O	Vegetables, nuts, boiled egg, mealworms, nutri-tionally balanced marketed brands of dried formulations, minimal fruit (and only if high-fibre, low-sugar fruits)	Social	2) 6) 11) 12) 14) 34)	These primates should have continual access to indoor and outdoor enclosures. Indoor enclosures should be well-ventilated, dry, warm and light. The indoor as well as outdoor enclosure floor should be covered with straw to stimulate natural foraging behaviour and therefore reduce any abnormal behaviour. There should also be series of sturdy climbing frames, ropes and platforms, of varying heights to give the animals multiple dimensions to explore in their environ-ment, encouraging them to exercise and allow them to get away from each other or seek privacy. Active foraging throughout the day should be encouraged by methods including smearing food residues on branches, using mealworm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps, scatter feeding on hay floor.
Chimpanzees, orang-utan, gorilla	1	Ter or Arb	H	Vegetables, nuts, browse, herbs, crickets, meal-worms, nutritionally balanced marketed brands of dried formula-tions, minimal fruit (and only if high-fibre, low-sugar fruits)	Social	2) 6) 11) 14)	These primates should have continual access to indoor and outdoor enclosures. Indoor enclosures should be well-ventilated, dry, warm and light. The indoor as well as outdoor enclosure floor should be covered with straw to stimulate natural foraging behaviour and therefore reduce any abnormal behaviour. Additionally, there should be a series of sturdy climbing frames, ropes, cargo nets and platforms, of varying heights to give the animals multiple dimensions to explore in their environment, encouraging them to exercise, express natural behaviour and allow them to get away from each other or seek privacy. All great apes like to make nests and therefore should be given sufficient bedding and nesting material (straw, twigs, cardboard, blanket, etc.), which is replaced often. Great apes also love to explore and play, and so should often be given novel objects and harmless destructive toys/boxes. Active foraging throughout the day should be encouraged by methods including smearing food residues on branches, using mealworm dispensers, food-balls, suspending or hanging food from branches, hiding food in crevices, holes drilled into tree stumps, and scatter feeding on hay floor.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
ANTEATERS, SLOTHS AND SIRENIANS							
Small and medium-sized armadillos	3	Ter	C	Mealworms, wax worms, boiled egg, dog food, some fruit, nutritionally balanced marketed brands of dried insecti-vore formulations	Solitary	1) 3) 51)	The indoor enclosure should have sufficient straw bedding for nest making, and the outdoor environment should be covered with soft substrate to allow digging. Piles of wood/tree trunks as well as planted vegetation are ideal for providing shelter and shade. Foraging enrichment includes mealworm dispensers and food hidden around enclosure, amongst logs and in crevices.
Tamandua	2	Arb	C	Mealworms, wax worms, boiled egg, dog food, some fruit, nutritionally balanced marketed brands of dried insecti-vore formulations	Solitary	2) 3) 4) 15) 51)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: if so, the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. There should also be series of sturdy climbing frames and platforms, of varying heights to give the animals multiple dimension to the environment, encouraging them to exercise and to allow them to get away from each other or seek privacy. Food should be placed around the branches, suspended or skewered on the branches.
Giant anteater	1	Ter	C	Mealworms, wax worms, boiled egg, dog food, some fruit, nutritionally balanced marketed brands of dried insecti-vore formulations	Solitary	11) 16) 18)	The outdoor enclosure should have soft substrate with planted vegetation, piles of logs and shelters. Indoor enclosures or shelter with sufficient bedding and places to allow refuge and escape should be continuously available. The outdoor area should be planted with vegetation and have suitable landscaping to provide shade, with hiding places to allow animals to get away from each other or seek privacy.
Sloths	1	Arb	H	Browse, vegetables, fruit, high-fibre biscuits and nutritionally balanced marketed brands of dried herbivore formulations	Solitary	2) 36)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: if so, the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. Well-ventilated enclosure that is dry and warm. These animals spend the majority of their lives in trees in tropical forests, are mostly active at night, and climb to the ground only to defecate. The enclosure should have a mass of branches, shelters, vegetation and apparatus with crevices to hide fruit and vegetables. These should be at varying heights to give the animals multiple dimensions to the environment. The enclosure floor should be covered in leaf litter or bark chippings. Food should be placed around the branches, suspended or skewered on the branch-es.
Manatees and dugongs	3	Aqu	H	Vegetation, lettuce, bean sprouts, broccoli, carrot, elephant vitamins	Semi-social	For 2 animals, pool area >80m^2 (for each additional animal, +20m^2) & depth 2m Provide simultane-ous resources in case of competi-tion	Manatees and dugongs do not have structured social groups, and tend to be solitary unless sharing resources such as warm water sites, or when mating season occurs. The closest social bond is found between mother and calf, where the calf Is weaned at 1-2 years. Therefore these animals may be kept in groups, but efforts should be made to always provide multiple resources so that each animal can access them at all times (food, warm water currents, refuge areas). Food enrichment can include floating vegetables on the water's surface, filling food balls with vegeta-bles, and stuffing vegetation into structures that are then attached to the bottom to mimic sea grass grazing. These animals can also benefit from play items in their enclosure such as balls and mats to rub against.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
RODENTS AND SIMILAR							
Mongolian desert rats (gerbils), chinchilla	3	Ter	H	Vegetables, hay, nutri-tionally balanced marketed brands of dried herbivore formulations	Social	41) 45) 46) 47) Gerbil: 40) 42) 44) Chinchilla: 39) 43)	There should be continual access to an indoor enclosure containing sufficient bedding to allow nest building and privacy from view, and the temperature should be carefully monitored. In warmer climates an outdoor enclosure may be provided, and should be covered with soft substrate to allow digging, and have branches and planted vegetation to provide shelter and shade. Active feeding should be encouraged by hiding food in crevices, using food balls, drilling holes into branches, etc. Chinchillas must be given elevated platforms and branches to perch on, and rocks to hide under.
Degu	3	Ter	H	Leafy vegetables, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	40) 41) 45) 46) 47)	There should be continual access to an indoor enclosure containing sufficient bedding to allow nest building and privacy from view, and the temperature should be carefully monitored. In warmer climates an outdoor enclosure may be provided, and should be covered with soft substrate to allow digging, and have branches and planted vegetation to provide shelter and shade. Active feeding should be encouraged by hiding food in crevices, using food balls, drilling holes into branches, etc.
Squirrels, flying squirrels	3	Ter / Arb	H	Vegetables, nuts and low sugar fruit, nutritionally balanced marketed brands of dried herbivore formulations	Solitary and Social	2) 3) 4) 17) 19)	These animals live mainly in the trees, so the enclosure should have a mass of branches, shelters, vegetation and apparatus with crevices to hide food. These should be at varying heights to give the animals multiple dimensions to the environment, encouraging them to exercise and allowing them to get away from each other or seek privacy. There should be access to the ground where there is substrate to allow for digging, with natural light and places to bask in sun.
Coypu (Nutria)	2	Aqu / Ter	H	Vegetation, vegetables, hay, nutritionally bal-anced marketed brands of dried herbivore formulations	Social	3) 18) 19) For 2 animals, pool area >2m^2 & depth 0.5m	There should be continual access to indoor and outdoor enclosures, where indoor have suf-ficient bedding. The outdoor enclosure should be landscaped with a pool allowing the animal complete submergence, and planted with vegetation to provide shelter, shade and privacy. Food should be scattered throughout enclosure, with browse and hay available at specific points.
Giant squirrels, pacarana, large flying squirrels, prehensile-tailed porcupine	2	Arb	H	Fruit, vegetables, nuts, nutritionally balanced marketed brands of dried herbivore formulations	Solitary	2) 3) 15) 17) 19)	These animals live mainly in the trees, so the enclosure should have a mass of branches, shelters, vegetation and apparatus with crevices to hide food. These should be at varying heights to give the animals multiple dimensions to the environment, encouraging them to exercise and allowing them to get away from each other or seek privacy. There should be constant access to the ground where there is substrate to allow for digging, with natural light and places to bask in sun. Active feeding should be encouraged through vegetables, fruit and food-balls being suspended or hung from branches, hiding food in crevices, and holes drilled into tree stumps and filled with food, etc.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Porcupines (see below for separate species)	2	Ter or Arb	H	Root vegetables, corn, high-fibre biscuits, nutritionally balanced marketed brands of dried formulations, salt lick	New World – Solitary Old World – Social	Old World: 1) 3) 6) 17) 19) New World: 2) 8) 19)	These animals are generally nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. There should be continual access to indoor enclosure or shelter containing sufficient bedding to allow nest building and privacy from view. The outdoor enclosure should be covered with soft substrate to allow digging, have piles of wood/tree trunks as well as planted vegetation to provide shelter and shade. Active feeding should be encouraged by hiding food in crevices, using food balls, drilling holes into tree stumps, etc. These animals dig for roots in the wild, so in order to mimic this, whole root vegetables and food pellets should be hidden under the soil/bark chippings, as well as concealing food amongst piles of wood.
Beavers	2	Aqu / Ter	H	Vegetation, vegetables, wood, nutritionally balanced marketed brands of dried herbivore formulations	Social	3) 18) 19) 34) For 5 animals, pool area >30m^2 & depth 0.8m	The animals should have continual access to indoor and outdoor enclosures, where the indoor space has sufficient bedding and the outdoor enclosure us landscaped with a pool allowing the animal complete submergence, and planted with vegetation to provide shelter, shade and privacy. Beavers should have a den accessible via the water and logs and branches to encourage them to display natural behaviours. Food can be scattered throughout enclosure, with browse and hay available at specific points. Workable wood should be included and regularly replaced.
Prairie dog	3	Ter	H	Fruit, nuts, vegetables, seeds, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 49) 50)	Continual access should be given to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation dependent upon animals needs, with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other. Soft substrate should be provided to allow for digging since Prairie dogs live in burrows. This species are social animals and therefore should be housed in groups. Active feeding should be encouraged by hiding food in crevices, drilling holes into tree stumps and filling with food, etc.
Agoutis, izcacha, jumping hare	3	Ter	O	Fruit, nuts, vegetables, seeds, mealworms, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 3) 6) 19) 36)	Continual access should be given to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation dependent upon animals needs, with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other. Climbing apparatus will provide extra enrichment, and soft substrate should be provided to allow for digging. Active feeding should be encouraged by hiding food in crevices, drilling holes into tree stumps and filling with food, etc.
Marmots	3	Ter	O	Fruit, nuts, vegetables, seeds, mealworms, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 49) 50)	Continual access should be given to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation dependent upon animals needs, with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other. Climbing apparatus will provide extra enrichment, and soft substrate should be provided to allow for digging. Active feeding should be encouraged by hiding food in crevices, drilling holes into tree stumps and filling with food, etc.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Capybara	2	Aqu / Ter	H	Vegetation, vegetables, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	6) 18) 19) For 5 animals, pool area >6m² (for each addition, +1m²) & depth 0.5m Indoor area should also have a pool	Continual access should be given to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation to provide shelter, shade and privacy, and with a pool allowing the animal complete submergence. Food should be scattered throughout enclosure, and browse and hay made available at specific points.
Muskrat	3	Aqu / Ter	O	Vegetation, vegetables, hay, mealworms, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 3) 18) 19)	Continual access should be given to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation to provide shelter, shade and privacy, and with a pool allowing the animal complete submergence. Food should be scattered throughout enclosure, and browse and hay made available at specific points.
Brush-tailed porcupine, long-tailed porcupine	2	Ter	H	Root vegetables, fruit, nuts, nutritionally balanced marketed brands of dried herbivore formulations	Social	2) 3) 6) 19) 35)	This species is nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. There should be continual access to indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be covered with soft substrate to allow digging, with piles of wood/tree trunks as well as planted vegetation to provide shelter and shade. These animals dig for roots in the wild, so in order to mimic this, whole root vegetables and food pellets should be hidden under the soil/bark chippings, as well as concealing food amongst piles of wood.
North American porcupine	2	Ter / Arb	H	Root vegetables, fruit, nutritionally balanced marketed brands of dried herbivore formulations	Solitary	2) 6) 19)	This species often rests in trees in the daytime, and so their enclosure should have branches and shelters at varying heights to give the animals multiple dimensions to the environment, encouraging them to exercise and to allow animals to get away from each other or seek privacy. There should be access to the ground where there is substrate to allow for digging, and piles of wood/tree trunks as well as planted vegetation to provide shelter and shade, natural light, and places to bask in sun. The indoor enclosure or shelter should have sufficient straw bedding. These animals dig for roots in the wild, so in order to mimic this, whole root vegetables and food pellets should be hidden under the soil/bark chippings, as well as concealing food amongst piles of wood.
Pacas	2	Ter	O	Fruit, nuts, vegetables, seeds, mealworms, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 3) 19) 36)	This species is nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. There should be continual access to indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be covered with soft substrate to allow digging, with piles of wood/tree trunks as well as planted vegetation to provide shelter and shade. As social animals they prefer living in groups.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Acouchis	3	Ter	H	Fruit, nuts, vegetables, seeds, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 3) 6) 19) 36)	There should be continual access to indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be covered with soft substrate to allow digging, with piles of wood/tree trunks as well as planted vegetation to provide shelter and shade. As social animals they prefer living in groups.
Hutias, rock rats	2	Ter / Arb	O	Fruit, nuts, vegetables, seeds, mealworms, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 2) 3) 6) 19)	These animals are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. Continual access to indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation dependent upon animals needs with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other. Climbing apparatus will provide extra enrichment. The animals should have access to soft substrates to allow digging behaviour. As social animals they prefer living in groups.
Patagonian hares / mara	3	Ter	H	Fruit, nuts, vegetables, herbs, seeds, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 3) 6) 19)	There should be continual access to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation dependent upon animals needs with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other, as well as soft substrate to allow for digging. As social animals they prefer living in groups.
Hares	3	Ter	H	Vegetables, herbs, seeds, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	3) 6)	There should be continual access to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation dependent upon animals needs with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other, as well as soft substrate to allow for digging. As social animals they prefer living in groups.
Rabbits, pikas	3	Ter	H	Vegetables, herbs, seeds, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	1) 6) 49)	There should be continual access to the indoor enclosure containing sufficient bedding to allow nest building and privacy from view. The outdoor area should be planted with vegetation dependent upon animals needs with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other, as well as soft substrate to allow for digging. As social animals they prefer living in groups.
CARNIVORES							
Fennec fox	3	Ter	O	Smaller prey meat, some vegetables, boiled eggs, dog cereal, berries, crickets.	Social	1) 3) 11) 36)	This species is nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The indoor enclosure or shelter should have sufficient bedding and places to allow refuge and escape. The outdoor area should be planted with vegetation with suitable landscaping to provide hiding places, look-outs and to allow animals to get away from each other or seek privacy. As social animals they prefer living in groups.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Medium-sized foxes (e.g. sand fox, Arctic fox, Corsac fox, kit fox), bat-eared fox, racoon dog	2	Ter	O	Smaller prey meat, some vegetables, boiled eggs, dog cereal, berries, fish, mealworms, crickets.	Solitary	1) 3) 6) 8) 11)	These animals are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. Indoor enclosures or shelter should have bedding and ventilation, and all animals should have access to the outdoor enclosure throughout the day. Outdoor enclosures should be planted with vegetation with suitable landscaping to provide hiding places, look-outs and to allow animals to get away from each other or seek privacy. Piles of wood/tree trunks can be used to hide food. The animals should have sufficient room to run, and have natural substrate available to allow for digging. Introducing sacks of straw with the scent of prey animals will provide added enrichment.
Bush-dog	2	Ter	C	Ground meat, carcasses of horses, cattle, sheep and goats, freshly-killed mammals and birds including chicken, dog cereal, berries, crickets.	Social	1) 3) 6) 11) 18) 34)	Indoor enclosures or shelter should have bedding, light and be well-ventilated. All animals should have access to the outdoor enclosure throughout the day, which should be planted with vegetation and have suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. The outdoor areas should have piles of wood/tree trunks to hide food in, as well as planted vegeta-tion, there should be sufficient room for the animals to run, and natural substrate available to allow for digging. Introducing sacks of straw with the scent of prey animals will provide added enrichment.
Red fox, grey foxes, south American foxes	2	Ter	C	Smaller prey meat, some vegetables, fruit, boiled eggs, dog cereal, berries, mealworms, crickets.	Solitary	1) 3) 6) 11)	Indoor enclosures or shelter should have bedding, light and be well-ventilated. All animals should have access to the outdoor enclosure throughout the day, which should be planted with vegetation and have suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. The outdoor areas should have piles of wood/tree trunks to hide food in, as well as planted vegeta-tion, there should be sufficient room for the animals to run, and natural substrate available to allow for digging. Introducing sacks of straw with the scent of prey animals will provide added enrichment.
Jackals, coyote, dhole	2	Ter	C	Ground meat, carcasses of horses, cattle, sheep and goats, freshly-killed mammals and birds including chicken, smaller prey meat and some vegetables, boiled eggs, dog cereal	Social	3) 6) 11) 34)	Indoor enclosures or shelter should have bedding, light and be well-ventilated. All animals should have access to the outdoor enclosure throughout the day, which should be planted with vegetation and have suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. They should have sufficient room to run and to bask in the sun, and shelter areas to avoid extreme weather. Natural substrate should be available to allow for digging. Introducing sacks of straw with the scent of prey animals will provide added enrichment. Feeding times should be varied on a daily, weekly or on a seasonal scale with 1 to 2 fasting days per week. Food enrichment should include hiding food items and varying the location where food is offered to increase active food searching behaviour, but because these are generally pack animals, care should be taken to ensure that all individuals receive their allocated ration. As social animals they should be housed in groups.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Maned wolf	2	Ter	C	Ground meat, carcasses of horses, cattle, sheep and goats, freshly-killed mammals and birds including chicken, some fruit and vegetables, boiled eggs, dog cereal, berries, crickets.	Solitary	1) 3) 6) 8) 11) 34)	Indoor enclosures or shelter should have bedding, light and be well-ventilated. All animals should have access to the outdoor enclosure throughout the day, which should be planted with vegetation and have suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. They should have sufficient room to run and to bask in the sun, and shelter areas to avoid extreme weather. Natural substrate should be available to allow for digging. Introducing sacks of straw with the scent of prey animals will provide added enrichment.
Wolf, African hunting dog	1	Ter	C	Ground meat, carcasses of horses, cattle, sheep and goats, freshly-killed mammals and birds including chicken.	Social	1) 3) 6) 8) 11)	Indoor enclosures or shelter should have bedding, light and be well-ventilated. All animals should have access to the outdoor enclosure throughout the day, which should be planted with vegetation and have suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. They should have sufficient room to run and to bask in the sun, and shelter areas to avoid extreme weather. Natural substrate should be available to allow for digging. Introducing sacks of straw with the scent of prey animals will provide added enrichment. Feeding times should be varied on a daily, weekly or on a seasonal scale with 1 to 2 fasting days per week. Food enrichment should include hiding food items and varying the location where food is offered to increase active food searching behaviour, but because these are generally pack animals, care should be taken to ensure that all individuals receive their allocated ration. As social animals they should be housed in groups.
Sun bear	1	Ter / Arb	O	Meat carcasses, meal-worms, fruit, crickets, root vegetables, fruit, nutritionally balanced marketed brands of dried omnivore formulations	Solitary	1) 2) 11) 14) 18) 21)	All bears should be given bedding and nesting material e.g. straw, twigs, etc., and natural substrate - sand, bark chippings or soil to encour-age natural behaviours. Indoor shelters should have bedding, light and warmth in all climates as well as efforts to make this area stimulating with tree trunks, nest baskets and platforms. Outdoor enclosures should include climbing frames, platforms, rocks and palisades to give the bears multiple dimensions to the environment, encour-aging them to exercise and to allow animals to get away from each other or seek privacy. All bears should have a wading pool, and since they love to explore and play, the introduction of novel objects is recommended. Bear enclosures should not be next to or in visual range of prey species as this may cause stress to both species. A variety of food items should be provided at varying feeding times, with 1 to 2 fasting days per week. Providing the animals with the whole plant/carcass encourages the display of natural behaviours, and foraging can be increased by scattering/hiding small foods, which may reduce any abnormal behaviours. Hanging sacks holding food items above the ground encourages the bear to stand and use its muscles. Ice blocks can be provided containing fruit and vegetables for most terrestrial bear species.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Other bears, giant panda	1	Ter / Arb	O/H	Meat carcasses, shellfish, fish, mealworms, crickets, fruit, root vegetables, nutritionally balanced marketed brands of dried omnivore formulations. Panda – bamboo, vegetables, nutritionally balanced marketed brands of dried herbivore formulations	Solitary	1) 2) 11) 14) 18) 21) 22) For 2 animals, pool area >50m² (for each addition, +2m²) & depth 1m	All bears should be given bedding and nesting material e.g. straw, twigs, etc. (particularly spectacled and Asiatic bears), and natural substrate - sand, bark chippings or soil to encourage natural behaviours. Indoor shelters should have bedding, light and warmth in all climates as well as attempts made to make this area stimulating with tree trunks, nest baskets and platforms. Outdoor enclosures should include climbing frames, platforms, rocks and palisades to give the bears multiple dimensions to the environment, encouraging them to exercise and to allow animals to get away from each other or seek privacy. More elaborate structures can be made for the arboreal species (sun, spectacled). All bears should have a wading pool, and since they love to explore and play, the introduction of novel objects is recommended. Bear enclosures should not be next to or in visual range of prey species as this may cause stress to both species. A variety of food items should be provided at varying feeding times, with 1 to 2 fasting days per week. Providing the animals with the whole plant/carcass encourages the display of natural behaviours, and foraging can be increased by scattering/hiding small foods, which may reduce any abnormal behaviours. Hanging sacks holding food items above the ground encourages the bear to stand and use its muscles. Ice blocks can be provided containing fruit and vegetables for most terrestrial bear species.
Polar bear	1	Ter	C	Meat carcasses, fish, root vegetables, nutritionally balanced marketed brands of dried carnivore formulations	Solitary	2) 4) 14) 18) For 1 animal, pool area >400m² (for each addition, +20m²) & depth 2m	All bears should be given bedding and nesting material (straw, twigs, etc.), and natural substrate - sand, bark chippings or soil to encourage natural behaviours. Indoor shelters should have bedding, light and warmth in all climates as well as attempts made to make this area stimulating with tree trunks, nest baskets and platforms. Outdoor enclosures should include climbing frames, platforms, rocks and palisades give the bears multiple dimensions to their environment, encouraging them to exercise and to allow animals to get away from each other or seek privacy. Polar bears should be provided with an elevated area to be able to look out of their enclosure, and use their highly developed sense of smell, as this has been linked to reduced abnormal behaviour. Polar bears require a large and deep pool to allow swimming and diving. Bears love to explore and play, so the introduction of novel objects is advisable. Bear enclosures should not be next to or in visual range of prey species as this may cause distress. A variety of food items should be provided at varying feeding times, with 1 to 2 fasting days per week. Providing the animals with the whole plant/carcass encourages the display of natural behaviours, and foraging can be increased by scattering/hiding small foods, which may reduce any abnormal behaviours. Hanging sacks holding food items above the ground encourages the bear to stand and use its muscles. Other foraging enrichment includes ice blocks containing fruit and vegetables and frozen fish blocks.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Red panda, raccoon	2	Arb / Ter	O	Meat, mealworms, fruit, bamboo, dog biscuits, nutritionally balanced marketed brands of dried herbivore formulations	Social	2) 3) Racoons: 18)	The indoor enclosure should have sufficient bedding, platforms, nest baskets and access ramps. The outdoor area should have platforms at varied heights, tree trunks, mass of branches to allow climbing and shelters (raccoons need dark places during the day). The enclosure should provide natural light and places to bask in sun. Active feeding can be encouraged through suspending vegetables, fruit and food-balls from branches, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc. Natural substrates should be given to allow for digging, and these animals have been shown to engage with running water. Raccoons are social animals and prefer living in groups.
Kinkajou, honey badger, Ring-tailed cat (ringtails)	2	Arb	O	Fruit, vegetables, crickets and mealworms, nutri-tionally balanced marketed brands of dried carnivorous / omnivore formulations	Social	2) 3) 6)	These animals are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The indoor enclosure should have sufficient bedding, platforms, nest baskets and access ramps. The outdoor area should have platforms at varied heights, tree trunks, mass of branches to allow climbing and shelters. Active feeding can be encouraged through suspending vegetables, fruit and food-balls from branches, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc.
Coatis	2	Arb / Ter	O	Fruit, vegetables, crickets and mealworms, nutri-tionally balanced marketed brands of dried omnivore formulations	Social	2) 3)	The indoor enclosure should have sufficient bedding, platforms, nest baskets and access ramps. The outdoor area should have platforms at varied heights, tree trunks, mass of branches to allow climbing and shelters. The enclosure should provide natural light and places to bask in the sun. Active feeding can be encouraged through suspending vegetables, fruit and food-balls from branches, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc. Natural substrates should be given to allow for digging. Coatis are social animals and prefer living in groups.
Weasels	2	Ter	C	Ground meat, meal-worms, raw eggs, nutritionally balanced marketed brands of dried carnivore formulations	Solitary	3) 4)	The indoor enclosure should have sufficient bedding, platforms, nest baskets and access ramps. The outdoor area should have platforms at varied heights, tree trunks, and piles of branch-es to allow climbing and shelters. The enclosure should provide natural light and places to bask in the sun, and natural substrate to allow for digging. Active foraging can be encouraged through mealworm dispensers, food-balls, suspending food above the ground, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc.
Polecat, mink, ferret	2	Ter	C	Ground meat, meal-worms, day-old chicks, fruit, nutritionally balanced marketed brands of dried carnivore formulations	Solitary	3) 4) 18)	The indoor enclosure should have sufficient bedding, platforms, nest baskets and access ramps. The outdoor area should have platforms at varied heights, tree trunks, mass of branches to allow climbing and shelters. The enclosure should provide natural light and places to bask in the sun. The animals should have access to natural substrates to allow digging behaviour, and mink should be given a pond or running water since they are highly motivated to access water. Active foraging can be encouraged through mealworm dispensers, food-balls, suspending food above the ground, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Martens	2	Arb / Ter	C	Ground meat, mealworms, day-old chicks, fruit, nutritionally balanced marketed brands of dried carnivore formulations	Solitary	2) 4) 17) 21)	The indoor enclosure should have sufficient bedding, platforms, nest baskets and access ramps. The outdoor area should have platforms at varied heights, tree trunks, mass of branches to allow climbing and shelters. The enclosure should provide natural light and places to bask in the sun. The animals should have access to natural substrates to allow digging behaviour. Active foraging can be encouraged through mealworm dispensers, food-balls, suspending food above the ground, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc.
Tayra	2	Ter / Arb	O	Ground meat, mealworms, day-old chicks, fruit, vegetables, nutritionally balanced marketed brands of dried omnivore formulations	Solitary	2) 3) 17)	The indoor enclosure should have sufficient bedding. The outdoor area should have platforms at varied heights, tree trunks and shelters. The enclosure should provide natural light and places to bask in the sun. The animals should have access to soft substrates to allow digging behaviour, and piles of wood and vegetation. Active foraging can be encouraged through mealworm dispensers, food-balls, suspending food above the ground, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc.
Wolverine / glutton	1	Ter	C	Meat carcasses, ground meat, mealworms, chicken, nutritionally balanced marketed brands of dried carnivore formulations	Solitary	1) 2) 4) 21)	The indoor enclosure should have sufficient bedding. The outdoor area should have platforms at varied heights, tree trunks and shelters. The enclosure should provide natural light and places to bask in the sun. The animals should have access to soft substrates to allow digging behaviour, and piles of wood and vegetation. Active foraging can be encouraged through mealworm dispensers, food-balls, suspending food above the ground, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc.
Skunks, badgers	1 or 2	Ter	O	Ground meat, mealworms, fruit, root vegetables, eggs, nutritionally balanced marketed brands of dried carnivore formulations	Solitary	3) 6) 17) (some species: 18) Badgers: 1) 3) 4) 17)	These animals are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The indoor enclosure should have sufficient bedding and places to allow refuge and escape. The outdoor area should be planted with vegetation with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. The animals should have access to soft substrates to allow digging behaviour. Active foraging can be encouraged through mealworm dispensers, food-balls, suspending food above the ground, hiding food in crevices, drilling holes and stuffing food in tree stumps, etc.
Short-clawed otter	1	Aqu / Ter	O	Ground meat, mealworms, fruit, vegetables, fish, day-old chicks, cat food, boiled egg, nutritionally balanced marketed brands of dried carnivore formulations	Social	2) 6) 15) 18) For 2 animals, pool area >10m² (for each addition, +2m²) & depth 0.5m	This species should have continual access to a dry and warm den with straw bedding. They should have access to shallow water, running into a deeper pool allowing the animal to swim completely submerged. Active foraging can be encouraged through cricket dispensers, food-balls, fish frozen in ice, suspending food above the ground, hiding food in crevices, drilling holes into tree stumps and filling with food etc.
River otters, cape clawless otter	1	Aqu / Ter	O	Ground meat, mealworms, fruit, vegetables, fish, day-old chicks, cat food, nutritionally balanced marketed brands of dried carnivore formulations	Social	6) 15) 18) For 2 animals, pool area >20m² & depth 0.8m	These animals should have continual access to a dry and warm den with straw bedding. They should have access to shallow water, running into a deeper pool allowing the animal to swim completely submerged. Active foraging can be encouraged through cricket dispensers, food-balls, fish frozen in ice, suspending food above the ground, hiding food in crevices, drilling holes into tree stumps and filling with food etc.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Giant otter	1	Aqu / Ter	O	Ground meat, mealworms, fruit, vegetables, fish, day-old chicks, nutritionally balanced marketed brands of dried carnivore formulations	Social	6) 15) 18)	This species should have continual access to a dry and warm den with straw bedding. They should have access to shallow water, running into a deeper pool allowing the animal to swim completely submerged. Active foraging can be encouraged through cricket dispensers, foodballs, fish frozen in ice, suspending food above the ground, hiding food in crevices, drilling holes into tree stumps and filling with food etc.
Sea otter	1	Aqu	C	Fish, shellfish, squid, vegetables, nutritionally balanced marketed brands of dried carnivore formulations	Social	6) 18) For 2 animals, pool area >60m^2 (for each addition, +25m^2) & depth 2m	This species should have continual access to a dry and warm den with straw bedding. They should have access to shallow water, running into a deeper pool allowing the animal to swim completely submerged. Active foraging can be encouraged through cricket dispensers, foodballs, fish frozen in ice, suspending food above the ground, hiding food in crevices, drilling holes into tree stumps and filling with food etc.
Dwarf mongoose	2	Ter		Ground meat, mealworms, vegetables, day-old chicks, nutritionally balanced marketed brands of dried carnivore formulations		1) 3) 15)	The indoor enclosure should have sufficient bedding and places to allow refuge and escape. The outdoor area should be planted with vegetation with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. The environment should have piles of logs and rocks, giving the animals crevices to hide and search for food. The enclosure should provide natural light and places to bask in the sun. The animals should have access to soft substrates to allow digging behaviour.
Meerkats, zebra mongoose, yellow mongoose	2	Ter		Ground meat, mealworms, vegetables, day-old chicks, nutritionally balanced marketed brands of dried carnivore formulations	Social	1) 3) 15) 20)	The indoor enclosure should have sufficient bedding and places to allow refuge and escape. The outdoor area should be planted with vegetation with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. The environment should have piles of logs and rocks, giving the animals crevices to hide and search for food. The enclosure should provide natural light and places to bask in the sun. The animals should have access to soft substrates to allow digging behaviour.
Other mongoose species	2	Ter		Ground meat, mealworms, vegetables, day-old chicks, nutritionally balanced marketed brands of dried carnivore formulations		1) 3) 15) 17) 20) Marsh mongooses 18)	The indoor enclosure should have sufficient bedding and places to allow refuge and escape. The outdoor area should be planted with vegetation with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. The environment should have piles of logs and rocks, giving the animals crevices to hide and search for food. The enclosure should provide natural light and places to bask in the sun. The animals should have access to soft substrates to allow digging behaviour.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Black-footed cat, leopard cat, rusty spotted cat, Pallas' cat, tree viverrids, fossa, bear cat, civet, wildcat, reed cat, jaguarondi	1 or 2	Ter or Ter / Arb	C	Chopped horse or cow meat is advisable as well as whole carcasses on the bone (small mammals and chicken). Carnivore supplements (such as Mazuri) provide required vitamins and minerals (different species have different requirements)	Solitary	2) 4) 6) 11) 15) 17) 21) 23) 52) 53) Fishing cats and flatheaded cats: 18)	These smaller agile cats do not need as large an enclosure as for the big cats but they should have a roof. They should not be housed in the vicinity of prey species, which could cause substantial stress to both species. Night access to the outdoor enclosure is advisable, allowing the animals to express normal behaviours. Indoor shelters should have bedding, light, warmth and ventilation as well as efforts to make this area stimulating with platforms and access ramps. The outdoor area should have climbing frames, platforms, rocks, natural substrate and planted vegetation to provide shade, hiding places and look-outs - encouraging exercise and to allow animals to get away from each other or seek privacy. Running water and/or a small pool is recommended. All animals should have access to the outdoor enclosure throughout the day. Feeding times should be varied on a daily, weekly or on a seasonal scale with 1 to 2 fasting days per week. Smaller cats are more agile and therefore feeding enrichment should encourage this behaviour - hanging food off the ground to encourage the animals to jump and tear down the food, scattering food randomly around the enclosure and on branches and hiding meat under logs, in crevices or on high platforms.
Lynxes, serval, medium-sized cats, clouded leopard	1	Ter or Ter / Arb	C	Chopped horse or cow meat is advisable as well as whole carcasses on the bone (small mammals and chicken). Carnivore supplement (such as Mazuri) provides required vitamins and minerals). (Different species have different requirements)	Solitary	2) 4) 6) 11) 15) 21) 23) 52) 53)	These smaller agile cats do not need as large an enclosure as for the big cats but they should have a roof. They should not be housed in the vicinity of prey species, which would cause substantial stress to both species. Night access to the outdoor enclosure is advisable, allowing the animals to express normal behaviours. Indoor shelters should have bedding, light, warmth and ventilation as well as efforts to make this area stimulating with platforms and access ramps. The outdoor area: climbing frames, platforms, rocks, natural substrate and planted vegetation to provide shade, hiding places and look-outs - encouraging exercise and to allow animals to get away from each other or seek privacy. Running water and/or a small pool is recommended. All animals should have access to the outdoor enclosure throughout the day. Feeding times should be varied on a daily, weekly or on a seasonal scale with 1 to 2 fasting days per week. Smaller cats are more agile and therefore feeding enrichment should encourage this behaviour - hanging food off the ground to encourage the animals to jump and tear it down, scattering food randomly around the enclosure and on branches and hiding meat under logs, in crevices or on high platforms. Lynx are agile big cats and should have enclosures with a strong fence of at least 4 metres high with a roof.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Pumas, jaguar, leopard, snow leopard	1	Ter / Arb	C	Whole or part carcasses of horse or cow on the bone is advisable. Rodents and fowl may also be used to vary the diet but should not be the dominant part of the diet. Pig and sheep is not advisable. Additional, nutritionally balanced marketed brands of dried carnivore formulations (such as Mazuri) provides required vitamins and minerals.	Solitary	2) 4) 6) 11) 15) 21) 23) 52) 53) Jaguars: 18)	These agile big cats should have enclosures with a strong fence of at least 4 metres high with a roof. Big cats must not be housed in the vicinity of prey species, which would cause substantial stress to both species. All animals should have access to the outdoor enclosure throughout the day. Night access to the outdoor enclosure is advisable, allowing the animals to express normal behaviours. Indoor shelters should have bedding, light, warmth and ventilation as well as efforts to make this area stimulating with platforms and access ramps. The outdoor area should have climbing frames, platforms, rocks, natural sub-strate and planted vegetation to provide shade, hiding places and look-outs - encouraging exercise and to allow animals to get away from each other or seek privacy. Running water adds interest and a bathing pool for jaguar would be advisable. Captive cats often have more bulk and less muscle than wild cats therefore manage-ment of the animals should encourage exercise and a lot of muscle use, through hanging food in sacks off the ground to encourage the animals to jump and tear down the food, hiding meat under logs, in crevices or on high platforms in the enclosure or placing the food in cardboard boxes to be ripped open. Feeding times should be varied on a daily, weekly or on a seasonal scale with 1 to 2 fasting days per week.
Lions, tigers	1	Ter	C	Whole or part carcasses of horse or cow on the bone is advisable. Rodents and fowl may also be used to vary the diet but should not be the dominant part of the diet. Pig and sheep is not advisable. Additional, nutritionally balanced marketed brands of dried carnivore formulations (such as Mazuri) provides required vitamins and minerals.	Lion – Social Tiger – Solitary	2) 6) 11) 15) 21) 23) 52) 53) Tigers: 4) 18)	Big cats must not be housed in the vicinity of prey species, which would cause substantial stress to both species. All animals should have access to the outdoor enclosure throughout the day. Night access to the outdoor enclosure is advisable, allowing the animals to express normal behaviours. Indoor enclosures should have bedding, light and ventilation. Outdoor enclo-sures should be planted with vegetation with suitable landscaping, natural substrate, platforms and access ramps/tree trunks, to provide shade, hiding places, look-outs and enrichment. Tigers are good swimmers and should be provided with pools, but lions will generally not use a pool. Introducing sacks of straw with the scent of prey animals will provide added enrichment. Captive cats often have more bulk and less muscle than wild cats therefore management of the animals should encourage exercise and a lot of muscle use. Feeding times should be varied on a daily, weekly or on a seasonal scale with 1 to 2 fasting days per week. For tigers, food enrichment includes methods such as placing food on the top of telegraph poles or on platforms in the enclosure. For lions, hiding the meat in cardboard boxes should encourage the animal to tear the containers open. Lions should be housed in groups, while tigers can be kept in bonded pairs as this may increase activity levels and decrease abnormal behaviour.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Cheetah	1	Ter	C	Whole or part carcasses of horse or cow on the bone is advisable. Rodents and fowl may also be used to vary the diet but should not be the dominant part of the diet. Pig and sheep is not advisable. Additional, nutritionally balanced marketed brands of dried carnivore formulations (such as Mazuri) provides required vitamins and minerals.	Solitary	2) 4) 6) 11) 15) 21) 52) 53)	Big cats must not be housed in the vicinity of prey species, which would cause substantial stress to both species. All animals should have access to the outdoor enclosure throughout the day. Night access to the outdoor enclosure is advisable, allowing the animals to express normal behaviours. Indoor shelters should have bedding, light, warmth and ventilation as well as efforts to make this area stimulating with platforms and access ramps. The outdoor area should have climbing frames, platforms, rocks, natural sub-strate and planted vegetation to provide shade, hiding places and look-outs - encouraging exercise and to allow animals to get away from each other or seek privacy. It should be long enough to allow animals to run if they desired. Enrichment should include encouraging active feeding through hiding food and scents, using food on lures or zip wires to simulate hunting behaviour, whole carcass feeding, and structural variability such as running water features.
Hyaenas and aardwolf	1	Ter	C	Ground meat, whole carcasses of horses, cattle, sheep and goats, freshly-killed mammals and birds including chicken. Some smaller prey meat, some vegeta-bles, boiled eggs, dog cereal, raisins, crickets.	Social	1) Hyaenas: 6) 11) 21) 53) Aardwolf: 11) 21)	Indoor enclosures or shelter should have bedding, light and be well-ventilated. All animals should have access to the outdoor enclosure throughout the day, which should be planted with vegetation and have suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other or seek privacy. They should have sufficient room to run and to bask in the sun, and shelter areas to avoid extreme weather. Natural substrate should be available to allow for digging. Introducing sacks of straw with the scent of prey animals will provide added enrichment. Food enrichment should include hiding food items and varying the location where food is offered to increase active food searching behaviour, but because these are generally pack animals, care should be taken to ensure that all individuals receive their allocated ration. As social animals they should be housed in groups.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Seals, fur seals, sea lions and walrus	1	Aqu	C	Fish, squid, vitamin/ mineral supplements	Social	14) 27) Terrestrial area sizes for each seal: 10m^2; and for each sea lion, fur seal and walrus: 15m^2. For 5 seals, pool area: >80m^2 (for each additional animal, +10m^2) & depth 2m For 5 sea lions/fur seals, pool area: >150m^2 (for each additional animal, +15m^2) & depth 3m For 3 walrus, pool area :>250m^2 (for each additional animal, +40m^2) & depth 10m	Enclosures should have outdoor saltwater pools of sufficient depth to allow free swimming and rockwork to allow easy access to ledges, islands and exposed rocks to allow basking in the sun. Artificial pools should be painted dark, non-reflective colours to reduce UV reflection and eye problems. Sterilising the water with ozone is preferable to chlorine, and should be kept within species-specific temperature ranges. Multiple pools are preferable to one single pool to allow animals the choice of different environments and to avoid each other if desired. Indoor pools with haul out areas are required for those species that are sensitive to the cold, dependent on the ambient temperatures at the facility. There should be multiple haul out areas with a variety of shelves to give the animals choice and the opportunity to all haul out at the same time. Novel objects like floating plastic containers/ buoys, sinking balls, puzzle feeders, ropes and hose structures making "artificial kelp" will encourage curiosity and play.
AARDVARK AND HYRAXES							
Aardvark	2	Ter	C	Mealworms, wax worms, boiled egg, dog food, root vegetables, nutritionally balanced marketed brands of dried insecti-vore formulations	Solitary	1) 3)	These animals are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The indoor enclosure should have sufficient bedding and places to allow refuge and escape. The enclosure should have soft substrate with planted vegeta-tion, piles of logs and shelters. Food may be hidden in crevices and scattered around the enclosure, encouraging foraging behaviour.
Hyraxes	2	Ter / Arb	H	Vegetables, herbs, seeds and hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	2) 8) 36)	The animals should have continual access to indoor enclosures or shelter containing sufficient bedding to allow nest building and privacy from view. The outdoor area should have boulders and rocky outcrops with suitable landscaping to provide shade, hiding places, look-outs and to allow animals to get away from each other. Crevices can be used or built in order to hide food.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
ELEPHANTS							
Elephants	1	Ter	H	High in fibre and low in nutrients. Browse and hay should comprise at least 70% of the diet, with pellets and other foodstuffs making the remaining 30% (e.g. grains, fruit, vegetables, nuts).	Social	24) 25) 32) Males in alternating stables during musth	Elephants are found in herds and should be housed with other individuals. Elephants should be kept in a social group of 4 animals or more, unless there are good reasons for not doing so – i.e. excessive aggressive behaviours. The bulk of elephants' diets should be browse, where the animals can engage in removing leaves, and the breaking and debarking of the branches. Logs and tree trunks provide food and enrichment. Foraging can be encouraged through scatter-feeding, hiding vegetables/peanuts/fruit and smearing peanut butter on objects. Feeding devices like food balls, ice blocks and puzzle feeders should be used regularly. Natural substrate such as sand, wood chippings or sawdust should cover the floor indoors, and soil or grass in the outdoor area should be used as opposed to concrete as this will prevent foot problems. Indoor and outdoor enclosures should contain items of interest, that can be changed regularly depending on usage - rubbing posts, heavy tree trunks, novel objects (tyres etc.), a large pool/wallow, dust bath, views outside the enclosure and rocks or palisades to allow animals to get away from each other or seek privacy. Dry moats are dangerous for elephants. During musth (elevated reproductive hormone period), males are usually (but not always) housed separately and require a separate management procedure.
HOOFED MAMMALS							
Grevy's zebras, Asiatic wild asses	1	Ter	H	Hay, grass, browse, root vegetables and nutritionally balanced marketed brands of dried herbivore formulations. Salt licks.	Social	8) 25) 26) 52)	Zebras and other equids are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts and patches for dust bathing. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Whole root vegetables and food pellets should be scattered around the enclosure to encourage active foraging.
Plains zebras, mountain zebra, African wild ass, wild horse	1	Ter	H	Hay, grass, browse, root vegetables and nutritionally balanced marketed brands of dried herbivore formulations. Salt licks.	Social	8) 25) 26) 27) 52)	Zebras and other equids are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts and patches for dust bathing. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Whole root vegetables and food pellets should be scattered around the enclosure to encourage active foraging.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Tapirs	2	Ter	H	Hay, grass, browse, root vegetables and nutritionally balanced marketed brands of dried herbivore formulations. Salt licks.	Solitary	24) 25) 28) For 2 animals, pool area >10m² & depth 0.8m	The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts and patches for dust bathing. Tapirs should have an outdoor pool area as they are agile swimmers. This species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Whole root vegetables and food pellets should be scattered around the enclosure to encourage active foraging.
Rhinoceroses	1	Ter	H	Branches, hay, nutritionally balanced marketed brands of dried herbivore formulations	Social	4) (with the exception of square-lipped / white rhinoceroses) 11) 24) 25) 29) 38)	Rhinos are found in herds and should be housed with other individuals. Enclosures should have an indoor and outdoor area, preferably accessible at all times. Indoor shelters should have bedding, light and ventilation. Sand, straw or sawdust should cover the floor indoors, and soil or grass in the outdoor area is strongly recommended as opposed to concrete. The indoor and outdoor space should contain items of interest which are changed regularly according to the animals' enaggement - browse, rubbing posts, heavy tree trunks, novel objects (tyres, traffic cones, etc.), views outside the enclosure and rocks or palisades to allow animals to get away from each other or seek privacy. Wallows are also good enrichment for rhinos. Browse provides great enrichment , encouraging the animals to work for their food by removing leaves, and breaking and debarking of branches. Logs and tree trunks also provide food and enrichment.
Pygmy hog	3	Ter	H	Root vegetables, nutritionally balanced marketed brands of dried herbivore formulations	Social (but males are solitary)	25) 27) 29)	These animals dig for roots in the wild, so in order to mimic this, whole root vegetables and food pellets should be hidden under the soil/bark chippings, as well as concealing food amongst piles of wood. Outdoor enclosures should have a mass of branches, shelters, vegetation, and branch structures to increase behavioural diversity and to give the animals more choice of environment.
Other wild boars	1	Ter	H	Root vegetables, nutritionally balanced marketed brands of dried herbivore formulations	Social	8) 17) 25) 27) 29)	Wild pig species are found in groups and should be housed with other individuals of the same species. These animals dig for roots in the wild, so in order to mimic this, whole root vegetables and food pellets should be hidden under the soil/bark chippings, as well as concealing food amongst piles of wood. Outdoor enclosures should have a mass of branches, shelters, vegetation, and branch structures to increase behavioural diversity and to give the animals more choice of environment.
Peccaries	1	Ter	H	Root vegetables, nutritionally balanced marketed brands of dried herbivore formulations	Social	25) 29)	Wild pig species are found in groups and should be housed with other individuals of the same species. The indoor enclosure should have sufficient straw bedding, and the outdoor area should be covered with soft substrate to allow digging for hidden food. Piles of wood/tree tunks as well as planted vegetation can provide shelter, shade and to allow escape from others. These animals dig for roots in the wild, so in order to mimic this, whole root vegetables and food pellets should be hidden under the soil/bark chippings, as well as concealing food amongst piles of wood.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Pygmy hippopotamus	1	Aqu / Ter	H	Fruit, vegetables	Solitary/ Social	4) 24) 29) For 2 animals, pool area >20m² & depth 0.8m	Hippos should have access to pools allowing complete immersion and diving, as well as a paddock area with grass and soft substrate planted with vegetation providing shelter and privacy. Active foraging can be encouraged through provision of fruit/vegetable ice blocks, floating fruit and vegetables in the water, scatter feeding, and puzzle feeders.
Hippopotamus	1	Aqu / Ter	H	Branches, hay, nutrition-ally balanced marketed brands of dried herbivore formulations	Social	24) For 2 animals, pool area >30m² (for each addition, +8m²) & depth 1.5m	Hippos are found in groups and should be housed with other individuals. Hippos should have access to pools allowing complete immersion and diving, as well as a paddock area with grass and soft substrate planted with vegetation providing shelter and privacy. Active foraging can be encouraged through provision of fruit/vegetable ice blocks, floating fruit and vegetables in the water, scatter feeding, and puzzle feeders.
Lama, alpaca, guanaco, vicuna	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Social	8)	Camelids are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts and patches for dust bathing. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Whole root vegetables and food pellets should be scattered around the enclosure to encourage active foraging.
Two- and one-humped camels	1	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried herbivore formulations. Soft salt blocks. Vitamin and mineral supplements recommended, especially for young animals.	Social	8) 27)	Camelids are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Whole root vegetables and food pellets should be scattered around the enclosure to encourage active foraging.
Indian chevrotain (mouse-deer)	3	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Solitary	6) 18)	These animals are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The indoor enclosure should have sufficient bedding and places to allow refuge and escape. The outdoor area should be planted with vegetation depend-ent upon animals needs with suitable landscap-ing to provide shade, hiding places, look-outs and to allow animals to get away from each other, and soft substrate to allow for digging.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Water chevrotain (mouse-deer)	3	Ter / Aqu	O	Hay, grass, browse, mealworms and nutri-tionally balanced marketed brands of dried formulations. Salt licks.	Solitary	4) 6) 18) 35)	These animals are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. If exhibited in natural light, the animal must be given continuous access to dark boxes or dens, away from public view. The indoor enclosure should have sufficient bedding and places to allow refuge and escape. The outdoor area should be landscaped with a pool and planted with vegetation dependent upon animals needs with suitable landscaping to provide shade and hiding places and to allow animals to get away from each other, and soft substrate to allow for digging.
Small deer (pudu, Chinese water deer, barking deer), roe deer	1, 2 or 3	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Social	6) 8) 30) 52)	Deer are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Medium-sized deer (e.g. sika deer, fallow deer)	1 (females 2)	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Social	8) 27) 29) 30) 31) 52)	Deer are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Large deer	1 (females 2)	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Social	8) 27) 29) 30) 31) 52) Sambar, Barashinga, swamp deer, reindeer, Père David's deer: 18)	Deer are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Mooses	1	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Solitary	8) 18) 28) 31) 32) 52)	The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Okapi	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Solitary	4) 26) 52)	The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Giraffes	1	Ter	H	Browse, nutritionally balanced marketed brands of dried formulations, hay (especially Lucerne), grass. Salt licks.	Social	33) 52) Males: 26)	The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay baskets should be suspended at a height to allow easy feeding in indoor and outdoor enclosures to encourage stretching of head and tongue (natural behaviour). Puzzle feeders and hiding food in suspended structures should be used to increase foraging time.
Small and medium-sized duikers, dikdiks, dwarf antelopes, steenbuck, grysbok, klipspringers	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Duikers And Dik-Dik - Solitary Others - Social	6) 52) Duikers, dik-diks, dwarf antelopes: 4) Klipspring-ers: 2)	The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Oribi, beira	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Solitary	6) 52)	The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Yellow-necked duiker	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Solitary	4) 6) 52)	The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Gazelles (incl. springbok, blackbuck, impalas), gerenuk, dibatag, medium-sized antelopes, pronghorns, Saiga antelope	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Social	6) 8) 27) 52)	Antelope species are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Chamois, goral, serow, mountain goat, takin	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Females – Social Males - Solitary	2) 6) 8) 28)	Females are found in herds and should be housed with other individuals of the same species, whilst males are often solitary. S The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.
Mouflons	2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.	Social	2) 8) 27) 52)	These animals are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scattered around the enclosure to encourage active foraging.

MAMMALS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Other wild sheep, wild goats, Bharal, blue sheep, barbary sheep	1 or 2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.		2) 8) 27) 52)	These animals are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scat-tered around the enclosure to encourage active foraging.
Large antelopes, wild cattle, musk ox, European and North American bison	1 or 2	Ter	H	Hay, grass, browse, nutritionally balanced marketed brands of dried formulations. Salt licks.		6) 8) 27) 52)	These animals are found in herds and should be housed with other individuals of the same species. The paddock should have sufficient space to allow running, exercise and feeding. A variety of natural substrates, e.g. soil, sand and grass, can encourage behavioural diversity. The outdoor enclosure should be planted with vegetation to provide visual barriers between animals and visitors, and include rubbing posts. These species should have continual access to shelter providing refuge, privacy and shade with straw bedding. Browse and hay can be placed in nets tied to fencing off the ground around the outdoor and indoor enclosures. Food pellets should be scat-tered around the enclosure to encourage active foraging.
Whales and dolphins	1,2 and 3	Aqu	C	Advice on whales and dolphins in captivity is currently under review.			

Requirements

1) Digging possibilities.
2) Climbing possibilities, according to the species: branches or climbing rocks. The size of the branches should correspond to the grasping organs of the animals.
3) Sleeping boxes should correspond to the requirements of the species and be either placed on the ground or raised. In groups that tend to show sporadic aggression there should be an adequate number of den boxes so that every individual can access a box easily.
4) These solitary animals should be kept either individually, in pairs, or in family groups, and have enclosures that can be subdivided. In some exceptional circumstances, large non-related groups can be maintained, but this must be dependent on evidence of pro-social behaviour between individuals.
5) For the larger animals that spend more time on the ground, outdoor enclosures are also necessary.
6) Screens or opaque fencing should be installed behind which the animals can withdraw and hide.
7) Inner rooms / stables subdivided by separating walls.
8) For animals that can cope with winter require sufficient shelter (lama, alpaca); for other, warmth-loving species: indoor enclosure or stable as indicated.
9) Possibility to cling to structures on the ceiling of the enclosure; open sleeping boxes for cave dwellers.
10) Several feeding places that the animals can reach by climbing.
11) Dividing and separating possibilities.
12) For Barbary, Tibetan and Japanese macaques and Gelada baboon, no indoor enclosure is necessary (an isolated hut offering protection is sufficient). The same applies for open outdoor keeping of other species during the summer.
13) Sleeping boxes that can be subdivided (for groups and individual animals).
14) Occupation of the animals by added enrichment objects, appropriate to the species, , for example, puzzle feeders, swinging ropes, straw, plastic containers, balls etc.
15) According to the species, elevated lying places tamandua, giant squirrels, cats etc. or lookouts (otters, mongooses, etc.).
16) Digging and ground-breaking possibilities.
17) Indoor or outdoor enclosure. If an outdoor enclosure is planned for species that are sensitive to cold, then an additional heated indoor enclosure is necessary.
18) Bathing possibility.
19) Fresh wood to be provided on a regular basis for dental hygiene and occupation of the animals.
20) Outdoor enclosure with thermal radiator, or continuous access to areas that caretakers can thermally control.
21) Individual boxes must be made available for each animal
22) In the case of natural grounds: for quokkas: 50 m2; for bears: 1000 m2 or more.
23) Indoor enclosure only for (sub-) species that are sensitive to cold; otherwise, isolated sleeping boxes for every grown animal or indoor enclosure as indicated.
24) Enclosure should provide bathing opportunities all year round (for elephants and Asian rhinoceroses). For tapirs, hippopotamus and pygmy hippopotamus, indoor and outdoor pools.
25) Rubbing opportunities, such as tree stumps or rocks, and sand bath or muddy pool for skin care.
26) Individual indoor space or box. For social species, eye contact between the individual boxes. Heating for species that are not winter hardy.
27) According to species, possibility to separate males from females or escape possibilities for females and young.
28) Soft ground in outdoor enclosure (lawn, bark shavings).
29) Muddy pool. Possibility for pigs to wallow and root.
30) Trees and branches for rubbing the antlers.
31) Surface applies for partially solidified installations. The measurements of enclosures consisting exclusively of natural grounds are to be tripled and it must be possible to divide the enclosures.
32) Tree stumps for the occupation of musk oxes.
33) Outdoor area as well as covered or indoor exercise area.
34) Usual groupings would be monogamous couple with tolerated offspring.

Requirements (continued)

35) Shelter or stall for housing, if in individual boxes this area's measurement should be tripled.

36) If an outdoor enclosure is available, permanent access to the indoor enclosure shall be ensured.

37) Short-term tethering possible only for safety reasons or medical treatment.

38) Soft elastic floor structure with a swampy area that serves as access to water

39) Species-specific litter material provided.

40) Suitable litter for burrowing: 15cm deep floor for hamsters; 25cm deep floor gerbils; 30cm degus.

41) One or more possibilities for retreat, where all animals can find space. Elevated areas of refuge for chinchillas.

42) Species-specific nesting material provided.

43) Boards at different levels for sitting and resting.

44) Coarsely structured food such as hay or straw.

45) Should have items for gnawing on such as soft wood or fresh branches.

46) Must have a sand bath.

47) The animals are to be kept in group of at least two individuals.

48) Acceptable to keep a single animal in an enclosure, except in the case of social animal species.

49) Outdoor enclosure that allows the digging of earth constructions.

50) For species that hibernate or sleep through dry periods, appropriate climatic precautions shall be taken.

51) Enclosure fencing and barriers shall not be made of wire mesh.

52) The enclosure floor shall show the necessary surface structures to provide for foot care and, if necessary, fur care appropriate to the species. Suitable facilities shall additionally be available for cats to provide for abrasion of claws.

53) The feed shall be provided in such a way that the animal has to work to get it.

54) Coarsely structured feed such as hay, straw, or feed containing vitamin C.

Table 1b: BIRDS

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
FLIGHTLESS BIRDS							
Ostrich	1	Ter	H	Commercial ratite pellets (enriched with vitamins), browse, corn, grains and some small chopped fruit and vegetables.	Social	1) 2)	Ostriches should be housed in social groups of around 10 animals with a dominant male, dominant female, and the other females in the harem. They mainly eat seeds, roots and other plant matter but may opportunistically eat carrion or insects such as locusts. Although in the wild ostriches consume sand and pebbles to help digest their food, they do not need to eat grit to digest their pelleted food, and too much sand can cause an impaction. Ostriches should have a large outdoor enclosure and a three-sided shelter or an indoor shelter as well. They should have a large area of grass available for grazing, and can be housed with other grazing mammals. Several sand areas should be provided to encourage digging and dust-bathing. Breeding season starts in May and ends after August, with July being the peak period of egg laying: during this time males and females may need to be separated depending on their behaviour. Foraging enrichment can involve scatter feeding, hiding food in logs and vegetation around the enclosure and hanging browse around the enclosure.
Rhea	2	Ter	H	Commercial ratite pellets (enriched with vitamins), browse, corn, grains and some small chopped fruit and vegetables.	Social	1) 2)	Rheas are social animals and should be housed in groups. They mainly eat seeds, roots and other plant matter but may opportunistically eat carrion or insects such as locusts. Rheas should have a large outdoor enclosure and a three-sided shelter or an indoor shelter as well. They should have grass available for grazing, and can be housed with other grazing mammals. Several sand areas should be provided to encourage digging and dust-bathing. Foraging enrichment can involve scatter feeding, hiding food in logs and vegetation around the enclosure and hanging browse around the enclosure.
Cassowary	1	Ter	H/O	Large variety of fruit (both chopped and whole), crickets, insects, a small amount of fish and small prey items, some commercial ratite pellets (enriched with vitamins), browse, corn, grains, seeds.	Solitary	3)	Cassowaries are primarily frugivorous but often eat small insects and prey items opportunistically, such as frogs, mice and fish. They should be housed separately, with visual barriers erected between animals if enclosures are next to each other. In contrast to the other ratites, they do not cope well with being housed with other sympatric mammals. They should have an outdoor enclosure as well as an indoor shelter with warm bedding, light and ventilation. Foraging enrichment can involve scatter feeding, hiding food in logs and vegetation around the enclosure and hanging browse around the enclosure, and freezing fruit juice into ice blocks.
Emu	2	Ter	H	Commercial ratite pellets (enriched with vitamins), browse, corn, grains and some small chopped fruit and vegetables.	Social	1) 2) 4)	Emu are social animals and should be housed in groups. They mainly eat seeds, fruits, roots and other plant matter and some insects such as locusts and caterpillars. They should have a large outdoor enclosure and a three-sided shelter or an indoor shelter as well. They should have grass available for grazing, and can be housed with other grazing mammals. Several sand areas should be provided to encourage digging and dust-bathing. During the summer months (longer daylight hours) breeding pairs will form, and after the female has laid the eggs the male is left to incubate them. Foraging enrichment can involve scatter feeding, hiding food in logs and vegetation around the enclosure and hanging browse around the enclosure.

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Kiwis	3	Ter	O	Worms, spiders, insects (contained in leaf litter), berries, supplemented with minced meat, peas, corn, apples, pears, bananas, currants, and cat biscuits.	Solitary	3) 4) 5) 6)	These species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: if so, the enclosure should be semi-dark in the day and light at night. Kiwis' wild diet involves worms, grubs, bugs, berries and seeds that they find with their excellent sense of smell. They should have an outdoor enclosure as well as an indoor shelter with warm bedding, light and ventilation. Kiwis like to sleep in hollow logs and thick vegetation so many log piles, branches, and planting should be present in their enclosure. Foraging enrichment can involve scatter feeding, hiding food in logs and vegetation around the enclosure, wiping fruit and insect juices around vegetation to stimulate foraging through smell.
Large penguins	2	Ter/Aqu	C	Capelin, herring, krill, silversides, squid, sardines, smelt Daily food intakes should weigh around 2-3% of their body mass	Social (colonial)	7) 8) For 12 animals, pool surface area >15m2 (for each additional animal, +1m2) & depth 2m	The fish and squid in the penguins' daily ration should be hand-fed to ensure each individual receives the correct intake, particularly when fish are injected with vitamin supplements. Pool feeding should also be conducted regularly to encourage swimming. Pools should have some steep sides and few shallower slopes to mimic natural habitats. The fish species fed to penguins should be varied with season, availability, activity levels, and individual preference. Adult penguins are commonly fed to appetite twice daily, although the number of feedings may be increased during pre-molt and breeding. Antarctic and sub-Antarctic penguin species (emperor, Adelie, chinstrap, gentoo, king, macaroni, rockhopper) need to be kept in climate controlled indoor facilities that can maintain the appropriate temperatures. Temperate species (African, Humboldt, Magellanic, little blue) can be successfully housed indoors or outdoors, or in exhibits using a combination of both. Water quality should be monitored daily, where ozone is the preferred method of sterilization. Penguins are colonial, and thus a large enclosure is needed to house the group of animals, with hiding places such as nest boxes, caves, or rock areas that they can duck behind. Foraging enrichment includes freezing fish into ice blocks, and feeding through tubes and from puzzle feeders.
Small penguins	2	Ter/Aqu	C	Capelin, herring, krill, silversides, squid, sardines, smelt Daily food intakes should weigh around 10-14% of their body mass	Social (colonial)	7) 8) 18) For 12 animals: pool surface area >15m2 (for each additional animal, +0.5m2) & depth 1m	The fish and squid in the penguins' daily ration should be hand-fed to ensure each individual receives the correct intake, particularly when fish are injected with vitamin supplements. Pool feeding should also be conducted regularly to encourage swimming. The fish species fed to penguins should be varied with season, availability, activity levels, and individual preference. Adult penguins are commonly fed to appetite twice daily, although the number of feedings may be increased during pre-molt and breeding. Antarctic and sub-Antarctic penguin species (emperor, Adelie, chinstrap, gentoo, king, macaroni, rockhopper) need to be kept in climate controlled indoor facilities that can maintain the appropriate temperatures. Temperate species (African, Humboldt, Magellanic, little blue) can be successfully housed indoors or outdoors, or in exhibits using a combination of both. Water quality should be monitored daily, where ozone is the preferred method of sterilization. Penguins are colonial, and thus a large enclosure is needed to house the group of animals, with hiding places such as nest boxes, caves, or rock areas that they can duck behind. Foraging enrichment includes freezing fish into ice blocks, and feeding through tubes and from puzzle feeders.

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
WADERS, SHOREBIRDS, CRANES AND FLAMINGOS							
Pelicans	2	Ter/Aqu	C	Capelin, herring, silver-sides, trout, mackerel, sardines, smelt	Solitary (but gregarious and will forage together)	8) 9) 13) For 4 animals, pool surface area >50m2 (for each additional animal, +5m2) & depth 0.75m	Pelicans should be hand-fed where possible to ensure each individual receives the correct intake, particularly when fish are injected with vitamin supplements. Pool feeding should also be con-ducted regularly to encourage swimming. The fish species fed to penguins should be varied with season, availability, activity levels, and individual preference. The outdoor enclosure should have a pool with a large surface area, and different depths to increase diving and exploring behav-iour. The outdoors should have nest areas, branches, and rock areas that they can rest or perch upon, and should shelter the animals from extreme heat or cold. Fresh nesting material should be provided regularly (leaves, twigs, branches etc). Foraging enrichment includes freezing fish into ice blocks, and feeding through tubes and from puzzle feeders.
Cormorants, anhingas	3	Ter/Aqu	C	Capelin, silversides, sardines, perch, catfish, sunfish	Social (colonial)	8) 10) 11) For 4 animals, pool surface area >40m2 (for each additional animal, +8m2) & depth 1.5m	These species should be hand-fed where possible to ensure each individual receives the correct intake, particularly when fish are injected with vitamin supplements. Pool feeding should also be conducted regularly to encourage swimming. The fish species should be varied with season, availability, activity levels, and individual prefer-ence. The outdoor enclosure should have a deep pool with different depths and vegetation to increase diving and exploring behaviour. The outdoors should also have nest areas, branches, and rock areas that they can rest or perch upon, and should shelter the animals from extreme heat or cold. Fresh nesting material should be provided regularly (leaves, twigs, dried seaweed etc). Foraging enrichment includes freezing fish into ice blocks, and feeding through tubes and within natural or artificial kelp beds. As colonial species, these animals should be housed in groups.
Shoebill	3	Ter/Aqu	C	Capelin, mackerel, whiting, sardines, tilapia, catfish, carp	Solitary	8)	Shoebills are solitary and territorial birds, so should be kept individually or if in pairs then in large enclosures where the animals can avoid each other. Live fish feeding is preferable, but should be combined with hand-feeding to ensure medication can be given when necessary. The outdoor enclosure should have a pool mimicking a freshwater marsh: reed beds and other vegeta-tion to increase foraging and wading behaviour. The outdoors should also have nest areas, branches, and rock areas that the birds can rest or perch upon, and vegetation and shelters to protect the animals from extreme heat or cold. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas and be covered in a soft substrate such as rubber matting. Heat lamps may be required during cold winter months.

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Saddle-billed stork, giant stork, marabou stork, Goliath heron	2	Ter/Aqu	C	Capelin, mackerel, whiting, sardines, tilapia, catfish, carp, rabbits, rodents	Solitary (but can be colonial during breeding season)	8) 13)	These species are generally solitary and territorial birds, so should be kept individually or if in pairs then in large enclosures where the animals can avoid each other. Live fish feeding is preferable, but should be combined with hand-feeding to ensure medication can be given when necessary. The outdoor enclosure should have a pool mimicking a freshwater marsh: reed beds and other vegetation to increase foraging and wading behaviour. The outdoors should also have trees and branches to allow perching at multiple different levels, with sheltered areas to protect the animals from extreme heat or cold. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas and be covered in a soft substrate such as rubber matting. Heat lamps may be required during cold winter months. Foraging enrichment includes hiding fish around the enclosure, or using puzzle feeders underwater.
Medium-sized and small storks, large herons, ibises and spoonbills, cranes, other waders	2 or 3	Ter/Aqu	C	Grasshoppers, crickets, mealworm, other insects, fish & invertebrates (loach, sardines, crayfish), minced meat, boiled eggs, grated carrots, can be supplemented by chicken feed pellets	Social	8) 11) 12) Cranes and waders do not require 10) Cranes require 12) 13) and 15)	These different gregarious species often live in association with each other in the wild, normally in groups of around 10-20 but can be found in colonies. In captivity, live fish feeding is preferable, but should be combined with hand-feeding to ensure medication can be given when necessary. The outdoor enclosure should have a pool mimicking a freshwater marsh: reed beds and other vegetation to increase foraging and wading behaviour. The outdoors should also have trees and branches to allow perching at multiple different levels, with sheltered areas to protect the animals from extreme heat or cold. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas and be covered in a soft substrate such as rubber matting. Heat lamps may be required during cold winter months. Foraging enrichment includes hiding food around the enclosure and in crevices of objects, or using puzzle feeders above and underwater.
Bittern, hamerkop	3	Ter/Aqu	C	Grasshoppers, crickets, mealworm, other insects, fish & invertebrates (loach, sardines, crayfish, eels), minced meat, boiled eggs, grated carrots, can be supplemented by chicken feed pellets	Solitary – bittern Social – hamerkop	5) 8) 9) 11) 12)	These species are very secretive and hide themselves among reeds, so in captivity their enclosure should have plenty of rocks, vegetation and shelters for them to hide behind. The outdoor enclosure should have a pool mimicking a freshwater marsh: reed beds and other vegetation to increase foraging and wading behaviour. The outdoors should also have trees and branches to allow perching at multiple different levels, with sheltered areas to protect the animals from extreme heat or cold. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas and be covered in a soft substrate such as rubber matting, as well as opportunities for bathing. Heat lamps may be required during cold winter months. Foraging enrichment includes hiding food around the enclosure and in crevices of objects, or using puzzle feeders above and underwater.

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Small herons	3	Ter/Aqu	C	Grasshoppers, crickets, mealworm, other insects, fish & invertebrates (loach, sardines, crayfish, eels), minced meat, boiled eggs, grated carrots, can be supple-mented by chicken feed pellets	Solitary (can group during breeding)	5) 8) 10) 11)	These species are generally solitary but can associate in multi-species heronries during the breeding season. The outdoor enclosure should have a pool mimicking a freshwater marsh: reed beds and other vegetation to increase foraging and wading behaviour. The outdoors should also have vegetation and platform to allow nesting and roosting in multiple different locations, with sheltered areas to protect the animals from extreme heat or cold. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas and be covered in a soft substrate such as rubber matting. Heat lamps may be required during cold winter months. Foraging enrichment includes hiding food around the enclosure and in crevices of objects, or using puzzle feeders above and underwater.
Flamingos	3	Ter/Aqu	C	Commercially available flamingo grain-based diets containing 20 to 40% protein, krill, copepods, aquatic insect larvae, chopped greens	Social (colonial)	8) 9) 13) For 20 animals, pool surface area >100m2 (for each additional animal, +0.5m2)	Flamingos are found in colonies in the wild, so should always be housed in groups of at least 20 animals, but ideally 40 or more. The outdoor enclosure should have a pool mimicking a saltwater lake: reed beds and other vegetation to increase foraging and wading behaviour. The outdoors should also have some vegetation but overall a low plant density as flamingos are prone to injuring themselves on vegetation. There should be a nesting area that can fit all birds at once, where the substrate is clay, a clay/sand mixture, leaf mulch, or soil, and should have a water source close to allow birds to construct their nests. The outdoors should have sheltered areas to protect the animals from extreme heat or cold. The indoor area should be warm, light and well-ventilated and provide a pool and nesting areas. Heat lamps may be required during cold winter months. Foraging enrichment includes giving krill, copepods, aquatic insect larvae, algae and duckweed, and giving food within submerged feeders in the water.
BIRDS OF PREY							
Large eagles and vultures	1 or 2	Arb/Fly	C	Day old chicks, rabbits, rodents, fish, chicken, quail, leg quarters, bones (larger bones can be sawed into chunks) and carcasses. Bearded vultures should not be fed any form of poultry.	Solitary	11) 12) 14) 15) 16)	These species are often used for demonstration, where they are generally tethered using jessies and kept in a temporary enclosure beforehand and afterwards. However, they must be regularly given the opportunity to be loose in an aviary, and if only used for falconry, they must be free-flown often. Outdoor aviaries should have trees and branches to allow perching at many different levels, with sheltered areas to protect the animals from extreme heat or cold. The enclosure should also have enough space for free flight, and limit the amount of wire mesh used for fencing (use rod dowelings or solid sides instead) as the birds can harm themselves by grabbing and holding on to it. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. Foraging enrichment includes hiding food around the enclosure and in logs/crevices, whole carcass feeding for vultures, throwing up pieces of food, drag lures, and using puzzle feeders. Temporary accommodation should provide the same benefits as an exhibit on public view in terms of adequate perching, space, provision of enrich-ment, suitable substrate, heat, shelter, water supply, cleanliness and external visual interest for the inhabitants.

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Small eagles, ospreys, large hawks, buzzards, kites, small vultures, harriers, large falcons	2	Arb/Fly	C	Day old chicks, rabbits, rodents, fish, chicken, quail, small bones for vultures.	Solitary	11) 12) 14) 15) 16) Large falcons: 5)	These species are often used for demonstration, where they are generally tethered using jessies and kept in a temporary enclosure beforehand and afterwards. However, they must be regularly given the opportunity to be loose in an aviary, and if only used for falconry, they must be free-flown often. Outdoor aviaries should have trees and branches to allow perching at many different levels, with sheltered areas to protect the animals from extreme heat or cold. The enclosure should also have enough space for free flight, and limit the amount of wire mesh used for fencing (use rod dowelings or solid sides instead) as the birds can harm themselves by grabbing and holding on to it. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. Foraging enrichment includes hiding food around the enclosure and in logs/crevices, throwing up pieces of food, drag lures, and using puzzle feeders. Temporary accommodation should provide the same benefits as an exhibit on public view in terms of adequate perching, space, provision of enrichment, suitable substrate, heat, shelter, water supply, cleanliness and external visual interest for the inhabitants.
Medium-sized falcons, small hawks, sparrowhawks	2	Arb/Fly	C	Day old chicks, rabbits, rodents, fish, chicken and other meat pieces.	Solitary	5) 11) 12) 14) 15) 16)	These species are often used for demonstration, where they are generally tethered using jessies and kept in a temporary enclosure beforehand and afterwards. However, they must be regularly given the opportunity to be loose in an aviary, and if only used for falconry, they must be free-flown often. Outdoor aviaries should have trees and branches to allow perching at many different levels, with sheltered areas to protect the animals from extreme heat or cold. The enclosure should also have enough space for free flight, and limit the amount of wire mesh used for fencing (use rod dowelings or solid sides instead) as the birds can harm themselves by grabbing and holding on to it. The indoor area should be warm, light and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. Foraging enrichment includes hiding food around the enclosure and in logs/crevices, throwing up pieces of food, drag lures, and using puzzle feeders. Temporary accommodation should provide the same benefits as an exhibit on public view in terms of adequate perching, space, provision of enrichment, suitable substrate, heat, shelter, water supply, cleanliness and external visual interest for the inhabitants.

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Owls	1 or 2	Arb	C	Day old chicks, mice, rats, occasionally chicken pieces.	Solitary	Large owls: 5) 11) 12) 14) 15) 16) Small owls: 5) 10) 12) 14) 15) 16)	If owls are used for demonstration, they may be tethered using jessies and kept in a temporary enclosure beforehand and afterwards. Temporary accommodation should provide the same benefits as an exhibit on public view in terms of adequate perching, space, provision of enrich-ment, suitable substrate, heat, shelter, water supply, cleanliness and external visual interest for the inhabitants. However, they must be regularly given the opportunity to be loose in an aviary. Outdoor aviaries should have trees and branches to allow perching at many different levels, with sheltered areas to protect the animals from extreme heat or cold. The enclosure should also have enough space for free flight, and limit the amount of wire mesh used for fencing (use rod dowelings or solid sides instead) as the birds can harm themselves by grabbing and holding on to it. The indoor area should be warm, dark, and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. Foraging enrichment includes hiding food around the enclosure and in logs/crevices, throwing up pieces of food, drag lures, and using puzzle feeders.
PARROTS							
Large parrots (large macaws and larger cockatoos and parakeets)	2	Arb/Ter	O	Commercially available pellets, seeds, nuts, corn, vegetables, fruit.	Social	1) 6) 15) 17) 19) 20) 21)	Outdoor aviaries should have trees and branches to allow perching at many different levels, with sheltered areas to protect the animals from extreme heat or cold. The enclosure should also have enough space for free flight. The indoor area should be warm, light, and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. Perches need to be placed at the ends of an aviary to allow for maximum exercise/flight opportunities. Parrots are social animals, living in groups from around 20 animals or more, and nearly all species are monogamous breeders (mate for life). It is therefore important to allow the birds the opportunity to form and maintain strong pair bonds. Foraging enrichment includes hiding food around the enclosure and in logs/crevices, using puzzle feeders, and stimulating the birds with tasks and puzzles that they need to complete to obtain food. They are intelligent animals and therefore need much environmental enrichment and variation, such as novel objects, toys and structural changes.
Parakeets, small parrots, cockatoos, cockatiels, other smaller parrot-like birds	2	Arb/Ter	O	Commercially available pellets, seeds, nuts, corn, vegetables, fruit.	Social	1) 15) 19) 20) 21) 22)	Outdoor aviaries should have trees and branches to allow perching at many different levels, with sheltered areas to protect the animals from extreme heat or cold. The enclosure should also have enough space for free flight. The indoor area should be warm, light, and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. Perches need to be placed at the ends of an aviary to allow for maximum exercise/flight opportunities. Parrot-like birds are social animals, so it is therefore important to allow the birds the opportunity to form and maintain strong pair bonds. Foraging enrichment includes hiding food around the enclosure and in logs/crevices, using puzzle feeders, and stimulating the birds with tasks and puzzles that they need to complete to obtain food. They are intelligent animals and therefore need much environmental enrichment and variation, such as novel objects, toys and struc-tural changes.

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
OTHER BIRD SPECIES							
Nightjars	2	Arb/Ter	C	Mice, crickets, giant mealworms, wax worms	Solitary	5) 10) 11)	Outdoor aviaries should have trees and branches to allow perching at many different levels, with sheltered areas to protect the animals from extreme heat or cold. The enclosure should also have enough space for free flight. The indoor area should be warm, light, and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. Perches need to be placed at the ends of an aviary to allow for maximum exercise/flight opportunities. Foraging enrichment includes hiding food around the enclosure and in logs/crevices, throwing food in the air, and using puzzle feeders.
Humming birds and sunbirds	3	Fly/Arb	H	Specialised commercially available nectar, fruit flies	Solitary	5) 11) 15) 17)	These species are found in a wide range of habitats and temperatures, and the captive enclosure should mimic their natural climate. They may need heat lamps in the colder months, and should have an outdoor area with much vegetation and branches to allow for perching, rest, preening and feeding. A pond with regularly changed water, or a waterfall, encourages bathing behaviours. The indoor area should be warm, naturally lit, and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. They are not highly social animals so any resource (heat, water, food, shelter) should be provided in multiple locations. Nectar should be inserted into feeders, where there should be 2 feeders per bird to allow choice and reduce competition.
Quetzals and trogons	3	Arb	O	Fruit, berries, crickets, other insects, mealworm, soaked dog/cat food	Solitary	11) 15)	The outdoor area must have much vegetation and branches to allow for perching, rest, preening and feeding. These species like to nest in holes in trees, so holes of this sort should be provided in the vegetation of the enclosure. The indoor enclosure should be warm, naturally lit, and well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. A small pool with running water can add extra stimulation.
Hornbills	1 or 2	Arb/Ter	O	Fruit (large variety), insects, mealworm, lentils, seeds, minced low fat beef, lean poultry, crushed boiled egg, one-day-old mice, one-day-old chicks	Social	11) 15)	An elongated enclosure is recommended for hornbills so they can exercise their wings, and it should be covered in a natural substrate such as wood or bark chippings. The outdoor area must have much vegetation and branches to allow for perching, rest, preening and feeding. Pools, small streams and waterfalls can encourage bathing, and serve as vehicles for environmental enrich-ment. Hornbills like to bask in the sun so the outdoor and indoor enclosures should have much natural light. Enrichment includes offering food in pine cones, on skewers, hidden in piles of straw, leaves or other organic matter, offering live food (on the ground or from dispensers), and sprinkling the enclosure with water, and planting vegetation for the hornbills to destroy. Most hornbill species are social and form pair bonds, and in captivity this should be encouraged for example through appropriate groupings and providing food that can be passed between paired animals (a natural behaviour).

BIRDS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Birds of paradise	3	Arb/Ter	O	Fruit, insects, mealworm, crickets, seeds, low-iron bird pellets	Solitary	5) 11) 15)	Birds of paradise live in the upper canopy of rainforests, and therefore their captive enclosure must mimic this densely planted environment while providing much natural light. Vegetation in the outdoor area should provide many leaves and branches to allow for perching, rest, preening and feeding. Nest material such as leaves, twigs, and straw should be provided and often replenished. A pond with regularly changed water, or a waterfall, encourages bathing behaviours. The indoor area should be warm, naturally lit, well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window. They may need heat lamps in the colder months. They are not highly social birds so any resource (heat, water, food, shelter) should be provided in multiple locations.
Ducks, geese, swans	2 or 3	Ter/Aqu	H	Waterfowl pellets, seeds, duckweed	Social Swans: more solitary, pair-bond only	3) 7) 8) 9) 15)	The outdoor enclosure should have a freshwater lake or pool mimicking this, with pond vegeta-tion, reeds and other plants to increase foraging and wading nesting. The outdoors should also have rock structures and platforms to allow nesting and in multiple different locations, with sheltered areas to protect the animals from extreme heat or cold. The indoor area should be warm, light and well-ventilated, and provide nesting areas with regularly replaced substrate e.g. straw, wood chippings. Foraging enrichment includes hiding food around the enclosure and in crevices of objects, or using puzzle feeders above and underwater.
Small aviary birds	3	Ter/Fly	O	Species- dependent: Berries, chopped fruit, seeds, insects, worms, bird feed	Species-dependent	5) 12)	Aviary birds are found in a wide range of habitats and temperatures, and the captive enclosure should mimic their natural climate. They may need heat lamps in the colder months, and should have an outdoor area with much vegeta-tion and branches to allow for perching, rest, preening and feeding. A pond with regularly changed water, or a waterfall, encourages bathing behaviours. The indoor area should be warm, naturally lit, well-ventilated, and provide nesting and perching areas that are away from the visitor barrier or window.

Requirements

1) The birds shall be provided with suitable sand piles and areas.
2) Facilities with natural substrate on the floor should be of substantial dimensions and quality to allow the animal choice in which area to use, and the enclosures shall be capable of being partitioned.
3) The enclosures must be linked one to another.
4) A shelter must be available in the enclosure.
5) Species-specific possibilities to hide: reed, bushes (caves on the ground or in trees), etc.
6) Indoor enclosure; outdoor enclosure optional.
7) For the keeping of Arctic and Subarctic species, the indoor rooms must be air-conditioned in the summer. Larger species must have access to outdoor enclosures in winter.
8) Appropriate sized pools must be made available, see Table 4, Animal Protection Ordinance of Switzerland, Tierschutzverordnung 2008 (Appendix 3 of this manual)
9) Bathing possibilities in indoor enclosures as well.
10) According to the species: indoor or outdoor enclosure.
11) Possibility to perch.
12) An indoor enclosure must be made available to species that are sensitive to the cold.
13) Indoor enclosures must provide direct access to outdoor enclosure.
14) Diurnal and nocturnal birds of prey should preferably be kept in flight aviaries, and if tethered must only be in places that are not open to the public. Birds kept for falconry only must be given the opportunity to fly freely on a regular basis.
15) Bathing opportunity.
16) Aviaries are to be constructed in a manner so that visitors do not disturb the birds.
17) If two or more birds are kept in an enclosure, there should be provisions in place to be able to separate individuals or smaller groups of birds from the main group.
18) Frost-free housing required for these smaller animals during the winter season.
19) Several natural branches for chewing, perching and climbing.
20) The animals shall be kept in groups of at least two animals, unless severe aggression is seen between individuals.
21) The enclosures shall be structured with various springy perching opportunities of differing thickness and orientation, with around a third of the enclosure volume being free of structures.
22) In enclosures less than 2m2 in size, the length-to-width ratio of the enclosure dimensions shall not be more than 1:2.

Table 1c: REPTILES & AMPHIBIANS

REPTILES & AMPHIBIANS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Giant tortoises, tropical tortoises, European tortoises, African spurred tortoises	2	Ter	H	Grasses, greens (e.g. kale, collard, mustard and dandelion greens, bok choy) vegetables, fruit, flowers, hay, bamboo stalks (grasses should make up majority of intake)	Solitary	1) 3) 5) 6) 7) 9) 27) Giant tortoises: 2) European tortoises: 4) 5) 7) 9) 27) 32)	In captivity, these tortoises require regular moisture on their carapace, for example through the provision of a pool, waterfall and/or via sprinklers. They should have a large outdoor enclosure covered with grass, rocks and other natural substrates to encourage exploration. Their indoor enclosure should be warm and well-ventilated, with bedding composed of dry grasses, alfalfa, or grass-based hay. Foraging enrichment includes placing food around the enclosure, hiding it in crevices, using puzzle feeders, and placing browse slightly higher up to encourage feeding from hind legs (a natural behaviour). Although tortoises are solitary animals they often feed in groups, and therefore can be kept together in captivity if carefully managed.
Marine turtles	2	Aqu	C	Shrimp, crab, capelin, silversides, squid, sardines, some vegetables	Solitary	22)	Marine turtles should be provided with large, deep saltwater pools, preferable with sandy bottoms and natural vegetation. Underwater rock structures should provide multiple hiding and resting places around the pool, and housing with fish and other marine species can provide sensory enrichment. Feeding enrichment should involve placing food in floating or sinking objects for the turtles to extract, and scatter feeding.
Snapping turtles	1 or 2	Aqu/Ter	O	Crayfish, fish, crickets, earth worms, lettuce, floating duck weed, water lettuce, turtle pellets	Solitary	3) 5) 9) 12) 28)	Enclosures for snapping turtles should have a shallow, brackish pool, ideally with sediment on the bottom, as well as a dry area of rocks and grass to allow them to haul out. The dry area should also include some sand or soil mix substrate to allow digging behaviour (particularly by females in nesting season). Underwater rock structures should provide multiple hiding and resting places around the pool, and housing with fish and other species can provide sensory enrichment.
Crocodiles, alligators, caiman, gharials	1	Aqu/Ter	C	Rats, rodents, rabbits, chicken, beef, fish	Solitary	3) 5) 6) 12) 17) 18) 26)	Enclosures should have a large pool that allows the crocodilians to actively swim, ideally with natural vegetation and substrate covering the floor. There should be haul out areas covered with sand, grass or soil both in the shade and in natural sunlight to encourage basking. Both the pool and haul out areas should be able to easily hold all animals at the same time, with enough space between them. Individuals should be housed with similar size classes to reduce bullying or fighting as a result of territoriality. Ideal crocodilian housing would provode a "thermal gradient" within the enclosure, with a range of temperatures being made available from around 26°C to 36 °C. Foraging enrichment includes providing on-the-bone food items, attaching food to hooks to encourage the animals to tear it off, and scatter feeding around the enclosure.

REPTILES & AMPHIBIANS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Water dragon, monitors, Komodo dragon	1 or 2	Ter	C	Rabbits, rats, mice, commercial reptile diet, and beef shank, hard-boiled eggs, fish, crickets, mealworms, waxworms, cockroaches, day old chicks, fruit, vegetables.	Solitary	3) 8) 29)	The enclosure should be covered with grass, rocks, vegetation and sand or soil in some areas to encourage digging. There should be several platforms in both shade and natural sunlight to allow basking and themoregulation. Ideal housing for these species would provide a "thermal gradient" within the enclosure, with a range of temperatures being made available from around 26°C to 36 °C. Individuals should be housed with similar size classes to reduce bullying or fighting, and climbing trees should always be made available since juvenile dragons may climb to escape conflict. Foraging enrichment includes providing on-the-bone food items, attaching food to hooks to encourage the animals to tear it off, and scatter feeding around the enclosure. Depending on the species' natural habitat, the enclosure should have many hiding places, pools, rocks, log piles etc.
Gila monster, beaded lizard	1	Ter	C	Mice, rats, chicks, eggs	Solitary	3) 4) 9) 12) 26)	The enclosure should be covered with rocks, vegetation and sand or soil in some areas to encourage digging. There should be several platforms in both shade and natural sunlight/UV lamps to allow basking and themoregulation. Ideal housing for these species would provide a "thermal gradient" within the enclosure, with a range of temperatures being made available from around 26°C to 36 °C. These species only need to be fed once a week or less.
Tuatara	3	Ter	C	Earthworms, crickets, one day old mice/rats, insect larvae. Vitamin D3 and calcium supplements highly recommended	Solitary	9) 11) 16) 17)	This species are nocturnal and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night. Outdoor enclosures should have well-drained, friable soil to prevent flooding, and should have an overhead sprinkler system to cool the habitat in summer if temperatures exceed 30°C . There must be an underground earth burrow provided for each animal, with deep natural substrate available if the animals choose to make their own burrow. Square-shaped enclosures are preferable over an elongate design, so that there is less chance of a dominant animal excluding others from water, burrows, or sunny areas. Food should be hidden around the enclo-sures, within crevices and logs, to encourage foraging.
Chameleons	3	Arb/Ter	O	Crickets, mealworms, waxworms, live flies, cockroaches, grasshop-pers and spiders, some flowers and plant matter	Solitary	1) 3) 4) 5) 8) 9) 13) 15) 17) 26)	The design and contents of the enclosures will depend on the species of chameleons housed, but in general they should be provided with much vegetation, branches and trees to allow climbing, resting and basking. There should be several branch areas in both the shade and in natural sunlight/under UV lamps to allow efficient themoregulation: providing a thermal gradient (either horizontally or vertically) in the tank is ideal. Natural substrates such as soil, bark or coconut fibre should cover the floor to allow the females to perform digging behaviour (for egg laying) if they desire. The floor material should be spot cleaned frequently and com-pletely changed at least once a month. The habitat must be misted regularly as chameleons generally won't drink from a water dish. Providing live insects can be an effective form of foraging enrichment.

REPTILES & AMPHIBIANS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIREMENTS	ENVIRONMENT & ENRICHMENT
Green iguanas	3	Arb/Ter	H	Dark leafy greens, turnip, dandelions, beets, cabbage, spinach. Supplement leafy diet with green beans, squash, sprouts, runner beans. 10-15% of diet may include fruits	Solitary	2) 3) 5) 8) 9) 12) 26)	The enclosure should provide vegetation, hides, branches and trees to allow climbing, resting and basking. There should be several platforms in both the shade and in natural sunlight/under UV lamps to allow efficient themoregulation: providing a thermal gradient (either horizontally or vertically) in the tank is ideal. Natural substrates such as soil, bark or coconut fibre should cover the floor to allow for digging behaviour. Foraging enrichment includes stuffing fruit and vegetables into feeders and suspending them from branches or hiding them around the enclosure.
Galapagos iguanas, black iguanas	3	Arb/Ter	O	Dark leafy greens, turnip, dandelions, beets, cabbage, spinach, fruits, crickets, mealworms, and wax worms. Calcium supplements recommended.	Solitary	3) 5) 7) 8) 9) 12) 26) Galapagos iguanas: 10)	The enclosure should provide vegetation, hides, branches and trees to allow climbing, resting and basking. There should be several platforms in both the shade and in natural sunlight/under UV lamps to allow efficient themoregulation: providing a thermal gradient (either horizontally or vertically) in the tank is ideal. Natural substrates such as soil, bark or coconut fibre should cover the floor to allow the females to perform digging behaviour (for egg laying) if they desire. Foraging enrichment includes stuffing fruit and vegetables into feeders and suspending them from branches or hiding them around the enclosure.
Tegu	3	Ter/Arb	O	Dark leafy greens, fruits, eggs, ground beef, fish, crickets, mealworms, and wax worms. Calcium supplements recommended.	Solitary	3) 4) 5) 7) 9) 12) 13) 26)	The enclosure should provide vegetation, hides, branches and trees to allow climbing, resting and basking, dependent on species-specific needs. There should be several platforms in both the shade and in natural sunlight/under UV lamps to allow efficient themoregulation: providing a thermal gradient (either horizontally or vertically) in the tank is ideal. Natural substrates such as soil, bark or coconut fibre should cover the floor to a depth of 8 inches to allow burrowing behaviour. The habitat must be misted regularly to encourage drinking and to maintain the humidity levels. Foraging enrichment includes stuffing food into feeders and suspending them from branches or hiding them around the enclosure.
Dracaena lizard	3	Arb/Aqu	C	Snails, fish, cat food, crustaceans	Solitary	2) 3) 7) 9) 15) 17)	The enclosure should provide vegetation, branches and trees to allow climbing, resting and basking, which should also overhang a pool of water to mimic their natural habitat. The pool should be large enough for the lizards to swim and dive, and have vegetation and natural substrate to encourage exploration. There should be several branches in both the shade and in natural sunlight/under UV lamps to allow efficient themoregulation: providing a thermal gradient (either horizontally or vertically) in the tank is ideal. Natural substrates such as soil, bark or coconut fibre should cover the floor to a depth of 8 inches to allow burrowing behaviour.
Pythons and boas	1 or 2 (depending on size)	Ter	C	Rodents, rabbits, chicks, quail	Solitary	2) 5) 10) 12) Anacondas: 5) 12)	The enclosure should provide hides, branches and platforms to allow climbing, resting and basking, and boas should be provided with a pool of water large enough for them to fully submerge. Heat lamps should be used to provide a thermal gradient in the tank, which should always be climate-controlled to species-specific needs. Natural substrates such as cyprus or fir bark should cover the floor. The snakes should be fed around once a week, and any handling of the animal should not occur when the animal is still digesting the last meal i.e. 2/3 days afterwards, and while it still has a visible lump in its stomach.

REPTILES & AMPHIBIANS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
King cobra	1	Ter	C	Mice and rats	Solitary	2) 3) 5) 8) 9) 12) 26)	The enclosure should provide hides, branches and platforms to allow moving, resting and basking, and have a pool of water large enough for them to fully submerge. Heat lamps should be used to provide a thermal gradient in the enclosure, which should always be climate-controlled to species-specific needs. Natural substrates such as cyprus or fir bark should cover the floor, and dead vegetation should be provided as king cobra females make nests out of this. The snakes should be fed several times a week, dependent on the individual's digestion speed and activity levels.
Mambas, cobras, taipans, boomslang	1	Ter	C	Mice and rats	Solitary	4) 5) 11) 12) 13) 17) 23)	The enclosure should provide hides, branches and platforms to allow climbing, resting and basking, and a pool of water large enough for them to fully submerge. Branches at multiple levels in the enclosure should be as thick as the animals' body, and hollows in tree stumps/cork tunnels should be provided. Heat lamps should be used to provide a thermal gradient in the enclosure, which should always be climate-controlled to species-specific needs. Natural substrates such as cyprus or fir bark should cover the floor. The snakes should be fed around once to several times a week (species dependent), and any handling of the animal should not occur when the animal is still digesting the last meal i.e. 2/3 days afterwards, and while it still has a visible lump in its stomach.
Other elapids, vipers and pit vipers (of an overall length of over 1.2 m)	1	Ter/Arb	C	Mice, rats, lizards	Solitary	4) 11) 12) 13) 17) 23)	The enclosure should provide hides, branches and platforms to allow climbing, resting and basking, and a pool of water large enough for them to fully submerge. Branches at multiple levels in the enclosure should be as thick as the animals' body, and hollows in tree stumps/cork tunnels should be provided. Heat lamps should be used to provide a thermal gradient in the enclosure, which should always be climate-controlled to species-specific needs. Natural substrates such as cyprus or fir bark should cover the floor. The snakes should be fed around once to several times a week (species dependent), and any handling of the animal should not occur when the animal is still digesting the last meal i.e. 2/3 days afterwards, and while it still has a visible lump in its stomach.
Other poisonous snakes: tree species	1	Arb	C	Mice, rats, lizards	Solitary	8) 11) 12) 14) 17) 23)	The enclosure should provide hides, branches and platforms to allow climbing, resting and basking, and a pool of water large enough for them to fully submerge. Branches at multiple levels in the enclosure should be as thick as the animals' body, and hollows in tree stumps/cork tunnels should be provided. Heat lamps should be used to provide a thermal gradient in the enclosure, which should always be climate-controlled to species-specific needs. Natural substrates such as cyprus or fir bark should cover the floor. The snakes should be fed around once to several times a week (species dependent), and any handling of the animal should not occur when the animal is still digesting the last meal i.e. 2/3 days afterwards, and while it still has a visible lump in its stomach.

REPTILES & AMPHIBIANS	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Other venomous snakes: terrestrial species (e.g. rattlesnakes)	1	Ter	C	Mice, rats, lizards	Solitary	4) 11) 12) 13) 17) 23)	The enclosure should provide hides, platforms, log piles and platforms to allow climbing, resting and basking. Heat lamps should be used to provide a thermal gradient in the enclosure, which should always be climate-controlled to species-specific needs. Natural substrates such as cyprus or fir bark should cover the floor, and underground burrows or cork tunnels provided for the animals. The snakes should be fed around once to several times a week (species dependent), and any handling of the animal should not occur when the animal is still digesting the last meal i.e. 2/3 days afterwards, and while it still has a visible lump in its stomach.
Giant salamanders	2	Aqu	C	Aquatic insects, fish, frogs, crabs, and shrimp	Solitary	3) 4)	Giant salamanders need a freshwater pool with well-oxygenated water where half of the volume must be circulated on an hourly basis. Underwater rocks and vegetation should provide a variety of resting, swimming and hiding areas. Multiple rock platforms above the surface should be provided as the animals occasionally exit the water. As generally nocturnal animals, reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night.
Poison arrow frogs, other frogs, toads	1, 2 or 3	Arb/Ter	C	Poison arrow frogs: pinhead crickets, fruit flies, aphids, and young springtails Other frogs and toads: crickets, worms, fruit flies, or mice	Solitary	3) 4) 9) Poison arrow frogs: 12) 18)	The enclosure for frogs and toads should mimic their natural habitat, and should always be climate-controlled to species-specific needs. Arboreal species such as poison arrow frogs should be provided with dense vegetation and branches, and pools of water at multiple levels. Terrestrial species should be given large ponds with vegetation and natural substrate covering the floor, and plenty of hides and log/rock piles. Some frog and toad species are nocturnal, and so reverse lighting cycles may be needed for visitor viewing: the enclosure should be semi-dark in the day and light at night.

Requirements

1) Continual access to the outdoor area for as long as the weather permits it; however, the outdoor enclosure must be provided with a heater.
2) Certain species must be given the opportunity to bath in a heated pool that is sufficiently large also in a separated enclosure.
3) The temperature shall conform to the needs of the animals. A smaller part of the enclosure shall have a higher temperature if necessary and, depending on the species, a heating lamp shall be provided, so that the animals can warm themselves individually.
4) The climatic conditions over the year shall be selected to provide for hibernation or estivation for animals of all age groups.
5) Social structures are to be respected; individual keeping is not to be excluded.
6) For all giant tortoises, sulcate tortoises, soft-shell turtles, and goannas: If several animals are kept in the same enclosure, it must be possible to partition the enclosure when necessary or other appropriate and separate enclosures must be available.
7) Digging possibilities must be ensured.
8) According to the species, in all enclosures there must be horizontal and/or vertical climbing possibilities on trees, branches that are as thick as the animal's body, thin twigs and/or cork or stone walls.
9) Hiding possibilities must be ensured.
10) Elevated lying places.
11) Hiding places open to inspection such as hollows in the ground, wet boxes, cork tubes, or similar features shall be provided.
12) Solid enclosure construction (terrarium).
13) There shall be marked cooling at night.
14) Wet boxes or another separating feature shall be in place, even with individual kept animals.
15) The enclosures must be well ventilated (at least two mesh walls).
16) Air-conditioning is necessary (air-conditioner with a thermostat); water pool or running water of the same temperatures
17) A group specific certification of competence must be held.
18) Adequately sized water filter systems.
19) Aquarium shall be rounded corners. Circular or oval/cylindrical basins are ideal.
20) Aquariums shall have an escape proof cover.
21) Housing in freshwater, brackish water or seawater aquarium depending on species.
22) Housing in seawater aquarium without terrestrial part.
23) If available for the species kept, supplies of anti-venoms (SERA) shall be kept or shall be easy to procure through membership of a serum association.
24) For certain species, places with fine, dust-free, loose sand shall be available, where the animals can burrow.
25) Evidence shall be provided that sufficiently species-appropriate feed can be procured.
26) For certain diurnal species, bright lamps for example, halogen, HQL, or HQI) shall be used to radiate local warming areas unless the animals are housed in free-range facilities or enclosures with direct sunlight. The exclusive use of underfloor heating or infrared radiators is not permitted.
27) The food shall consist mainly of vegetarian ingredients and shall contain hardly any animal protein.
28) The food shall consist mainly of meat (as far as possible whole animals including intestines) or insects.
29) The food shall consist of meat of insects and vegetable components.
30) Constant high humidity is required (between 70 & 100%).
31) The relative humidity shall be between 70 & 100% and show marked fluctuations.
32) Housing outdoors with sheltered, heat-optimized area.

Table 1d: FISH

FISH	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Sharks	1, 2 or not listed	Aqu	C	Herring, smelt, cod, hake, mackerel, bonito, sprat, flounder, octopus, squid, shrimp, anchovies, krill, crab Iodine supplement may be needed to prevent goiter (10-30 mg/kg body weight/week)	Solitary	1) 2) 5) 6) 7)	Target-feeding individuals using tongs is recommended, as this allows an accurate assessment of the status and food intake of each animal and facilitates the administration of medication. Dependent on their size, sharks need to be fed from once a day to a few times per week. Whale sharks should be fed multiple times a day, using a ladle to deposit food in front of their swim path. If direct sunlight hits the pools, algae growth will be increased and stronger sterilisation procedures are needed which must be non-toxic to the animals. If a pool houses pelagic sharks, their "swim-glide" pattern of straight, active swimming followed by passive gliding means a dumbbell-shaped pool is optimal for allowing this natural behaviour (long rectangular pool with wider, circular areas at each end). Pools for the more pelagic species should have less rockwork and reefs to facilitate swimming and turning, and the semi-pelagic and more benthic species can be housed with other reef species amongst rocks, reef structures and in more complex pool shapes. General enrichment should involve randomly adding novel items to the pool, providing currents, and changing the rock structures around. Feeding enrichment includes the creation of currents during feedings, using target poles to create challenges to obtain food, and varying the food quantity, time and frequency.
Rays	1, 2 or not listed	Aqu	C	Herring, smelt, cod, hake, mackerel, bonito, sprat, flounder, octopus, squid, anchovies, shrimp, krill, crab Iodine supplement may be needed to prevent goiter (10-30 mg/kg body weight/week)	Solitary	1) 2) 5) 6) 7)	If direct sunlight hits the pools, algae growth will be increased and stronger sterilisation procedures are needed which must be non-toxic to the animals. Pools for pelagic ray species should have less rockwork and reefs to facilitate swimming and turning, and the more benthic species should be provided with well-covered sand floors, rocks and reef structures. The sides of the pools should be smooth to avoid abrasions. There should be enough sand space that each individual can rest on the bottom if desired, with a body length or more in between animals. General enrichment should involve randomly adding novel items to the pool, providing currents, and changing the rock structures around. Feeding enrichment includes the creation of currents during feedings, using individual hand-feeding to create challenges to obtain food, and varying the food quantity, time and frequency.
Coral reef fish (e.g. wrasse, parrotfish, butterflyfish, lionfish)	Not listed	Aqu	H, O, or C	Commercial reef fish flakes, mysid shrimps, anchovies, krill, copepods (Calanus), red algae (genus Pyropia), lettuce, spinach, grated fish flesh from low-fat fish	Solitary or Social (shoaling*)	1) 3) 4) 6)	Coral reef fish should be provided with at the very least an artificial reef structure with fake corals, but it is strongly recommended to add live corals and anemones. The reef should provide as many hiding places and refuges as there are fish in the tank, in a variety of shapes and sizes, and at least one of the walls should be sheltered from public view. For benthic species, there should be enough sand space that each individual can rest on the bottom if desired, with a body length or more in between animals. Feeding enrichment includes the creation of currents during feedings, using feeders such as film canisters with holes for brine shrimp to swim out of, using sinking feeders such as a PVC pipe capped on each end or plastic ball with holes in it to allow for foraging.

FISH	HAZARD	HABITAT	DIET TYPE	DIET	SOCIAL STATUS	REQUIRE-MENTS	ENVIRONMENT & ENRICHMENT
Schooling* fish (e.g. herring, mullet, tuna)	Not listed	Aqu	O or C	Algae, fish pellets, fish flakes, krill, shrimp, anchovies, marine worms	Social (school-ing*)	1) 3)	Schooling fish have been shown to have higher stress levels when separated from the group, and thus when in captivity they should be kept with a substantial number of their own species, in a large enough space to facilitate schooling behaviour. The pool shape should not include narrow passes or corners, as schooling fish may not use these. Natural substrate such as sand or silt will encourage digging behaviour, dependent on the species (e.g. mullet). Feeding should occur multiple times daily to ensure all individuals have the opportunity to eat.
Other bony fish (e.g. ocean sunfish, barracudas, pike, piranha, catfish)	1, 2 or not listed	Aqu	O or C	Commercial fish flakes, shrimp pellets, cichlid pellets, sardines, ancho-vies, sprat, smelt, shrimp, crayfish, crabs, krill, bloodworms	Solitary or Social (shoaling*)	1) 2) 4) 6) 7)	For benthic species, there should be enough sand space that each individual can rest on the bottom if desired, with a body length or more in between animals. Pelagic species should be provided with deep pools with enough space uninterrupted by rockwork to swim and turn around. Freshwater species should be provided with logs, rocks, vegetation and currents to mimick their natural environment. Feeding enrichment includes the creation of currents during feedings, using feeders such as film canisters with holes for brine shrimp to swim out of, using sinking feeders such as a PVC pipe capped on each end or plastic ball with holes in it to allow for foraging.

Requirements

1) The depth of the water shall not be less than the body length (BL) of the fish over two-thirds of the enclosure floor area.

2) Electrical potential should be monitored and minimised for (some of) these species (i.e. keep all electrical panels and pumps as far away from the tank as possible; avoid use of metal in the tank; avoid underwater light fittings and cables)

3) The aquarium shall not be directly open to view on all sides.

4) Structures for the fish to hide in or under must be provided for example, rock crevices, caves, tunnels, boxes.

5) The shape of the pool is very important for animal welfare and varies between species within this group.

6) Substantial areas of sand or silt needed for some species' bottom-resting or burrowing behaviour.

7) For some of these species, contingency plans to move to another pool should always be available in case of aggressive behaviour to other fish.

Appendix 2: Zoonoses

The following table gives some examples of diseases that can be transferable from animals to humans and vice versa. Zoonoses cover a broad range of diseases with different clinical and epidemiological features and control measures.

Table 2: Examples of common animal-related zoonoses

(Warwick et al., 2012)

Zoonoses/condition	Source	Signs and symptoms
Salmonellosis/gastroenteritis	Fish, amphibian, reptile, bird, mammal.	Nausea, vomiting, diarrhoea, abdominal cramps and pain, fever, painful joints, meningitis, flu-like.
E. coli infection/ gastroenteritis	Amphibian, reptile, bird, mammal.	Nausea, vomiting, diarrhoea, abdominal cramps and pain, fever, painful joints, meningitis, flu-like.
Gastroenteritis	Amphibian, reptile, bird, mammal-primate.	Nausea, vomiting, diarrhoea, abdominal cramps and pain, fever, painful joints, meningitis, flu-like.
Leptospirosis	Amphibian, reptile, bird, mammal.	Flu-like, vomiting, icterus, telangiectasia, uveitis, splenomegaly, meningitis.
Psittacosis	Bird, mammal-primate.	Flu-like, pneumonia, fever, cough.
Vibriosis	Fish, amphibian, reptile, bird.	Gastrointestinal, pain, vomiting, fever, otitis.
Lyme disease/bartonellosis	Mammal.	Flu-like, fever, rash, gastrointestinal.
Toxocariasis	Mammal.	Eye problems.
Giardiasis	Mammal-primate.	Gastrointestinal, fever, nausea, fatigue, weight loss.
Tuberculosis	Fish, amphibian, reptile, bird, mammal-primate, elephant.	Respiratory, flu-like, fever, weight loss.
Q-fever	Reptile, bird, mammal.	Fever, flu-like.
Cryptosporidiosis	Fish, amphibian, reptile, bird.	Acute gastrointestinal disturbance, nausea, vomiting, pain, fever, flu-like.
Macroparasite infestation	Fish, amphibian, reptile, bird,mammal, mammal-primate.	Gastrointestinal disturbance, abdominal cramps and pain, weight loss, flu-like.

Appendix 3: Captive animal guidelines

Animal Protection Ordinance of Switzerland (Tierschutzverordnung). The Swiss Federal Council. (2008).
Source: www.blv.admin.ch/dam/blv/en/dokumente/tiere/rechts-und-vollzugsgrundlagen/animal-welfare-ordinance-tschv.pdf.download.pdf/Animal_Welfare_Ordinance_(TSchV)_position_as_at_1.4.2011.pdf

European Association of Zoos and Aquaria (EAZA) (2012). Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria. **Source**: www.eaza.net/about/Documents/Standards_2008.pdf

The World Zoo Conservation Strategy: the Role of the Zoos and Aquaria of the World in Global Conservation - Executive Summary. (1993) The World Zoo Organisation (IUDZG) and The Captive Breeding Specialist Group of the International Union for Conservation of Nature (IUCN) Red List of Threatened SpeciesTM/Species Survival Commission Chicago, IL: Chicago Zoological Society.
Source: www.waza.org/en/site/home

The Global Federation of Animal Sanctuaries (GFAS), **Source**: www.sanctuaryfederation.org/gfas/home/

Standards for Animal Care of Bears. (2011)
Standards for Animal Care of Old World Primates. (2011)
Standards for Animal Care of New World Primates. (2011)
Other standards are available.

Global animal husbandry guidelines.
Source: www.australasianzookeeping.org/Husbandry%20Manual%20Guidelines.htm
Mammals, birds, reptiles, amphibians, fish, invertebrates.

Animal Care Manuals, American Zoo Association. **Source**: www.aza.org/animal-care-manuals/

Elasmobranch Husbandry: Conservation and Ethical Care of Sharks, Rays and Chimaeras.
Source: www.elasmobranchhusbandry.org/

International Union for Conservation of Nature (IUCN) Red List of Threatened SpeciesTM (2002).
IUCN Technical Guidelines on the Management of Ex-situ populations for Conservation.
Source: data.iucn.org/dbtw-wpd/edocs/Rep-2002-017.pdf

Husbandry and Management of Parrot Species. McMillan R. J.
Source: www.theparrotsocietyuk.org/keeping-parrots/husbandry

Elephant Management Guidelines (BIAZA) (2006, 2nd Edition) Stevenson et al (adopted by EAZA).
Source: www.biaza.org.uk/uploads/Animal%20Management/Elephant%20Guidelines%202010.pdf

Environmental Enrichment Guidelines, Association of British and Irish Wild Animal Keepers (ABWAK).
Source: www.abwak.org

Horse Care Guide. British Veterinary Association. **Source**: www.thehorse.com

NEWC equine industry welfare guidelines: **Source**: http://www.newc.co.uk/wp-content/uploads/2011/10/Equine-Brochure-09.pdf

BEVA: **Source**: https://www.beva.org.uk/

EU Zoos Directive Good Practices Document:
Source: http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf

DEFRA Horse Welfare Code of Practice:

Source: assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700200/horses-welfare-codes-of-practice-april2018.pdf

EAZA Best Practice Guidelines
Source: www.eaza.net/conservation/programmes/#BPG

WAZA Caring for Wildlife, Welfare Strategy 2015
Source: www.waza.org/files/webcontent/1.public_site/5.conservation/animal_welfare/WAZA%20Animal%20Welfare%20Strategy%202015_Portrait.pdf

The SHAPE of Enrichment
Source: theshapeofenrichmentinc.wildapricot.org/

EU Zoos Directive Good Practices Document
Source: ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf

Appendix 4: Sample CITES permit

The document below is an example of a CITES permit that the supplier who keeps CITES-listed species should hold (see Section 7 of this document). An explanation of the different sections on the permit is described on page 62, using the corresponding letters. All permits should have sections 1-10 completed.

1. Exporter/Re-exporter	**A**	PERMIT/ CERTIFICATE ☐IMPORT ☐EXPORT ☐RE-EXPORT **B**	XX 00/0000
			2. Last day of validity **C**
3. Importer	**D**		**E**
		4. Country of (re)-export	
		5. Country of import	
6. Authorised location for live wild taken specimens of Annex A species	**F**	**7. Issuing management authority**	**G**
8. Description of specimens (incl. marks, sex/date of birth for live animals)	**H**	**9. Netmass (kg)**	**10. Quantity**
		11. Cites **I** **12. EC Annex** **J** **13. Source** **K** **14. Purpose**	**L**
		15. Country of origin	**M**
		16. Permit No. **N** **17. Date of issue**	**O**
		18. Country of last re-export	**P**
		19. Certificate No. **Q** **20. Date of issue**	**R**
21. Scientific name of species			
22. Common name of species			
23. Special conditions The permit/certificate is only valid if live animals are transported in comliance with the CITES guidelines for the transport and preparation for shipment of live wild animals or, in the case of air transport, the live animals regulations published by the International Air Transport Association (IATA)			**S**
24. The (re-) export documentation from the country of re-(export) **T** ☐ has been surrendered to the issuing authority ☐ has to be surrendered to the border customs office of introduction		**25. The importation x exportation x re-exportation of the goods described above is hereby permitted. Signature and official stamp:**	**U**
		Name of issuing official:	**V**
26. Bill of lading/Air waybill No.		**Place and date of issue:**	
27. For customs use only		**Signature and official stamp:**	**W**
Quantity/net mass (kg) actually imported	Number of animals dead on arrival	Customs document Type: Number: Date:	

- **A** The name and address of the exporter/re-exporter will appear in this box
- **B** The appropriate box will be ticked indicating what the permit/certificate covers
- **C** This box shows the permit/certificate number
- **D** The name and address of the importer will appear in this box
- **E** The CITES logo will appear in this box
- **F** This box details where the species will be housed
- **G** This box provides the details of the CITES Management authority permitted the export/re-export
- **H** The type of species will be listed here. This should include numbers, sexes and details of any microchips
- **I** This details which CITES Appendix the species is listed on
- **J** The EU Wildlife Trade Annex reference will be here
- **K** This refers to the various explanations under point 13 provided on pg 63
- **L** This refers to the various explanations under point 14 provided on pg 63
- **M** This provides the country of origin of the animals/samples and the date imported to the exporting/re-exporting country.
- **N** This provides the permit number for older/original permits/certificates
- **O** This provides the date of issues for older/original permits/certificates
- **P** This provides the country of last export/reexport
- **Q** This provides the old certificate number
- **R** This provides the date of issue for old certificates
- **S** Any special conditions associated with the permit/certificate will be listed here
- **T** The appropriate box will be ticked indicating what has happened to the export/re-export documentation
- **U** This box will show the official stamp and signature of the management authority permitting the import/export/reexport
- **V** This box will list the name of the official issuing the permit/certificate and will be dated
- **W** Customs information will be recorded here

On page 60, the official instructions provided by CITES are included.

1. Full name and address of the actual (re-exporter), not of an agent.

2. The period of validity of an export permit, or re-export certificate shall not exceed six months and of an import permit 12 months. After its last day of validity, this document is void and of no legal value whatsoever and the original and all copies must be returned by the holder to the issuing management authority without undue delay. An import permit is not valid where the corresponding CITES document from the (re-)exporting country was used for (re-) export after its last day of validity or if the date of introduction into the Community is more than six months from its date of issue.

3. Full name and address of the actual importer, not of an agent.

6. For live, wild-taken specimens of Annex A species, the issuing authority may prescribe the location at which they are to be kept by including details thereof in this box. Any movement, except for urgent veterinary treatment and provided the specimens are returned directly to their authorised location, then requires prior authorisation from the competent management authority.

8. Description must be as precise as possible and include a three-letter code in accordance with Annex V to Regulation 1808/2001.

9/10. Use the units of quantity and/or net mass in accordance with those contained in Annex V to Regulation (EC) No 1808/2001.

11. Enter the number of the CITES Appendix (I, II, or III) in which the species is listed at the date of issues of the permit/certificate.

12. Enter the letter of the Annex to Regulation (EC) No 338/97 (A or B) in which the species is listed at the date of issue of the permit/certificate.

13. Use one of the following codes to indicate the source:

- **W** Specimens taken from the wild
- **R** Specimens originating from a ranching operation
- **D** Annex A animals bred in captivity for commercial purposes and Annex A plants artificially propagated for commercial purposes in accordance with Chapter III of Regulation (EC) No 1808/2001, as well as parts and derivatives thereof
- **A** Annex A plants artificially propagated for non commercial purposes and Annexes B and C plants artificially propagated in accordance with Chapter III of regulation (EC) No 1808/2001, as well as parts and derivatives thereof
- **C** Annex A animals bred in captivity for non commercial purposes and Annexes B and C animals bred in captivity in accordance with Chapter III of regulation (EC) No 1808/2001 as well as parts and derivatives thereof
- **F** Animals born in captivity, but for which the criteria of Chapter III of regulation (EC) No 1808/2001 are not met, as well as parts and derivatives thereof
- **I** Confiscated or seized specimens (1)
- **O** Pre-Convention ( )
- **U** Source unknown (must be justified)

14. Use one of the following codes to indicate the purpose for which the specimens are to be (re-) exported / imported:

- **B** Breeding in captivity or artificial propagation
- **E** Educational
- **B** Botanical gardens
- **H** Hunting trophies
- **L** Enforcement
- **M** Biomedical research
- **N** Reintroduction or introduction into the wild
- **P** Personal
- **Q** Circuses and travelling exhibition
- **S** Scientific
- **T** Commercial
- **Z** Zoos

15-17. The country of origin is the country where the specimens were taken from the wild, born and bred in captivity, or artificially propagated. Where this is a third country, boxes 16 and 17 must contain details of the relevant permit. Where specimens originating in a Member state of the Community are exported from another, only the name of the Member State of origin must be mentioned in box 15.

18-20. The country of last re-export is, in the case of a re-export certificate, the re-exporting third country from which the specimens were imported before being re-exported from the Community. In the case of an import permit, it is the re-exporting third country from which the specimens are to be imported. Boxes 19 and 20 must contain details of the relevant re-export certificate.

21. The scientific name must be in accordance with the standard references for nomenclature referred to in Annex VI to Regulation (EC) No 1808/2001

23-25. For official use only.

26. The importer/(re-)exporter of his agent must, where appropriate, indicate the number of the bill of lading or air waybill.

27. To be completed by the customs office of introduction into the Community, or that of (re-) export as appropriate. The original (form 1) must be returned to the management authority of the Member State concerned and the copy for the holder (form 2) to the importer of (re-)exporter.

Appendix 5: Sample animal stock-list

As a minimum requirement, suppliers should maintain up-to-date records of all animals they keep including numbers of each species, and annual reconciliation of births, deaths, animal acquisitions and disposals. Suppliers should undertake a stock count of all their animals every 12 months. Below is an example of part of an animal stock-list with an explanation of how to read it.

Mammalia	1	2	3	4	5	6	7	BPC	RLC
Marsupialia									
Phascolarctus cinereus adustus Queensland koala	2.0.0	2.0.0	0.0.0	0.0.0	0.0.0	2.0.0	2.0.0	ISB	NT
Potorous tridactylus Long-nosed potoroo	0.0.0	1.1.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0		LC
Insectivora									
Echinops telfairi Hedgehog Tenrec	6.2.0	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	6.2.0		LC
Primata									
Eulemur fulvus rufus Red-fronted lemur	1.2.0	0.0.0	0.0.1	0.0.1	0.1.0	0.0.0	1.1.0	ESB	VU
Eulemur macaco flavifrons Black lemur	0.1.0	1.0.0	0.0.0	0.0.0	0.0.0	0.0.0	1.1.0	EEP	VU
Hapalemur griseus alootrensis Alaotran gentle lemur	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	0.0.0	EEP	CR

Key:

Species are listed using their scientific name and common name.

Column 1: animals in collection at beginning of year

Column 2: arrivals into the collection from another facility (if CITES-listed and meets the criteria given in Appendix 4, it may require a CITES permit)

Column 3: births of animals at the facility

Column 4: neonates which died <30 days of age

Column 5: animals which died <30 days of age

Column 6: animals which left the facility for another facility

Column 7: animals in the collection at the end of the year

Numbers of the individual animals for each listed species are recorded by their sex, for example, 2.1.0. refers to 2 males:
1 female: 0 unsexed

Sometimes the stocklists include additional information:

Column 8: BPG, refers to whether the species is involved in a coordinated breeding programme (for example, EEP, ISB, etc.)

Column 9: RLC, refers to the IUCN Red List Category (for example, endangered, critically endangered, etc.) of the species

Appendix 6: Sources of further information

Category	Further info source	Description
Legislation & Conventions	EC Directive 1999/22	European legislation—keeping wild animals in zoos.
	Source: europa.eu/legislation_summaries/environment/nature_and_biodiversity/l28069_en.htm	
	CITES	Species lists governing international trade.
	Source: www.cites.org/eng/resources/species.html	
	CITES	Guidelines on transporting live specimens.
	Source: www.cites.org/eng/transport/index.php	
	Secretary of State's Standards of Modern Zoo Practice (2012). DEFRA, **Source:** www.gov.uk/government/publications/secretary-of-state-s-standards-of-modern-zoo-practice	
	Secretary of State's Standards of Modern Zoo Practice (2012). DEFRA, **Source:** www.gov.uk/government/publications/secretary-of-state-s-standards-of-modern-zoo-practice	
Organisations & Associations	BIAZA	Guidelines on public health and safety in zoos & aquaria.
	Source: www.biaza.org.uk	
	HSE	Guidelines on public health and safety in zoos & aquaria.
	Source: www.hse.gov.uk	
	Global Federation of Animal Sanctuaries (GFAS)	To apply for animal sanctuary accreditation, and sanctuary best practice.
	Source: www.sanctuaryfederation.org/gfas/home	
	EAZA	European Association of Zoo and Aquaria.
	Source: www.eaza.net	
	WWF	World Wildlife Fund Guide on what to be aware of when buying souvenirs.
	Source: www.wwf.org.uk/what_we_do/safeguarding_the_natural_world/wildlife/illegal_wildlife_trade/watch_what_you_buy.cfm	
	EU Zoos Directive Good Practices Document (2015).	
	Source: http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf	
	Secretary of State's Standards of Modern Zoo Practice (2012). DEFRA,	
	Source: www.gov.uk/government/publications/secretary-of-state-s-standards-of-modern-zoo-practice	
	NEWC equine industry welfare guidelines: **Source**: http://www.newc.co.uk/wp-content/uploads/2011/10/Equine-Brochure-09.pdf	
	BEVA	
	Source: https://www.beva.org.uk/	

Organisation & Associations	OIE Platform for Animal Welfare in Europe:	
	Source: http://oldrpawe.oie.int/index.php?id=280	
	Welfare Quality®	Animal welfare principles & criteria.
	Source: www.welfarequalitynetwork.net	
	National Equine Welfare Council (NEWC): equine industry welfare guidelines: **Source:** www.newc.co.uk/wp-content/uploads/2011/10/Equine-Brochure-09.pdf	
	British Equine Veterinary Association (BEVA): **Source:** www.beva.org.uk/	
	World Organisation for Animal Health (OIE): Platform for Animal Welfare in Europe: **Source:** http://oldrpawe.oie.int/index.php?id=280	

Further reading

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Appendix 7: Authorship and acknowledgments

Authorship

This manual and the supporting guidance manuals have been developed by ABTA developed through a multi-stakeholder consultation process involving industry experts, scientists, zoologist organisations, associations and nongovernmental organisations (NGOs) from around the world. It is important to point out that the content of these manuals does not necessarily reflect the exact views and therefore endorsement of the listed individuals or organisations. All stakeholders have, however, seen merit in these guidance manuals and provided invaluable input during the consultation. ABTA extends its appreciation to all the stakeholders for their contributions.

Consultees

This manual has been developed by ABTA through a multi-stakeholder consultation process involving the following stakeholders as listed below.

The content of these manuals does not necessarily reflect the exact views and therefore endorsement of the listed individuals or organisations. All stakeholders have, however, seen merit in these guidance manuals and provided invaluable input during the consultation. ABTA extends its appreciation to all the stakeholders for their contributions.

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- *Animondial*
- *ANVR*
- *Born Free Foundation*
- *European Centre for Eco and Agro Tourism (ECEAT)*
- *European Association of Zoos and Aquaria (EAZA)*
- *Global Spirit Animals In Tourism Ltd*
- *The HELP Foundation*
- *Humane Society International*
- *Lappish Sled-dog Entrepreneur's Association*
- *Mahouts Elephant Foundation*
- *Preverisk*
- *The International Coalition for Working Equids (ICWE)*
  - *The Donkey Sanctuary*
  - *The Society for the Protection of Animal Abroad (SPANA)*
  - *World Horse Welfare (WHW)*
  - *Brooke – Action for Working Horses and Donkeys*
- *University of Lapland*
- *World Animal Protection (WAP)*
- *World Cetacean Alliance (WCA)*

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Appendix 8: Photo captions and credits

Page	Caption	Credit
Front cover (main)	Africa setting	Stock image library
Front cover (inset)	Eagle	Michael Vickers
	Camel	Stock image library
	Orangutans	Stock image library
	Elephant eating grass	Stock image library
Intro section	Zebras in the wild	Michael Vickers
2	Viewing wildlife from a distance	Tribal Voice Communications
3	Tourist viewing elephants eat from feeding tubes	World Animal Protection
6	Mongoose enclosure with natural substrate, structures and shelter	Born Free Foundation
9	Gorilla	Ian Redmond
10	Example of a good bridle	Sailing Nomad
12	Careful management of wildlife tourism is needed to ensure health and safety of animals.	Born Free Foundation
13	Responsible whale watching	Whale Watch Partnership Elding
17	Donkeys	Stock image library
18	Tiger cub used as a photo prop	Born Free Foundation
19	Using animals for begging is an unacceptable practice	Jon Hurd
20	Trophy hunting is an unacceptable practice	Scott Padavan
21	Riding can be detrimental to ostriches	Markiza
22	Dog sledging	Stock image library
25	Mules	Stock image library
26	Parrots in transportation	LAGA

Page	Caption	Credit
27	CITES permits are also required for trade in animal parts and deliveries such as coral jewellery	Born Free Foundation
29	Transporting wildlife	Stock image library
30	Phelsuma ghecko	Stock image library
31	Dolphin drives are a widely opposed practice used to capture dolphins for both their meat and for use in captive animal attractions	WDC
32	Bear enclosure with natural substrate, structures and shelter	Born Free Foundation
34	Leopard	Stock image library
36	Farrier with horse, Ethiopia	Born Free Foundation
37	Tourist attraction – Maasai Tribe in Kenya.	Dr Sheryl Mvule
38	Training bears to dance is an unacceptable practice.	International Animal Rescue
40	Ivory chopsticks and other souvenirs destined for market	LAGA
41	Shells are an example of unsustainable wildlife souvenirs	Born Free Foundation
42	Shark fins, often used for shark fin soup	Stock image library
43	Whole shark display in restaurant	Unknown
43	Whole crocodile display in restaurant	Unknown
44	Volunteers in action	Tribal Voice Communications
45	Lion cubs	George Logan
45	Responsible walking safari	Tribal Voice Communications
45	Marine conservation fieldwork	Hugh Felton
46	Stray animals can be found in and around tourist hotels and venues	Stock image library
47	Stray animals can be found in and around tourist hotels and venues	Stock image library
48	Lion cubs in the wild	George Logan

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ABTA ANIMAL WELFARE GUIDELINES

Animals in Captive Environments

Elephants in Captive Environments

Working Animals

Wildlife Viewing

Unacceptable Practices

The manual for cetacea in captivity is under review.

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