Department for Environment, Food & Rural Affairs

Llywodraeth Cymru
Welsh Government

The Scottish Government
Riaghaltas na h-Alba

Standards of modern zoo practice for Great Britain

May 2025

The Department for Environment, Food and Rural Affairs is responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming, and fishing industries in England.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.

This document has been produced with the Scottish and Welsh Government, which undertake similar activities to benefit their respective countries.

This publication is available at www.gov.uk/government/publications

Any enquiries regarding this publication should be sent to us at

England

zoos.branch@defra.gov.uk

www.gov.uk/defra

Wales

companionanimalwelfare@gov.wales

https://gov.wales/animal-welfare

Scotland

animal_health_welfare@gov.scot

www.gov.scot

Contents

Introduction

Legislative framework

1. The Zoo Licensing Act (1981) (hereafter ‘the Act’) regulates zoos in England, Wales and Scotland. Following consultation pursuant to Section 8 of the Act, these standards of modern zoo practice, the Standards of Modern Zoo Practice for Great Britain (hereafter ‘the Standards’), have been specified by the Secretary of State as they apply in England, the Welsh Ministers as they apply in Wales and the Scottish Ministers as they apply in Scotland. The Standards are the expected standards to be met with respect to the management of zoos and the animals in them. Zoo Licence Holders are ultimately responsible for ensuring adherence to the Standards. Due to the widely differing nature of zoo collections, not every Standard will apply equally to all zoos.

2. These Standards are expected to be met by Zoo Licence Holders, zoo operators and staff, keepers, and persons in charge of animals in zoos. They should be read in conjunction with the Zoo Licensing Act 1981 and the Zoo Licensing Act 1981: Guide to the Act’s Provisions (2012) (hereafter ‘the Guide’).

3. Under the Animal Welfare Act 2006 in England and Wales, and the Animal Health and Welfare (Scotland) Act 2006 in Scotland, animal keepers have a legal duty of care to provide for the ‘Five Needs’. These are the need:

    - for a suitable environment
    - for a suitable diet
    - to be able to exhibit normal behaviour patterns
    - to be housed with, or apart from, other animals
    - to be protected from pain, suffering, injury, and disease

    The ‘Five Needs’ were based on the ‘Five Freedoms’ developed for livestock by the UK Farm Animal Welfare Committee and provide a framework for the Standards.

4. Compliance with the Standards does not guarantee that the requirements of other legislation have been met. Legislation relevant to zoos at the time of publishing is outlined in the preface to each section to assist users. However, it should be recognised that legislation is subject to change and the Licence Holder is responsible for making sure that the zoo adheres to current requirements.

Purpose of the Standards

5. The Standards have been formulated to meet four key purposes:

    - to provide information to the Licence Holders and persons in charge of animals held by zoos about the standards they must achieve to meet their obligations under the Act as well as those other standards they are expected to meet
    - to assist Local Authorities in determining whether to grant, renew or refuse a zoo licence
    - to assist zoo inspectors in assessing the standards of animal husbandry, animal welfare and many other factors relevant to the operation of a zoo
    - to provide clear and transparent guidance as a basis to assist Local Authorities to robustly enforce zoo licence requirements

Overview of the Standards and additional notes

6. The Standards contain sections on the animal welfare 'Five Needs' and sections relevant to the management of zoos and the animals in them, including the transport and movement of animals, public safety and escapes, animal experiences, and conservation, education, and research activities in zoos.

7. Sections 1 to 13 contain general standards that are applicable to a wide range of species and exhibits. Further standards on specific taxa are covered in appendices on 'Specialist Exhibits'. These appendices must be reviewed by Licence Holders and operators and, where applicable, the standards adhered to.

8. Standards that apply to specific species may not be applicable to all zoos. In these cases, the Standards will specify the type of animal or exhibit to which it applies.

9. Special attention must be paid to the list of hazardous animals in Appendix B on 'Hazardous Animal Categorisation'. Where a standard refers to a 'Category 1A listed', 'Category 1 listed' or 'Category 2 listed' animal, this is in relation to the Appendix B categories as described.

10. Each Standard is expected to be met. Additional information is included under Additional notes in some cases; these are also expected to be adhered to by the Licence Holder.

11. Where any of the Standards are specifically mentioned as conditions on the zoo's licence, failure to meet those conditions will constitute a breach of the zoo's licence. As licences shall also be granted subject to conditions requiring the conservation measures referred to in Section 1A of the Zoo Licensing Act (1981) to be implemented, failure to meet Section 1A conservation measures will also constitute a breach of the zoo's licence. Where any of the zoo licence conditions are breached, the Local Authority shall issue an enforcement direction to the Licence Holder, requiring compliance with the specific condition in question. Failure to comply with

an enforcement direction within the specified timeframe may lead to a zoo closure direction.

Interpretation of terms used

12. The following terms are used in the Standards and in associated documentation:

- **‘animal’** means animals of the classes Mammalia, Aves, Reptilia, Amphibia, Pisces and Invertebrates (any mammal, bird, reptile, amphibian, fish, or invertebrate) or other multicellular organism that is not a plant or fungus
- **‘animal training’** means the modification of an animal’s behaviour by a human carer to achieve a goal
- **‘aquarist’** includes any person employed, including volunteers, in the management or husbandry of aquatic animals within the licensed zoological collection
- **‘collection’** means all the animals held within the zoo boundary, plus any other animals that are part of the collection but are kept off site. This includes captive animals that are on and off display, animals that are wild and domesticated, and animals occasionally held off the licenced premises where they are considered part of the zoo collection
- **‘education’** means learning in its broadest sense, not confined to opportunities and experiences for schools or children, but for learners of all ages and needs. It includes all visitors to the zoo, as well as off-site and online engagement. The term ‘conservation education’ reflects the need for biodiversity conservation to be at the core of a zoo’s education provision
- **‘enclosure’** means any accommodation provided for zoo animals
- **‘enclosure barrier’** means a physical barrier to contain an animal within an enclosure
- **‘enrichment’** is a dynamic process for enhancing animal environments within the context of the animal’s behavioural biology and natural history. Environmental and/or management changes are made with the goal of increasing the animal's behavioural choices and drawing out their species-appropriate behaviours, thus enhancing animal welfare
- **‘Environmental Management Plan’ (EMP)** means a dedicated document that outlines the environmental parameters required to be provided to an animal for it to thrive, typically for species where critical environmental life support in an animal enclosure is dependent on external utilities; this includes the actions to be taken when monitored parameters fall outside of the expected ranges
- **‘hazardous animal’** means any animal listed in Category 1A, Category 1 or Category 2 of Appendix B
- **‘keeper’** means any person, including volunteers or students, involved in the management or husbandry of the animals within the licensed zoological collection
- **‘Licence Holder’** means the person, persons or corporate body listed on the licence granted by the relevant Licensing Authority for the zoo
- **‘member of staff’** means any person employed, including volunteers, by the Licence Holder to be involved in the operation or management of the zoo

- **‘member of the public’** means anyone who might visit the zoo in a non-professional capacity, including those who make appointments or are members of a private club or organisations related to the zoo
- **‘pet shop’** means a premise where a licence is in force or is required. In England, pet shops are licensed under the Animal Welfare (Licensing of Activities Involving Animals) Regulations 2018. In Wales, pet shops are licensed under the Animal Welfare (Licensing of Activities Involving Animals) (Wales) Regulations 2021 and in Scotland, licensing is under the Animal Welfare (Licensing of Activities Involving Animals) (Scotland) Regulations 2021. In all 3 countries, a pet shop may, in addition, require a zoo licence if exhibiting wild animals which are not for sale
- **‘Species of Special Concern’** means any species formally listed under The Invasive Alien Species (Enforcement and Permitting) Order 2019, also referred to as Invasive Non-Native Species (INNS) or Invasive Alien Species (IAS)
- **‘stand-off barrier’** means a physical barrier set back from the outer edge of an enclosure barrier to provide further distance between the public and exhibited animals
- **‘taxonomic category’** means a group or assemblage of species recognised as an entity in scientific classification
- **‘the list’** means the list of zoo inspectors appointed by the Secretary of State under Section 8 of the Act. Zoo inspectors are appointed by the Secretary of State for the Department for Environment, Food and Rural Affairs (Defra) in England, the Cabinet Secretary for Rural Affairs and Islands in Scotland, and the Minister for Rural Affairs and North Wales, and Trefnydd in Wales
- **‘vivarium’ (pl. ‘vivaria’)** means an enclosure, container or structure adapted, or prepared for keeping animals under natural or semi-natural conditions. This is often used synonymously with the term ‘enclosure’
- **‘wild animal’** means any animal not normally domesticated in Great Britain
- **‘zoo’** means any establishment where wild animals are kept for exhibition, to which members of the public have access, with or without charge for admission, other than a pet shop. A zoo falls under the Act if it is open to the public on 7 days or more in any period of 12 consecutive months
- **‘zoo boundary’** means the total area of land for which planning permission has been obtained for the purposes of the zoo’s operation and is regulated under the Zoo Licensing Act (1981); it encompasses the zoo’s licenced premises
- **‘zoo perimeter’** means the boundary that surrounds the animal area(s) and is designed to discourage unauthorised entry and, so far is reasonably practicable, act as an aid to the confinement of the animals within the zoo. This may be the same as, or smaller than, the zoo boundary
- **‘zoo premises’** – is a general term including the entire zoo licensed site, everything within the zoo boundary. It may consist of more than one site

Section 1: General Requirements

Display of zoo licence

1.1 The name of the Licence Holder (whether this is an individual or corporation) must be clearly and prominently displayed on any website and online platforms used in relation to the zoo.

1.2 A current copy of the zoo licence, including all conditions, must be clearly and prominently displayed at each public entrance of the zoo.

1.3 Where the zoo carries out outreach activities a current copy of the zoo licence, including all conditions, must be clearly and prominently displayed with all animals exhibited at locations away from the zoo premises.

Zoo management

1.4 The Licence Holder must be able to demonstrate that they, or the zoo operator (if different), are suitably competent to meet the purpose of managing the zoo.

Additional notes

a) The 'zoo operator' is the person responsible for managing the zoo, be it the Licence Holder themselves or a separate person appointed by the Licence Holder
b) When the Licence Holder is not experienced in animal management, they must appoint a suitably competent person to manage the animals
c) A competent person is someone who has sufficient training and experience or knowledge and other qualities that allow them to meet the required purpose, including compliance with the Standards

1.5 The Licence Holder must make sure that any person employed to work or volunteer with the animals has not been convicted of any offence under the enactments listed in the Zoo Licensing Act (1981), including any offences involving the ill-treatment of animals.

Additional notes

a) All staff must sign a declaration form declaring that they have not been convicted of any offence involving the ill-treatment of animals upon employment
b) Employees must notify their employer if convicted of any offence involving the ill-treatment of animals during their employment
c) If the Licence Holder becomes aware of such a person with any such convictions, they must immediately suspend the person pending investigation and notify the Licensing Authority
d) Ill-treatment includes any offence relating to animals; for example, it includes offences under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in addition to animal welfare offences

1.6 The Licence Holder must produce a written contingency document that outlines the management of the animal collection in the event of significant long-term loss of income (for instance, greater than 6 months), a major incident or permanent closure that prevents the Licence Holder from carrying out their ability to meet the requirements of the Standards. This document must be updated annually and be available to the Licensing Authority or the licensing inspection process when requested.

Additional notes

a) This document must include:
   (i) details of any professional organisations of which the zoo is a member, who could help with the placement or re-homing of animals if required
   (ii) contact details for other commercial or charity re-homing services (where applicable)
   (iii) details of animals that are on loan and/or owned by other parties (where applicable)
   (iv) list of animals that are part of managed programmes
   (v) succession planning in the event of incapacitation or death of the Licence Holder, or the zoo operator, where this is a different person

b) Senior management staff must be made aware of the content of the document to enable implementation if ever required

1.7 The Licence Holder must have public liability insurance. They must provide their certificate of insurance or a letter of confirmation from the insurer or the terms of the policy to the Licensing Authority on an annual basis.

1.8 The Licence Holder must ensure that insurance cover which covers them and every other person under a contract of service or acting on their behalf against liability for any damage or injury which may be caused by any of the animals, whether inside or outside the zoo, including during transportation to other premises. They must provide their certificate of insurance or a letter of confirmation from the insurer or the terms of the policy to the Licensing Authority on an annual basis.

Staffing and staff training

1.9 Sufficient numbers of staff must be available to make sure that the requirements of the Standards are met at all times. The Licence Holder must maintain appropriate staffing levels that take into account:

a) the number of animals
b) the size of premises
c) the layout of the premises
d) the competence and experience of staff
e) use of part-time or voluntary staff
f) the number of visitors

1.10 A designated senior member of staff must be readily available at all times. This member of staff must have the authority to be able to make appropriate decisions

and instigate necessary actions on behalf of the Licence Holder or zoo operator (if different).

Additional note

a) ‘Available at all times’ includes on-site or on-call within a reasonable distance when required to attend

1.11 Staff must be familiar with all operating procedures relevant to their roles and responsibilities and be kept up to date where there are changes.

1.12 Keepers must be suitably competent in the management and care of the species under their responsibility.

1.13 The Licence Holder must provide and implement a documented training programme, including professional development opportunities for all animal staff.

Additional notes

a) The training programme must be reviewed and updated on an annual basis and must include:
    (i) an induction programme that outlines the expectations and requirements of the employee
    (ii) a process of annual appraisal for individuals, including planned continued professional development (CPD) and recognition of knowledge gaps

b) It will be applicable to any members of animal staff and can be shown by engagement with courses, written or online learning, keeping up to date with any research or developments for specific species and the documentation of the annual appraisal.
c) The Licence Holder must make provision for keepers’ CPD to ensure that the keepers remain current in their knowledge of the species in their care or with regard to new species that are planned to join the collection.
d) Evidence of staff attendance or completion of any training must be provided.
e) Examples of CPD include (but are not limited to):
    (i) reading relevant journals or articles
    (ii) taking relevant accredited courses and further education
    (iii) training and shadowing
    (iv) attending conferences
    (v) conducting research and participating in specialist interest groups

1.14 A list must be maintained and updated regularly of all staff authorised to work with the animals, including details of staff experience, expertise, training and qualifications and clearly defined areas of responsibility.

Documentation required for zoo inspections

1.15 All the records that the Licence Holder is required to keep must be available for inspection by an inspector in a visible and legible form on the zoo premises. Records must be maintained for a minimum period of six years.

1.16 All animal records must be kept onsite at the zoo during an animal's life and for at least 6 years after its death or departure.

1.17 All records required for inspection, paper or electronic, must be backed up, and kept securely. Provision must be made for long-term archiving of records in a secure format.

1.18 All documentation submitted or reviewed at inspection or in response to enforcement actions must be to the satisfaction of the Licensing Authority and/or the zoo inspectorate. In the case of Local Authority owned zoos, documentation must be to the satisfaction of the Animal and Plant Health Agency (APHA) rather than the Licensing Authority as per Section 13 of the Zoo Licensing Act (1981).

1.19 A summary of documentation required for inspection is provided in Appendix C of these Standards. Further information, including any records, may be required and must be made available during an inspection.

Section 2: The need for a suitable environment

General provisions

2.1 All animals must be provided with suitable enclosures to meet their physical, psychological and behavioural needs.

2.2 Suitable accommodation and relevant knowledge of the species must be available on the zoo premises before acquiring any new animals or increasing population size through breeding.

2.3 The environmental quality of enclosures must be suitable for the welfare and behavioural needs of the species and individual animals at all times, both indoors and outdoors. Enclosures must have species-appropriate environmental conditions including, but not limited to, levels of:

a) temperature
b) humidity
c) ventilation
d) lighting
e) noise
f) vibration
g) other parameters as required for the taxa

Records must be maintained to demonstrate that these species-appropriate environmental parameters are being provided.

2.4 Where the species-appropriate environmental conditions are provided artificially, the target ranges for each environmental parameter that are appropriate for the species kept, the method and equipment used to monitor these parameters, and the processes to be implemented where monitored parameters deviate outside the defined target ranges must all be documented in an Environmental Management Plan (EMP). The EMP must be reviewed, and updated (where required), on an annual basis.

2.5 The environmental complexity of enclosures must be suitable for the welfare and behavioural needs of the species and individual animals at all times, both indoors and outdoors. This must include appropriate space for the individual animal or social group and adequate resources to mitigate undesirable competition or abnormal behavioural signs of stress.

2.6 Where an animal requires access to both indoor and outdoor enclosures to meet its welfare needs, the animal must be given free access to both at all times. Routine, limited access is not permitted, except in the following circumstances:

a) during cleaning or maintenance
b) during introductions of new animals

c) during breeding events
d) on medical grounds and during veterinary procedures
e) when following government-issued disease management directives (for example, for avian influenza)
f) where the risk of predation is known to be high and steps are being taken to address it
g) during extremes of weather (including when night-time temperatures are predicted to be below the acceptable range for that species or where there is increased risk of tree fall close to or onto enclosures during high winds) and/or
h) enclosure security, for instance, enclosure damage leading to potential escape risk, animal injury or another similar outcome

Additional notes

a) Rotational sharing of a shared indoor and/or outdoor enclosure, where one group has access and the other is excluded is not permitted unless the excluded group has access to a separate area with similar resources
b) Animals are not to be locked in or out of their indoor areas to ensure that they are on display for the public, unless there are adequate facilities and shelter in the area in which they are to be confined
c) Enclosures must be designed to be secure at all times, both night and day. Perceived safety concerns for Category 1A or 1 listed hazardous animals are not considered warranted justification to secure animals routinely in houses overnight, unless all of their welfare needs are met by the indoor facility alone
d) Where the risk of predation is known to be high, animals may be secured indoors until the problem is resolved. Animals may not be housed as a routine management tool to address predator concerns
e) Where maintenance is prolonged, relocation must be considered where appropriate

2.7 All animals must be provided with the opportunity for shelter and shade for protection against weather either through access to indoor enclosures or by the provision of shelters within outdoor enclosures. This includes any weather event such as heat, cold, rain and wind.

2.8 Refuge areas must be provided in enclosures to give animals the opportunity to avoid public view; remote viewing is permissible, for example, by CCTV.

2.9 Enclosures must be designed to allow animals to remove themselves visually from other individuals in the same or an adjacent enclosure.

2.10 Enclosures and enclosure barriers must be designed and maintained to minimise the risk of injury or harm to the animals either from interaction with enclosure materials or as a result of enclosure design. There must not be any hazards which are likely to be toxic to the animal.

Additional note

a) Trees, shrubs or other plants within or near animal enclosures must be regularly inspected and lopped, felled or pruned to avoid animals being harmed by falling branches, toxicity or trauma

2.11 Where electric fencing or glass viewing panels have been demonstrated to unintentionally impact native wildlife negatively (for example, recurrent bird strike on a viewing window), mitigation strategies must be installed to safeguard the species affected.

2.12 Defects in enclosures or barriers which may compromise the safety of the animals must be rectified as soon as possible. The animals must be contained in a secure location until repairs have been completed. Animal welfare must not be significantly compromised during containment whilst repairs are made.

2.13 Any novel, natural or non-natural material to be used as enclosure furnishing, substrate or enrichment must be non-toxic and not considered a danger or hazard for that species prior to being introduced to the animal(s) or animal enclosures.

2.14 All equipment and services within enclosures must be installed and maintained such that it does not present a hazard to the animals and their safe operation cannot be disrupted by the animals.

2.15 Tools, equipment, machinery, and rubbish must not be left unattended in places where they may cause harm to animals, provide a means of escape, or serve as missiles or weapons.

2.16 Enclosures must be designed and maintained to deter entry by predators.

2.17 All necessary equipment needed to address the maintenance and uninterrupted operation of life support systems, along with related consumables, must be kept on-site.

2.18 The zoo must be able to demonstrate regular servicing of life support systems, as required, and demonstrate procedures to be taken in the event of life support systems failure.

2.19 Where critical environmental life support in an animal enclosure is dependent on external utilities, adequate backup equipment must be kept on-site in case of failure. The Licence Holder must be able to demonstrate that backup facilities are regularly tested and operating as required to meet the needs of the collection.

2.20 Where less immediate, time-sensitive environmental life support for a species is necessary, the Licence Holder must either have backup facilities on site, access to backup facilities that can be brought to site or a documented emergency process to move animals to a facility that can provide for their needs.

2.21 The Licence Holder must be able to demonstrate that animal enclosures take into account the needs of the animals during handling, capture and preparation for transport.

Additional note

a) Enclosure design must consider the needs for restraint of the animals for handling, medical procedures or transportation as may be reasonably needed during the lifetime of the animal, for example, crushes, restraint chutes, race ways for loading, and other handling facilities

Section 3: The need for a suitable diet

General provisions

3.1 Constant access to fresh, clean drinking water must be provided for animals that require it.

3.2 All animals in the collection must be provided with a diet that is suitable in nutritive value, quantity, quality, and variety for the species and individual animals with respect to their:

a) age
b) body condition
c) size
d) physiological status
e) reproductive status
f) seasonal variations

3.3 All aspects of animal nutrition must be based on current nutritionist or veterinary advice. For instance, this can include consulting published husbandry or nutritional guidelines or consultation with a zoo animal nutritionist or veterinary surgeon.

3.4 Supplementation must be provided where freezing or method of thawing may compromise the nutritional value of the fish or meat.

3.5 Feeding methods must be safe and have been risk assessed for all animals being fed.

3.6 The presentation of food and drink must be appropriate for the species and the individual animals. It must be presented in such a way and in sufficient quantity that all animals can access a nutritious, balanced diet and negative interactions and resource guarding are minimised.

3.7 The frequency and timing of feeds must take into account the natural feeding behaviour of the species and encourage natural feeding and foraging behaviours, including the time spent feeding and foraging.

3.8 The number of receptacles or feeding points used to provide food and drink must be appropriate for the number of animals in the enclosure and must be placed in such a way that they are accessible and available to all the intended animals within the enclosure.

3.9 Receptacles or feeding points used for food and drink must be of appropriate design and material for the type of animal.

3.10 Receptacles for food and drink must not be used for any other purposes than providing food and drink to animals.

3.11 Food and drink, and their receptacles when used, must be placed in positions which minimise contamination by animals, captive and/or wildlife, or members of the public.

3.12 Food and drinking receptacles must be cleaned at least daily unless species-specific behaviour requires less frequent cleaning. Sources of evidence and decision-making must be made available during inspections where cleaning takes place less frequently than daily.

3.13 Self-feeders (including automated feeding and watering systems) must be inspected twice daily to make sure that they are working effectively and do not contain old or contaminated food or water that is unfit for consumption.

3.14 Uneaten food must be removed from animal enclosures as appropriate to maintain hygiene.

3.15 A written record (diet sheet) must be kept of all diets fed to animals, including sources of information used to produce or update diets, changes when they are made, and any individual variation made due to life stage, medical or other reason.

3.16 The current written diet sheet for each species, or individual where applicable, must be clearly visible or readily available at the point of food preparation.

3.17 Diets must be reviewed at least annually as to their suitability for the species' or individual's needs, taking into consideration changes in nutrition science for a species, as well as whether the diet fed, and then consumed, is as per the diet sheet as written. The review date, changes made, and/or actions undertaken must be recorded on the diet sheet and in the animal's records.

3.18 Where any vertebrates are killed for food this must be done humanely, in accordance with current legislation. Where vertebrates are killed for food on-site, records of numbers and methods of killing must be maintained.

Food preparation and hygiene

3.19 Supplies of food and drink must be stored and prepared under hygienic conditions.

3.20 Supplies of perishable food and drink, other than those brought into the premises fresh on a daily basis, must be stored, where appropriate, under refrigeration.

3.21 Supplies of food and drink must be protected against dampness, deterioration, mould, and contamination by pests.

3.22 There must be a procedure in place to avoid cross contamination between equipment, food preparation, utensils, and surfaces.

3.23 All staff must observe strict standards of personal hygiene and must conform to good hygiene practice in the preparation of all food types. Training and appropriate facilities must be provided.

3.24 Meat and fish, and fruit and vegetables must be prepared either in separate areas or by methods of timed separation with thorough cleaning and disinfection between uses. Where timed separation is used, the Licence Holder must have a documented procedure and must be able to demonstrate its implementation.

3.25 Dedicated equipment (such as chopping boards and knives) for the preparation of different food groups must be used. In addition, these must be cleaned and disinfected between use. Equipment must be replaced when too worn to clean, for example, chopping boards.

3.26 Refrigerators and freezers storing animal food must be correctly labelled as to the category of material contained, to clearly differentiate them from those containing waste material or food intended for human consumption.

Additional note

a) Food or drink for human consumption must not be stored with food or drink intended for animal consumption.

Management of frozen food

3.27 The Licence Holder must have a standard operating procedure (SOP) for managing frozen fish and meat to ensure these items are kept frozen until defrosted for feeding using established food preparation guidelines for these types of frozen food. Records must be maintained to demonstrate the implementation of the SOP.

Additional notes

a) The SOP must give consideration to Hazard Analysis and Critical Control Point (HACCP) food safety principles, and must include:
   (i) the source and assessment of quality of the frozen fish and meat
   (ii) the method of storage
   (iii) the maximum length of time the food is stored frozen
   (iv) the temperature at which the food is stored frozen
   (v) stock rotation in the freezer
   (vi) the thawing process for the fish and meat
   (vii) the maintenance of thawed food in such a way that degradation and bacterial contamination is minimised so that the nutritional value and quality of food is optimal at the time of feeding

b) The SOP must demonstrate consideration of how to mitigate the degradation products, and/or bacterial contamination, of food as part of the management procedures and any other relevant details specific to the zoo's facilities

3.28 Frozen fish and meat must be defrosted at a temperature of 7^{o}C or less, in a sealed container or a closed refrigerator, and not in running or still water, except in an emergency situation or where the size and nature of the product is severely compromised by extended defrosting, for instance small pinkies or small sprats.

3.29 Records must be maintained of maximum and minimum temperatures of freezers used for storing animal food.

3.30 Thawed, or partially thawed food must not be refrozen. Once thawed, unused fish and meat must be discarded the same day or considered for use for other species, where appropriate.

The feeding of live vertebrate prey

3.31 The welfare of vertebrate prey animals is protected by the Animal Welfare Act 2006 in England and Wales and the Animal Health and Welfare (Scotland) Act 2006 in Scotland and, where they are kept for the production of food, wool, skin, fur or other products, by retained EU Regulation 1099/2009 on the Protection of Animals at the Time of Killing across the UK. The feeding of live vertebrate prey to carnivores would not generally appear to be compatible with this legislation and must only be considered in the most extreme of circumstances, after taking into account the detailed requirements of this legislation.

3.32 Live feeding of vertebrate prey in captivity as part of training to develop hunting skills for specific predatory animals intended for release to the wild must only occur where the zoo operator considers that such training must be undertaken to avoid starvation on release and must only be conducted as part of a recognised conservation project. Where live feeding of vertebrates is undertaken as part of a predator conservation release programme the following conditions must also be met:

a) The release must be planned and undertaken in accordance with the requirements of Section 10.9 of these Standards, including following IUCN Guidelines for Reintroductions and other Conservation Translocations
b) Prior to any live feeding taking place a written justification and ethical review must be undertaken by the Licence Holder, taking into consideration the welfare of predator and prey, and alternative options for training the predator
c) Prior to any live feeding taking place, an agreed training programme must be documented, which minimises the use of live prey as far as possible (for example, through the use of environmental and dietary enrichment methods), and ensures that live feeding is confined to the training period in preparation for release
d) Prior to any live feeding, an agreed, written live feeding procedure must be documented
e) Prior to any live feeding, the Licensing Authority must be notified of the intent to live feed vertebrate prey and be provided with copies of the justification/ethical review, training programme and live feeding procedure
f) Live feeding must be undertaken in line with the agreed live feeding procedure
g) Live feeding must be observed, and prey must not be left alive in the enclosure beyond a period determined in the live feeding procedure, which takes into consideration the needs of both the predator and the prey species. Observation can include the use of remote real-time visual monitoring systems
h) The live feeding procedure must stipulate that any individual prey species that is not killed by the predator is humanely euthanased on removal from the enclosure to prevent cumulative welfare challenges resulting from reuse and re-exposure to predation

i) Live feeding of vertebrates must not take place in the presence of the public or be shown to the public
j) All live feeding of vertebrates must be documented and recorded, including the time of release of live vertebrates into the area to be fed and the time that the animal was killed
k) Records must be maintained of any injuries that the predator receives from the prey item
l) An individual predator must not be offered live feed for more than 6 consecutive months and an ethical review must be undertaken on a monthly basis to review the effectiveness of the training programme and the efficacy of the ability of the animal to subdue and kill its prey
m) Where concerns are noted and animals are not learning as expected the Licence Holder must review whether it is appropriate to continue, taking into account the views of the Lead Veterinary Service and programme managers for the project
n) At the termination of any live feeding programme the Licence Holder must review the efficacy of the training or transition programme and identify, where possible, areas for improvement in the training of the predator species and opportunities where the duration of the training programme can be reduced or the use of live feeding can be minimised to ensure continual improvement in the welfare management of both predator and prey

3.33 Regarding live feeding under any other extreme circumstances:

(a) All efforts must be taken to feed the animal with killed prey in the first instance and records maintained demonstrating that this has been unsuccessful
(b) A written justification and ethical review must be undertaken by the Licence Holder taking into consideration the welfare of predator and prey prior to any live feeding commencing
(c) An agreed live feeding procedure must be documented and adhered to prior to it being commenced
(d) Live feeding must be observed, and prey must not be left alive in the enclosure beyond a period determined in the live feeding procedure, which takes into consideration the needs of both the predator and the prey species. Observation can include the use of remote real-time visual monitoring systems
(e) Live feeding of vertebrates must not take place in the presence of the public or be shown to the public
(f) The live feeding procedure must stipulate that any individual prey species that is not killed by the predator is humanely euthanased on removal from the enclosure to prevent cumulative welfare challenges resulting from reuse and re-exposure to predation
(g) All live feeding of vertebrates must be documented and recorded, including the time of release of live vertebrates into the area to be fed and the time that the animal was killed
(h) Records must be maintained of any injuries that the predator receives from the prey item
(i) The animal receiving live food must start the transition to killed food as soon as possible after the zoo receives the animal
(j) An ethical review must be undertaken on a monthly basis to review the effectiveness of the transition programme and the efficacy of the ability of the animal to subdue and kill its live prey. Where concerns are noted and

animals are not transitioning as expected the Licence Holder must review whether it is appropriate to continue, taking into account the views of the Lead Veterinary Service and the keepers for the individual being fed

(k) An individual predator must not be offered live feed for more than 3 consecutive months. After this time the predator must be euthanased or exported to another collection outside of the UK, whichever is considered best for its welfare, and that of its live-fed prey

(l) At the termination of any live feeding programme the Licence Holder must review the efficacy of the transition programme and identify, where possible, areas for improvement in the training of the predator species and opportunities where the duration of any future transition programme can be reduced or the use of live feeding can be minimised to ensure continual improvement in the welfare management of both predator and prey

3.34 Where the Zoo Licence Holder proposes to import an animal into the UK and it is known that it is fed solely using live vertebrates, then this animal must not be imported until it has been transitioned to taking killed prey.

3.35 Prey species being maintained for live feeding must have their welfare needs met prior to being fed live to the designated predator in the same manner expected for the species as if it were a collection animal.

3.36 Prey species to be used as live feed must be assessed to ensure that they are an appropriate size and species for the intended predator and, as far as reasonably practicable, that there are no physical, disease or nutritional risks from feeding the prey species to the predator. This must take into account the prey species, prey's life-stage and the requirements of the live feeding programme.

Feeding by the public

3.37 Where controlled feeding of animals by members of the public occurs, the Licence Holder must have a procedure in place that covers this process. Uncontrolled feeding of animals by the public must be prohibited and this fact clearly conveyed to visitors.

3.38 Controlled feeding by members of the public must only occur on a selective basis with food suitable for the intended animal sold, provided, or approved by the Licence Holder. The quantity and type of food supplied must be managed and recorded to avoid over-feeding or unbalanced nutrition.

Section 4: The need to be able to exhibit normal behaviour patterns

General provisions

4.1 Animals must be allowed the opportunity to express appropriate natural behaviours, with the exception of those that are likely to impair the welfare of the individual animal or other animals either in the short or long term.

4.2 Enclosures must be equipped in accordance with the physical and psychological needs of the animal(s) and take into account natural history considerations for the species. For example, this includes appropriate substrates, vegetation, bedding material and, if species-appropriate, branch work, burrows, nesting boxes, pools, or other similar furniture. Enclosure designs and furnishings must be sufficient to aid and encourage a diversity of appropriate behaviours and prevent the development of abnormal behaviours.

4.3 Where an indoor enclosure is provided primarily with artificial light, with little or no access to natural lighting, the artificial lighting provided must have automated controls to ensure incremental increases and decreases during dawn and dusk phases of the day appropriate to the species' welfare needs. Consideration of seasonal changes in artificial lighting provision for a species must be demonstrable in the Environmental Management Plan for that species.

Additional notes

a) Automated controls can include dimmer systems or timers for separate banks of lights within the same enclosure
b) Nocturnal houses must have a documented standard operating procedure for the provision of reverse lighting cycles
c) Where automated lighting controls are determined not to be needed for a species' welfare needs the justification for this decision must be documented

4.4 Facilities must take into account the growth of the animal(s) (individually and as a group) and must be capable of satisfactorily providing for their psychological and physical needs at all life stages.

4.5 The mixing of conspecifics or species must be monitored at the point of mixing and also during daily husbandry rounds. Steps must be taken to minimise aggression when needed and such actions recorded (for example, placement of barriers, increasing resources in the enclosure, separation when needed).

4.6 An active programme of enrichment, appropriate to each species, must be documented and provided to all animals. Enrichment must be goal orientated and evaluated to determine its success to promote effective modification and refinement.

Additional notes

a) Enrichment is a dynamic process for enhancing animal environments within the context of the animal's behavioural biology and natural history. Environmental changes are made with the goal of increasing the animal's behavioural choices and drawing out their species-appropriate behaviours, thus enhancing animal welfare. In simple terms this can be separated into five different categories:
    (i) sensory (for example, olfactory to encourage the sense of smell)
    (ii) food-based (for example, feeding presentations that require time and/or energy to solve)
    (iii) structural (for example, alteration of climbing frames, ropes or perching)
    (iv) cognitive (for example, puzzle feeders)
    (v) social (for example, mixed species exhibits)

b) It is important to remember that whilst the design of an enclosure can be enriching (for example, it contains a variety of features that enhance the environment), even this will become repetitive without the provision of additional, ongoing, and varied enrichment

4.7 The Licence Holder must make provision, such as time and resources for staff to consider, develop, deliver and evaluate goal-orientated enrichment programmes as part of the routine day-to-day animal husbandry.

Section 5: The need to be housed with, or apart from, other animals

General provisions

5.1 The Licence Holder must make sure that animals are normally kept in social groupings consistent with their species, age, and reproductive status. The isolation of naturally gregarious or social animals must be managed in a manner that minimises the welfare cost for the animal and should only occur in the following circumstances:

a) to provide the individual animal with veterinary care
b) to protect the welfare of the individual animal or social group, for example, in cases of abnormal aggression
c) population management
d) awaiting arrival of a conspecific or transfer to another zoo and/or
e) to meet requirements on quarantine and disease management (for example, legislative)

5.2 The isolation of social animals must not occur except for the minimum time necessary, and the decision must be subject to an ethical review before it occurs. In an emergency situation, or under the direction of a veterinary surgeon, ethical review can occur retrospectively within 48 hours of the event.

5.3 Where social animals are isolated, the ethical review and steps required to resolve any associated welfare issues must be documented and include timelines for the resolution of the isolation of the animal(s). Where extended isolation occurs this must be ethically reviewed every four weeks to justify the ongoing isolation and assess any related welfare implications. This ethical review must be documented, updated and detail the plans to resolve any such protracted isolation.

5.4 Animals and enclosures must be managed to avoid animals within herds or groups being dominated by individuals, unless this is part of normal social hierarchy. Animals which may interact in an excessively stressful way with each other must not be maintained in close proximity, paying attention to the sensory capabilities of the species involved.

5.5 Mixed species enclosures must be constructed and designed to ensure that the welfare needs of the animals are provided for and that this takes into consideration the compatibility of both the species and the individual animals in the shared space(s).

5.6 In mixed species exhibits, care must be taken to make sure that the species held do not pose a disease risk to one another.

5.7 All newly introduced and immature animals must be given suitable and adequate opportunities to acclimatise to their new enclosure, social group, and surrounding environments.

Captive breeding

5.8 Captive breeding must only be undertaken where the Licence Holder has determined that there is suitable and sufficient capacity to care for the resultant offspring for the whole of their life or has identified potential suitable homes for the offspring that meet the Standards.

5.9 If hand-rearing or nursing of animals is deemed necessary and appropriate, there must be suitable facilities available for the species concerned and staff must be appropriately trained and experienced.

5.10 Pregnant animals and animals with young must be provided with suitable enclosures, designed to minimise stress for the animals, provide the opportunity for seclusion, where required, and facilitate parent-offspring bonding. Appropriate areas, materials and substrates must be provided for animals to safely incubate, give birth to, and raise their young.

5.11 Parent-reared offspring must remain with their dam (and/or sire where applicable) until nutritional and behavioural independence, for a period similar to that which occurs in the wild. Offspring may be removed earlier for hand-rearing in special circumstances. For example:

a) for the protection of the mother or the offspring
b) temporary separation may be permitted for routine health checks, supplemental feeding, and veterinary care and/or
c) the offspring is required for training, conservation or biosecurity purposes that promote the welfare of the individual or the conservation needs of the species

Additional notes

a) Where a bird or mammal is taken prior to independence (for any reason) the method of removal and hand rearing must be undertaken in a manner that attempts to maximise normal behaviours and psychological development and is not anticipated to compromise the animal's inclusion in natural breeding programmes, especially for those animals removed for training and demonstration purposes.
b) Where a bird or mammal is permanently taken prior to independence (for any reason) a documented ethical review must be undertaken. This must include the following:
    i. demonstrate that the welfare needs of the parent(s) and offspring are assured throughout the process
    ii. that it does not compromise the life-long care of the animal
    iii. consideration that the rationale has a net positive welfare and/or conservation impact for the individual animal or species

5.12 Steps must be taken to prevent the interspecific breeding of animals of different species or subspecies (hybrids) unless this practice is part of a recognised managed conservation breeding programme (for example, European Association of Zoos and Aquaria Ex situ Programme) and will not compromise animal health or welfare.

5.13 Where a hybrid animal is transferred to another collection, the recipient collection must be informed that the animal is a hybrid. Due diligence must be taken to make sure that the receiving collection has measures in place to prevent the hybrid animal breeding with other animals, unless they are part of a recognised managed conservation breeding programme (for example, European Association of Zoos and Aquaria Ex situ Programme).

5.14 The breeding of closely genetically related individuals of similar species (inbreeding) must be avoided unless this practice is a recommendation from a relevant and organised managed conservation breeding programme, or it is a normal breeding strategy for that species. Inbreeding must not compromise animal health or welfare.

5.15 The Licence Holder must document and implement an animal collection plan that includes the prevention of overpopulation. This must be reviewed at least annually. The strategy must be subject to ethical review and consideration must be given to relevant animal welfare legislation.

Section 6: The need to be protected from physical and psychological pain, suffering, injury, and disease

Preface

It is the legal responsibility of the Licence Holder to make sure that the necessary arrangements for veterinary cover are made, that the required standards are met, and that appropriate documentation is maintained and available on-site.

Routine observation

6.1 Animals must only be handled and managed by, or under the supervision of, appropriately trained and experienced staff. Handling must be done with care to protect the animals' welfare, and to avoid unnecessary discomfort, stress, or physical harm.

6.2 The condition, apparent health and behaviour of all animals must be checked at least twice daily by the person in direct charge of their care, consistent with avoiding unnecessary stress or disturbance. Where animals are not checked at least twice daily, this decision must be justified, and alternative assessment regimes documented.

Additional notes

a) Daily checks may not be appropriate if checking an animal would negatively affect its welfare, such as in the case of burrowing species or nursing animals. In such cases remote monitoring such as CCTV or camera traps must be considered

b) In the exceptional case of complex habitats (for example, multi-species biomes) where, due to the potential nature of the species held within the biome and the habitat created, it may not be possible to assess individual animals twice daily. Under such circumstances, the Licence Holder must have written documentation that demonstrates that all the separate species housed within the biome have an active and documented surveillance programme in place. This must demonstrate that all their husbandry and welfare needs are being met at all times

6.3 Any animals that give cause for concern must be thoroughly assessed by a competent person as to whether they are distressed, sick, or injured. If required, veterinary advice must be sought immediately.

6.4 Where abnormal behaviours, (for example, stereotypical behaviour, restricted behavioural repertoire, self-injurious behaviour) or evidence of abnormal behaviours are witnessed, they must be recorded. The record must indicate suspected causes of the behaviour and the subsequent steps taken to retard/deter its development. Where abnormal behaviours are established, steps must be taken to identify and reduce the triggers for such behaviours.

Additional notes

a) Abnormal behaviours can often be a coping mechanism and therefore restriction of some of those behaviours may not necessarily be appropriate (for example, stopping an animal from pacing by not allowing access to certain routes)
b) Instead, the trigger for the behaviour must be addressed and steps taken to mitigate the factors driving the behaviour, though it may not be possible to resolve established abnormal behaviours
c) Methods of recording can include the daily diary, the animal's record, dedicated welfare assessment monitoring documentation, or similar

6.5 The persons in direct charge of the animals must keep daily written records, indicating changes to the prescribed diet, health checks carried out, any unusual behaviour or activity, or lack of normal behaviours or activity, any other problems, and details of remedial actions taken.

Veterinary care

6.6 The Licence Holder must ensure that there is adequate veterinary cover.

6.7 The Licence Holder must ensure that the veterinary cover to care for the veterinary needs of all the species held in the zoo are met.

Additional notes

a) To ensure compliance the Licence Holder must employ staff with a formal veterinary qualification, as recognised by the Royal College of Veterinary Surgeons (RCVS), together with an active RCVS continuing professional development record
b) Veterinary care may be provided by a clinical veterinary practice(s), a resident veterinary surgeon(s), or a zoo veterinary consultant(s), or a combination of the above. For the purposes of these Standards, the Licence Holder must appoint one of these as the Lead Veterinary Service (LVS)

6.8 The Licence Holder must ensure that the employed veterinary surgeon(s) have expertise in preventive and curative veterinary care for all the species in the collection or have processes in place to obtain specialised knowledge and/or skills and/or technical support when required.

Additional note

a) Expertise in preventive and curative veterinary care includes a veterinarian with a specialist diploma in a field relevant to the zoo, relevant continuous professional development in the care of the relevant species found within the zoo, and/or demonstrable experience in the care of the relevant species found in the zoo

6.9 Where a zoo employs the services of more than one veterinary practice, and does not employ a resident veterinary service, the Licence Holder must ensure that:

a) one veterinary practice must be designated as the Lead Veterinary Service (LVS)
b) the LVS must have oversight and responsibility for the delivery of the whole health care programme, but is not required to be responsible for directly delivering routine elements of the service
c) the LVS must have a documented process of communication between all of the practices, and the roles of each individual veterinary practice must be clearly defined, agreed and documented
d) the provision of prompt emergency veterinary care in the event of an emergency must be clearly defined and agreed upon between the practices. This process must be documented

6.10 The LVS must have oversight for the veterinary care for all of the animals in the collection and take responsibility for the development and implementation of the Programme of Preventive and Curative Veterinary Care.

6.11 The Licence Holder must make sure that where multiple veterinary practices and/or external specialist veterinary consultants are used, the LVS retains oversight and suitable records are kept on-site at the zoo premises regarding any treatment and diagnosis of animals in the collection.

Additional note

a) Zoos often employ the services of more than one veterinary practice in order to best meet the needs of the species they hold. For example, they may be registered with a farm or equine practice who are best placed to deal with domestic livestock, in addition to engaging the services of a veterinary surgeon who is familiar with current practice in the care of zoo animals, particularly those held at the collection. Clinical cases may be managed by any of the veterinary practices and this case management will be the responsibility of each individual veterinary surgeon. However, it is the responsibility of the Licence Holder to ensure that all required documentation and clinical notes, originals or duplicates, are held on-site.

6.12 The Licence Holder must have a written Programme of Preventive and Curative Veterinary Care, that is approved by the LVS. This must include, where applicable:

a) details of the LVS and any additional veterinary service providers, including call out procedures and points of contact for individual taxa (where required)
b) overview of the frequency of routine veterinary visits
c) a routine health surveillance programme including vaccination, parasite and microbiology screening, including anthelmintic selection and parasite management options
d) quarantine, isolation and import policies and procedures for each taxonomic group including species-specific recommendations
e) post-mortem examination (PME) procedures and rationale when it is not carried out
f) a process of documented review of clinicopathological records

g) nutritional and dietary review processes
h) pharmaceutical dispensing, storage and management policies
i) animal health care records policy and shared communication methods with the Licence Holder and other veterinary service providers where more than one veterinary practice provides the clinical service
j) a documented zoonosis policy that includes a review of zoonotic pathogens considered a risk in the collection, surveillance programmes in place to monitor for such pathogens, risk assessments specific to zoonosis management and the mitigation strategies deployed to reduce risk to staff and visitors, including hand washing and sanitation strategies

6.13 The Licence Holder must ensure that the LVS has oversight of, but is not required to be responsible for (unless they have been recruited as the veterinary care provider for that particular activity), the following routine activities:

a) routine inspections of the collection
b) treatment for all sick animals
c) vaccination policy, parasite control, disease surveillance, contraception, and other aspects of preventive medicine
d) health monitoring of animals, including submission of blood and other samples for laboratory examination, as appropriate
e) safe collection, preparation, and dispatch of diagnostic samples
f) post-mortem examinations of all animals, where appropriate, to make sure that sufficient evidence is gathered to diagnose the cause of mortality and to identify any significant or notifiable diseases
g) maintaining clinical and pathological records for all animals within the collection
h) establishment of pharmaceutical storage and use protocols, including procedures to be followed in the event of unintended accidents involving dangerous drugs
i) liaising with external specialist veterinary consultants where required
j) ensuring adequate procedures for the quarantine of animals and supervision of quarantine premises
k) establishing and advising on permitted methods of euthanasia or humane destruction

6.14 The Licence Holder, must ensure that the LVS is consulted with regard to:

a) training of zoo staff in zoonotic disease
b) management of biosecurity, both generic and as part of disease control situations
c) quality of life assessments/end-of-life or geriatric care plans

6.15 The Licence Holder must ensure that the LVS is aware of, and is provided with the opportunity to input into the following:

a) enclosure and exhibit design
b) establishment of procedures for the import and export of animals related to animal health and welfare
c) the assessment and treatment of abnormal behaviours

d) animal nutrition and diet plans

6.16 The Licence Holder must ensure that routine veterinary visits are carried out by a veterinary surgeon to assess the health, condition and welfare of the animals at a minimum visit frequency as indicated in Table 6.1. Records must be retained demonstrating that the veterinary visits have occurred and the findings at those visits, including advice given with regard to the health management of the collection.

Table 6.1 Minimum frequency of veterinary visits proportionate to zoo size

Size of zoo	Minimum frequency of regular routine veterinary visits
Large zoos	weekly
Medium sized zoos	fortnightly
Large bird parks	monthly
Large aquaria	2 monthly
All other small zoos holding vertebrates	3 monthly
Zoos without vertebrate animals**, for example** butterfly houses	6 monthly

Additional notes

a) The frequency of routine visits must be appropriate to the size and type of the collection. Over and above emergency calls, there must be sufficiently frequent regular advisory visits to assess general health and preventive veterinary practices
b) Definitions of the different type of zoos can be difficult to arrive at, and it is at the inspector's discretion to decide into which category any particular zoo should fall

Veterinary facilities

6.17 Facilities for routine and emergency examination and treatment of animals must be available on the zoo premises, unless written confirmation has been provided by a Secretary of State appointed zoo inspector(s) stating they are satisfied that such a facility is not necessary due to the nature of the collection (for example, where facilities at a veterinary practice are available within a reasonable distance from the zoo).

6.18 Where a dedicated on-site facility for routine and emergency examinations of animals is present, the room(s) must be maintained in a clean condition and must have:

a) washable floor and wall surfaces
b) adequate drainage
c) examination table
d) hot and cold running water
e) heating

f) ventilation
g) lighting
h) power

6.19 Sufficient and appropriate accommodation must be available on the zoo premises for:

a) the quarantine or isolation of animals
b) the care of unduly distressed, sick, or injured animals

6.20 Written procedures must be produced and implemented to prevent the potential spread of disease or infection to, from or amongst isolated or quarantined animals.

6.21 In quarantine and/or isolation areas staff must use appropriate personal protective equipment (PPE) and utensils proportionate to the potential level of risk. Such PPE, clothing and utensils must be clearly marked, and only used, cleaned, and stored in that area.

Veterinary records

6.22 Comprehensive animal health care records must be kept on-site at the zoo during the animal's life and for at least 6 years after its death or departure. These records must contain full and up-to-date records on all aspects of animal health and welfare, including evidence of the provision of the veterinary surgeon's services. These records, whether for a group or individual must, at minimum, cover the following elements:

a) identification (including name, species, records number, microchip, as appropriate)
b) clinical medicine and surgery of individuals or groups as appropriate
c) preventive medicine programmes, for example, vaccination, worming, and population management
d) pathological findings from ante-mortem testing, where carried out
e) results of post-mortem examination and testing, where carried out
f) mortalities, to include number and causes thereof
g) laboratory testing and other diagnostic reports
h) veterinary intervention regarding behavioural or welfare issues identified, and remedial actions recommended
i) contributions of the veterinary surgeon to ethical decision-making

6.23 The Licence Holder must ensure that following veterinary visits, whether carried out by either external (visit) or resident veterinary surgeons (rounds), a written record is produced containing the details of the veterinary reviews and any treatment or advice provided. The details of any such reports must be updated in the individual animal records.

Additional note

a) The written record can include the veterinary surgeon directly entering the details from the veterinary visit/rounds into the animal's record, especially where dedicated animal record-keeping systems are utilised

6.24 There must be a documented review by relevant veterinary and curatorial staff (or staff of relevant expertise) of clinical, behavioural, pathology and mortality records. This must be undertaken at least annually. Where problems have been identified the Licence Holder must be able to demonstrate that husbandry and preventive medicine practices have been reviewed, and the remedial steps actioned.

Veterinary medicines

6.25 Medicinal products must only be administered under the direction of a veterinary surgeon. The LVS must be kept informed of any medication prescribed or administered by other veterinary surgeons involved in providing care. Authorisation must be given by a veterinary surgeon for each occasion or course of treatment, along with written instructions (including potential hazards).

6.26 The Licence Holder must ensure that the zoo or a local hospital or their veterinary surgeon has readily available antidotes to potentially toxic veterinary products used at the zoo. These antidotes must be available for use by authorised personnel only.

6.27 All medicinal products, vaccines and other veterinary preparations prescribed for animal use must be sourced, stored, used and discarded in accordance with manufacturer's instructions and current legislation, for example, kept in locked facilities, with restricted, named key access.

Additional notes

a) Regular inspection of drugs, vaccines and other veterinary products must be undertaken by a veterinary surgeon to ensure out-of-date products and those that have exceeded broach dates must be removed
b) Full records of drug stock, usage, storage conditions, and disposal must be kept

6.28 All unwanted or contaminated veterinary waste, including drugs, must be disposed of in line with current legislation. The Licence Holder must be satisfied that any removal service used, including by a veterinary surgeon, is appropriately registered.

Euthanasia

6.29 The Licence Holder must have a written protocol for carrying out the humane and timely euthanasia of animals. The primary objective must be to minimise suffering. The protocol must include the following:

a) information and guidance from the Lead Veterinary Service on humane, safe, and legally compliant euthanasia methods for keepers and staff to comply with

b) the facilities and equipment required to carry out humane euthanasia methods for all animals in the collection

6.30 A designated senior member of staff must be readily available at all times. This member of staff must have the authority to be able to make appropriate decisions regarding the euthanasia of sick or injured animals.

Additional note

a) 'Available at all times' includes on-site or on-call within a reasonable distance when required to attend

6.31 There must be timely and effective, humane methods of euthanasia available on site, suitable for all species in the collection. Euthanasia must only be carried out by trained, competent individuals using legally compliant methods.

Additional notes

a) The humane killing of an animal is considered justifiable under certain conditions, following ethical review or veterinary direction. Records must be maintained to demonstrate the justification for any euthanasia or humane destruction decision undertaken by the zoo
b) Where controlled drugs are utilised this must be under veterinary direction

6.32 Where emergency euthanasia is carried out without the advice of a veterinary surgeon, the Licence Holder must communicate the action to the LVS within 48 hours and justify as to why emergency euthanasia was carried out. This justification must be recorded in the individual animal's record.

Post-mortem examination

6.33 Where possible, animals within the zoological collection that die must be examined by a veterinary surgeon to determine the cause of death and to identify any other underlying comorbidities which may inform husbandry practices. Where post-mortem examination is not carried out this must be justified by the collection's LVS and the Licence Holder, with the rationale documented in the animal's records.

Additional notes

a) In the case of animals which rapidly degenerate after death (for example, fish), and where rapid sample collection is critical, it is acceptable for post-mortem examinations to be carried out on site by non-veterinary staff. In these instances, diagnosis as to the cause of death can only be made by a veterinary surgeon following a subsequent review of the information provided. In such instances, staff must have undergone basic training in post-mortem examination techniques and sample handling, and the Licence Holder must be able to demonstrate such training has occurred

b) All findings of post-mortem examination, and any other related further laboratory testing, must be recorded in the animal's record

6.34 Facilities appropriate for the post-mortem examination of all species held in the collection must be available either on the zoo premises or within a reasonable distance from the zoo, or the collection must utilise a dedicated specialist laboratory for this service.

6.35 Dead animals must be handled in a way that minimises the risk of potential transmission of infection.

6.36 Cadavers awaiting post-mortem, disposal or related samples from post-mortems must be clearly labelled; stored separately away from living animals, food and feed preparation areas; and in conditions advised by the veterinary surgeon.

6.37 A dedicated, annual document summarising the cause of death of all animals in the collection must be kept at the zoo. This record must include details of the animal, post-mortem examination results or justification where post-mortem was not carried out, and the final diagnosis made. This document must form part of the written mortality review as per Standard 6.24.

Sanitation and control of disease

6.38 A good standard of hygiene must be maintained in enclosures and surrounding areas to reduce the risk of spread of disease amongst animals.

6.39 There must be a documented and implemented procedure for the routine cleaning of animal enclosures, isolation or quarantine areas and surrounding environments. This procedure must include veterinary or specialist advice where required.

6.40 The drainage of all enclosures must be capable of efficiently removing excess water.

6.41 Enclosures must be protected from wastewater and excessive runoff from land and buildings. If such water, either as an ongoing situation or as an exceptional major run-off event, runs into animal-accessed pools where water quality is critical for the animals within or there are potential disease or contamination risk concerns noted, then the Licence Holder must ensure an assessment, with actions taken where required, is carried out to ensure any risks to the animals' welfare are minimised.

6.42 All excreta and soiled bedding must be stored and disposed of in a hygienic manner.

6.43 Wastewater that may pose a known disease risk to the environment, or to native fauna, must either undergo suitable treatment or be stored and subsequently disposed of appropriately.

6.44 Cleaning and disinfecting must be undertaken in a way, and at a frequency, that does not cause distress, suffering, or unnecessary discomfort for the animals. It must take into consideration their natural behaviours, such as scent marking. This

must include consideration of the cleaning products used, and the methods utilised to apply them.

6.45 Cleaning and disinfection products must be used, stored, and disposed of in accordance with the manufacturer's instructions.

6.46 Distance and barriers between animals and between enclosures and the public must be designed to minimise the transmission of disease or potential pathogens. Where direct contact is possible suitable mitigation must be in place to minimise disease transmission, for example hand wash facilities.

6.47 Any open drains, other than those carrying surface water, must be outside of enclosures and protected from access by the public.

6.48 Steps must be taken to actively reduce and, where possible, prevent the intrusion of pests and vermin into the zoo premises. A safe, effective and humane procedure for the control and deterrence of pests, vermin and predators must be established, maintained, monitored, and recorded throughout the zoo premises.

Additional notes

a) Where prey species, such as non-domesticated birds and small mammals, are given free access to outside enclosures, especially overnight, the Licence Holder must make sure that predator-proof fencing (or alternatives, to exclude predatory birds) is in place to deter or prevent access by predators
b) Predator-proof fencing can be considered either at a zoo perimeter or enclosure level

6.49 Clinical waste and refuse produced by the zoo must be regularly removed and disposed of in a manner approved by the Licensing Authority.

Wildlife Rehabilitation

6.50 Where a zoo undertakes wildlife rehabilitation the veterinary health care programme must include a written policy that demonstrates how biosecurity and segregation is maintained between the permanent collection animals and the rehabilitation animals to mitigate disease spread into and out of the collection.

Section 7: Animal acquisition, transport, movement, and dispositions

Preface

In addition to the standards laid out in this section for the purposes of the Act, there are a number of other pieces of legislation that are relevant to animal acquisition, transport, movement and dispositions.

Transport

The movement of zoo animals is governed by assimilated Council Regulation (EC) No 1/2005 on the protection of animals during transport and related operations.

This legislation applies to anyone transporting live vertebrate animals in connection with an economic activity, for instance, a business or trade. The transport of zoo animals, including zoos undertaking conservation, is deemed to be in connection with an economic activity.

Under this legislation, the Licence Holder may be considered the ‘organiser’ for any animal journeys undertaken. Where the Licence Holder, or zoo staff acting on their behalf, are responsible for transporting animals, they may be considered the ‘transporter’.

This legislation does not apply to the transport of invertebrate animals. Invertebrates are animals such as insects, worms, crustaceans (for example, crabs and lobsters), cephalopods (for example, octopus and squid) and molluscs (for example, shellfish and snails).

Regulation 1/2005 is administered and enforced by the following:

- Welfare of Animals (Transport) (England) Order 2006 (WATEO) in England
- Welfare of Animals (Transport) (Scotland) Regulations 2006 (as amended) in Scotland
- Welfare of Animals (Transport) (Wales) Order 2007 (as amended) in Wales

For England and Wales only: invertebrate animals, and animals involved in non-commercial movements, must not be transported in a way which either causes, or is likely to cause that animal injury or unnecessary suffering. This is to avoid committing an offence under Article 4 of WATEO and the 2007 Wales Order. With the recognition of cephalopods and decapods as sentient animals, care should be taken to ensure that these two groups of invertebrates are transported appropriately with regards to their safety and welfare.

Transport of animals by air must also comply with the International Air Transport Association (IATA) Live Animals Regulations (LAR).

Acquisition and relinquishment

Zoos must comply with the requirements of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which governs the import, export, sale, and other commercial use, including display, of species listed in its Appendices and/or Annexes as applicable.

For movements of Species of Special Concern (alternatively referred to as invasive non-native species or invasive alien species) zoos must comply with the Invasive Alien Species (Enforcement and Permitting) Order 2019 and the restrictions placed on the transportation of listed species. Where Species of Special Concern are found or proposed to be rescued/rehomed then a suitable permit from APHA must be held prior to any move taking place.

To sell animals as pets, zoos must also hold pet selling licences under the following legislation, the:

- Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018 in England
- Animal Welfare (Licensing of Activities Involving Animals) (Scotland) Regulations 2021 in Scotland
- Animal Welfare (Licensing of Activities Involving Animals) (Wales) Regulations 2021 in Wales

In addition to the legislative requirements, zoos must comply with the standards relating to the acquisition, movement, and relinquishment of animals below. The Licence Holder is ultimately responsible for ensuring these standards are met.

General provisions

7.1 Due diligence must be conducted, and every reasonable precaution taken, prior to any transfer of an animal to or from the collection, to make sure that this transfer will not contribute to:

a) the misrepresentation of wild-sourced animals as captive bred
b) the illegal sourcing of animals, whether wild or captive
c) the removal of animals from the wild illegally, unsustainably, or without proper consideration or reason
d) the keeping of any animals in sub-standard welfare conditions and/or
e) the movement of animals without compliance with relevant legal requirements

The evidence of this due diligence and the precautions taken must be documented.

7.2 No animal must be removed from the wild unless part of a recognised and required conservation measure in accordance with the Zoo Licensing Act (1981) or as part of a wildlife rehabilitation programme where an animal is intended to be returned to the wild once fit (or euthanased, where indicated).

Additional notes

a) As defined by these Standards a ‘conservation measure’ includes all of the Section 1A Conservation Measures as listed within the Zoo Licensing Act (1981) as amended. This includes, but is not limited to, the Section 1A(a) requirements as outlined in Section 10: Conservation and Research
b) Where a zoo imports animals originating from wild sources, either directly, or through a supplier or a conservation partner, the Licence Holder must undertake a harm-benefit analysis and ethical review as outlined in Standard 7.19

Transport of live animals

7.3 Due diligence must be taken to make sure that the personnel transporting the animals are trained or competent as appropriate for this purpose and carry out their tasks without using violence or any method likely to cause unnecessary fear, injury, or suffering.

7.4 An animal must be fit for transport prior to each journey taking place unless that animal is being transported under veterinary supervision for, or following, veterinary treatment, or diagnosis. However, such transport shall be permitted only where no unnecessary suffering or ill-treatment is caused to the animal(s) concerned.

7.5 Catching and transportation techniques must take account of the animal’s temperament and escape behaviour in order to minimise injury, damage, and distress, and, where required, legislative requirements of transporting animals under quarantine conditions. Where possible, training plans must be considered as an alternative to mitigate the use, risks and stress associated with manual capture and restraint.

7.6 The transport of animals must be carried out without delay to the place of destination. Arrangements must be made to minimise journey lengths and meet the animals’ welfare needs during the journey.

7.7 Zoos must be able to access suitable facilities for lifting, crating, and transporting all the types of animals in the zoo collection, to destinations both inside and outside the zoo premises.

7.8 Facilities for lifting, crating, and transporting any animals (including equipment for loading and unloading) must be designed, constructed, maintained, and operated to:

a) protect the animals from harm (specifically have no sharp edges or projections which might cause injury) and meet the needs of the animals
b) protect the animals from inclement weather, extreme temperatures, and adverse changes in climatic conditions
c) prevent the animals from escaping or falling out - they must be strong enough to withstand the stresses of movements of the animals
d) provide a sufficient floor area and height for the animals, appropriate to their size and the intended journey. There must be enough space to

enable the animals to travel in a natural position, to be able to stand, lie down, hang or perch, as required, without risk of injury

e) have flooring that is anti-slip, and that minimises the leakage of urine or faeces
f) ensure that the air quality and circulation can be maintained for the duration of the journey
g) where an animal's welfare is dependent on a controlled environment, this must be provided and meet the needs of the animal
h) provide access to the animals to allow them to be inspected and cared for as necessary
i) conform with International Air Transport Association Live Animal Regulations (for transport by air)

7.9 Where facilities for lifting, crating and transporting animals come into direct contact with animals or their excreta they must be cleaned and disinfected between uses.

7.10 Goods which are being transported in the same means of transport as animals, such as food and equipment, must be positioned so that they do not cause injury, suffering, distress, or disturbance for the animals. Where items intended for consumption are being transported, these must be protected from contamination.

7.11 Containers holding animals must be secured to prevent displacement during transport and minimise jolting or shaking.

7.12 Where animals are being transported to a veterinary surgeon for treatment for a suspected infectious disease, there must be barriers between transport containers to reduce the transmission of disease, and the vehicle and equipment must be appropriately cleaned and disinfected following transportation.

7.13 Animals must be checked for signs of injury, illness, distress, or fear immediately before, during (when appropriate) and after transport. An animal which has fallen ill or become injured during transport must receive prompt first aid or veterinary treatment.

7.14 Animals must not be sedated for the purposes of transport unless it is strictly necessary to ensure the welfare of the animals and, if used, only under veterinary supervision.

7.15 Predator and prey species must not be transported together unless there is suitable visual, aural and/or olfactory separation between the species, appropriate to the species' biology.

7.16 Animals must never be left unattended in a vehicle during the journey, unless in a secure area, for example, during a ferry crossing.

7.17 Animals must be provided with bedding, or equivalent material, appropriate to the species and the journey time. This material must make sure that the absorption of urine and faeces is adequate. Crates and transport containers must be designed to

remove or absorb urine and faeces to ensure the comfort of the animal during transport.

7.18 Where animals in containers are placed on top of one another, the following necessary precautions must be taken to:

a) avoid urine and faeces falling on the animals placed underneath
b) make sure that containers are stable
c) make sure that ventilation is not impeded

Acquisition of animals

7.19 The Licence Holder must not acquire animals from the wild unless there is a justifiable reason for doing so. The decision to acquire animals from the wild must be subject to and preceded by a harm-benefit analysis and ethical review, which must confirm that the acquisition is needed to comply with the conservation measures under the Act and is in line with the zoo's conservation policy. If removal of animals from the wild takes place, the Licence Holder must be able to demonstrate:

a) the legality of the acquisition
b) the justification for doing so, for example, where ex situ management has been identified as a recognised conservation benefit (including education and research) for that species
c) the collection method, which must minimise stress and welfare compromises for the animal captured or the animals in the surrounding area and must not negatively impact the ecology of the local environment or the wild population of the target species or other species
d) any long-term mitigation options to transition away from wild sourcing of animals and/or minimise the impact on wild populations where concerns are noted during the harm-benefit analysis and ethical review

Any ongoing wild sourcing imports must undergo annual ethical review and reassessment to ensure that the conservation and welfare requirements of the animals are being met.

7.20 Prior to receiving animals from any source, on either a temporary or permanent basis, the Licence Holder must make sure that they can provide a suitable environment and appropriate levels of husbandry to ensure that the animal's welfare needs will be met.

Disposition of animals from the zoo collection

7.21 Due diligence must be taken to make sure that the accommodation the animal is being moved to, and the animals it is to be mixed with, does not compromise the welfare of that individual or of the other animals.

7.22 Where animals are relinquished from the collection, due diligence must be taken to make sure that the receiving party has the appropriate licences, personnel, facilities, resources, and expertise to meet the animals' welfare needs.

Animals intended for release into the wild

7.23 Where native wildlife species are rescued or temporarily housed prior to release, there must be a clear segregation between permanently housed animals and rehabilitating wildlife.

7.24 There must be effective biosecurity processes in place between permanently housed animals and rehabilitating wildlife to mitigate the potential spread of disease into and out of the collection.

7.25 Animals destined for rehabilitation and release must not be on display to the public unless it can be clearly demonstrated that being on display does not cause stress for the animal and does not compromise its eventual release. If restricted display is justified, options could include (but are not limited to) viewing animals by video camera, one-way screens, or spyholes.

7.26 A programme for the management of animals intended for release into the wild, either from rehabilitation or conservation activities, must be documented and implemented. The programme must be able to demonstrate the inclusion of the relevant recommendations and requirements of the IUCN Guidelines for Reintroductions and other Conservation Translocations and must ensure that:

a) animals are kept and maintained as per the Standards prior to release
b) the animal's state of health and its behaviour make it a suitable candidate for release
c) the animal has gone through an appropriate pre-release programme
d) appropriate measures have been taken to mitigate the risks to public health, animal health or the environment, for example, a Disease Risk Assessment and/or an Environmental Impact Assessment
e) appropriate measures have been taken, where possible, to promote the animal's welfare post-release
f) a programme of post-release monitoring is implemented to ascertain the success of the programme
g) appropriate measures have been taken to guarantee the legality of the release and appropriate permissions acquired from the relevant authorities and landowners for any release of animals into the wild, either domestically or internationally

Species of special concern (invasive alien species)

7.27 All vertebrate Species of Special Concern must be permanently identified, for example with the use of implanted microchips. Photographic identification records are not considered suitable.

7.28 Species of Special Concern (invasive non-native species) held under a permit must have an additional permit for transport agreed in advance from APHA, and the receiving facility must have a permit in place to receive and keep the animal.

Section 8: Public safety and escapes

Preface

Zoos have a responsibility to make sure that the public is safe and that suitable arrangements are put in place to manage health and safety.

Section 5(7) of the Zoo Licensing Act 1981 states, 'The authority shall not attach to a licence a condition which relates only or primarily to the health, safety or welfare of persons working in the zoo.' These are dealt with under separate legislation.

Key pieces of legislation relevant to this section include (but are not limited to), the:

- Health and Safety at Work etc. Act 1974
- Management of Health and Safety at Work Regulations 1999
- Health and Safety (First-Aid) Regulations 1981 (as amended)
- Firearms Act 1968 (as amended)
- Firearms (Amendment) Rules 2017
- Wildlife and Countryside Act 1981

BIAZA's (the British and Irish Association of Zoos and Aquariums) Health and Safety Guidelines for Zoos and Aquariums (2020) is a useful resource which has replaced the Health and Safety Executive's 2007 guidance HSG 219 - Managing Health and Safety in Zoos.

Escapes

Zoos must prevent the escapes of animals and must put in place contingency measures to be taken in the event of escapes. This section deals primarily with preventing, reporting, recording, and managing escapes of animals.

Species of special concern (invasive non-native species)

While the escape of nearly all non-native animals is illegal, there are also strict rules around the keeping of certain listed Species of special concern (invasive non-native species). The Wildlife and Countryside Act 1981 makes it an offence to release or allow the escape of most non-native animals (see guidance notes on Section 14 of the Wildlife and Countryside Act 1981). In addition, zoos must obtain permits from the Animal & Plant Health Agency (APHA) to keep species of special concern listed under the Invasive Alien Species (Enforcement and Permitting) Order 2019, which restricts the breeding from, sale or exchange of listed species.

General provisions

8.1 The Licence Holder must ensure that all members of staff are instructed in their obligations under current legislation regarding health and safety.

8.2 The Licence Holder must make sure that all animal staff are instructed in their obligations with regard to wildlife and zoo operational-related legislation, including (but not limited to) Invasive Alien Species (Enforcement and Permitting) Order 2019, and the Zoo Licensing Act (1981).

8.3 The Licence Holder must be able to provide a map that clearly delineates all areas regulated by the Zoo Licensing Act, to be referred to as the 'zoo boundary', as well as the area(s) holding animals, which are enclosed by the 'zoo perimeter'. The map must include the following:

a) 'Zoo boundary', this encompasses the zoo's licensed premises, the total area for which planning permission has been obtained for the purposes of the zoo's operation, and is regulated by the Zoo Licensing Act (1981)
b) 'Zoo perimeter', if different. This is the boundary that surrounds the animal area(s) and is designed to discourage unauthorised entry and, so far as reasonably practicable, act as an aid to the confinement of the animals within the zoo. This may be the same as, or different (smaller), to the zoo boundary
c) 'Zoo premises', if different. This is a generic term including the entire licensed site, this includes everything within the zoo boundary. It may consist of more than one site

8.4 The zoo perimeter, including access points, must be designed, constructed, and maintained to deter unauthorised entry by members of the public and, so far as reasonably practicable, act as an aid to the confinement of the animals found within the zoo.

Additional notes

a) The zoo perimeter may be a fence, hedge, wall, gate or building
b) Hedges are not permitted as the zoo perimeter where Species of special concern; Category 1A, and/or Category 1 and/or Category 2 hazardous mammals; and/or any free-ranging wild animals, are maintained within the collection
c) Where a zoo perimeter fence is required, this must be a minimum of 1.8 metres high

8.5 There must be systems in place to minimise the risks of theft, malicious damage, or release of animals from the zoo collection.

Preventing escapes

8.6 Steps must be taken to prevent the escape or unauthorised release of animals.

Additional notes

a) An ‘escape’ is defined as the unintended release of an animal, either wild or domesticated, outside of the animal’s normal enclosure or environment
b) A ‘reportable escape’ is defined as the unintended release of an animal from a zoological collection outside of the ‘zoo’s perimeter’ and, in the case of a Category 1A or Category 1 Hazardous Animal(s) as listed in Appendix B and/or Species of Special Concern (invasive non-native species), outside of the animal’s normal enclosure or environment but still contained within the confines of the zoo’s perimeter fence
c) A ‘near-miss’ is defined as the authorised (for example, the unintended temporary loss of a free-flying demonstration bird) or unauthorised (for example, malicious or accidental) release of an animal outside of the animal’s normal enclosure or environment but still contained within the confines of the zoo’s perimeter
d) In the case of outreach or similar events where animals are taken outside the zoo’s perimeter by trained and authorised persons, any escape from the designated outreach location is considered a ‘reportable escape’

8.7 All animals in the collection, including free-ranging species, must be kept and contained in secure enclosures which are designed, constructed, and maintained to prevent escape, other than when the animals are under the control of a trained and experienced member of staff authorised by the Licence Holder.

Additional notes

a) ‘Free-ranging’ species in the collection are those that the Licence Holder chooses to maintain outside of enclosures but within the zoo perimeter as they are not considered to pose a risk to public safety. The enclosure, with regard to this standard, is considered to be the zoo perimeter fence or a controlled area within the perimeter to which the ‘free-ranging’ animals have access
b) Category 1A list hazardous animals must never be free-ranging
c) Category 1 and 2 listed hazardous animals must not be ‘free ranging’ unless with prior written agreement from the Licensing Authority
d) Species of special concern (as listed in the Invasive Alien Species (Enforcement and Permitting) Order 2019) must not be ‘free-ranging’

8.8 All animal enclosures must be checked daily by members of staff to make sure that they are secure. If structural deficiencies are identified, repairs must be carried out as soon as possible. The deficiencies and actions taken must be recorded.

8.9 The zoo perimeter must be checked at least quarterly by members of staff to make sure that it is secure. If structural deficiencies are identified, repairs must be carried out as soon as possible. The deficiencies and actions taken must be recorded. Where the zoo perimeter fence is also the primary enclosure boundary (for example, ‘free-ranging’ animals) the frequency of checks must be daily.

Additional note

a) Where Category 1A hazardous animals are present within the collection, the frequency of perimeter fence checks may be increased to a frequency as agreed with the Licensing Authority proportionate to the specific species held on site

8.10 The structural integrity of enclosures containing Category 1A listed animals must be checked annually by an individual competent to make a structural engineering assessment. This assessment must ensure the structural integrity is suitable for the species contained, and these must be recorded.

Additional note

a) Examples of competent assessors include experienced members of the zoo's maintenance team, builders, surveyors, and engineers

8.11 Enclosure fencing, barriers, gates, windows and doors must be made of a material which is suitable to securely contain the type of animal enclosed within.

Additional notes

a) Gates, windows and doors must be designed and maintained to prevent animals from being able to manipulate them to escape
b) Viewing panels and walkways over enclosures must be able to withstand damage by the species contained within
c) Where fences are used as enclosure barriers, supporting posts must be firmly fixed into the ground. Fence material must be sufficiently strong and secured to supporting posts to avoid being damaged or displaced due to the weight or force of the animal enclosed

8.12 Trees, other vegetation, climbing structures, and other items within enclosures, or near the enclosure fence, must be maintained and positioned in such a way as to prevent damage to the enclosure barriers or ensure they do not act as an aid to animal escape.

8.13 Enclosures containing animals which can dig or burrow must have appropriate infrastructure in place to prevent escape underneath fences or enclosure barriers, without compromising the need of the species to display such natural behaviours.

8.14 Gates and doors to enclosures must be securely locked to prevent unauthorised opening.

8.15 Where a portal opens directly into an enclosure, and the animal's behaviour and natural biology dictates a reasonable risk of escape, and that animal may be hazardous to the public or environment, there must be a double-door system in place to prevent escape from the enclosure.

Additional notes

a) Animal enclosures requiring double-door systems include:
   (i) all enclosures containing any Category 1A or 1 listed primates or terrestrial carnivores
   (ii) all enclosures containing Species of Special Concern (invasive non-native species)
   (iii) all other flying mammals and birds, unless a risk assessment dictates that double-door systems are not required, and this has been confirmed by written agreement with the Licensing Authority

b) To ensure that the double-door systems are effective the Licence Holder must ensure:
   (i) procedures or mechanisms must be in place to make sure that only one of these doors is open at any time
   (ii) the inner (direct into the enclosure) gates or doors must open into the enclosure rather than outwards into the zoo
   (iii) it must either be covered (for example, with a roof) or if open-topped, the sides must be to the same specifications as the enclosure fence
   (iv) the design of the gate or door system must allow for any lock, latch, or bolt to be easily operated by staff from the inside and must be able to contain any animal that attempts to enter the airlock
   (v) the size of the gap between the doors must be, at a minimum, large enough to allow a keeper and any husbandry equipment to stand in the airlock and to close one door before opening the next
   (vi) where electronic gates are used, there must be manual back-up systems that allow gates to be operated and secured in the event of a power failure

c) Infrequently used, typically non-pedestrian enclosure entrances, such as vehicle gates (except in the case of drive-through enclosures), do not require double gate systems but, where there is no double gate, these must be secured and locked using different systems from the standard keeper entrances, for example locks that are only accessible from within the enclosure.

8.16 Each exit from the zoo perimeter and zoo premises must be always kept clear and must be capable of being easily opened by zoo staff from the inside to allow the release of the public in case of an emergency.

Reporting escapes

8.17 The Licensing Authority must be notified as soon as possible and, in any case, no later than 24 hours following the escape from the perimeter of the zoo of any wild species of animal (see Appendix A6 for information about the different rules for Birds of Prey displays).

Additional notes

a) Any instances where animals escape from their enclosures but are demonstrably retained within the zoo perimeter do not need to be reported to the licensing or other authority unless the animal is Category 1 or 1A listed or a Species of Special Concern. If the animal is Category 1 or 1A listed or a Species of Special Concern, these cases must be reported to the Licensing Authority and permitting authorities whether they occur outside or within the perimeter

b) In addition, the statutory nature conservation agency (Natural England, Natural Resources Wales or NatureScot) must be notified as soon as possible and, in any case, no later than 24 hours following the determination that an escaped animal's location is no longer known and that the animal is considered potentially to be alive

Recording escapes

8.18 All escapes of animals from their enclosures must be recorded

8.19 Every effort must be made to recover escaped animals, alive or dead. Where the Licence Holder is unable to do so, they must conduct a documented review of why any recovery failed and adapt their escape and recovery procedures accordingly.

8.20 A senior member of staff appointed by the Licence Holder must always be available to take decisions regarding the live capture and/or humane destruction of escaped animals.

8.21 There must be a documented contingency procedure to be followed in the event of an escape of an animal(s) from their enclosures, the zoo premises, and/or during outreach activities. All members of staff must be familiar with and trained to follow the procedure in a way that is relevant to their role within the organisation.

The procedure must be kept up-to-date and must contain the following elements:

a) the quickest possible means to report the escape to the most senior member of staff available
b) a clear chain of responsibility in the event of an escape
c) the actions to be taken in the event of an escape and recovery of the animal
d) the actions to be taken regarding the visiting public, including overnight accommodation where present
e) the actions to be taken to ensure the security of the zoo perimeter, where applicable
f) the actions to be taken to ensure the security of the zoo boundary, where this differs from the zoo perimeter
g) details regarding the equipment and expertise to capture, tranquillise or kill escaped animals
h) a decision-making process for when to use firearms and darting equipment (where present) in different situations involving animals escaping

i) processes for producing an incident report and contacting relevant authorities
j) consideration not only of public safety but also the welfare of the escapee(s) as well as the potential impact on the conservation of biodiversity by the escapee

The procedure must be reviewed within seven days after each drill or escape to identify areas in need of improvement. Any required changes identified by this review must be implemented and recorded by the Licence Holder.

Escape drills

8.22 Animal escape drills must be carried out on the zoo premises at least 4 times per year. At least 2 animal escape drills must include Category 1A or Category 1 listed animals (where present). All drills must be recorded and reviewed to identify areas in need of improvement. This requirement does not apply to dedicated aquariums (that is, those containing fish and aquatic invertebrates only).

Additional notes

a) Animal escape drills can be undertaken either inside or outside opening hours
b) Animal escape drills can consist of:
    (i) a simulated escape, for example, using members of staff substituting for an escaped animal or by using a model or other object to represent an escaped animal
    (ii) testing of the staff response and implementation of the emergency escape procedures
    (iii) testing of the emergency escape procedure and addressing any weaknesses in the policy

c) Although the following processes are useful as part of escape management planning, animal escape drills do not include:
    (i) tabletop reviews and scenario-based assessments
    (ii) policy and documentation review by management or senior staff
    (iii) an actual escape

d) Where a zoo hosts evening/late night events or has overnight accommodation within the zoo boundary one of these annual drills must be undertaken in twilight or the dark

8.23 Where a zoo is a dedicated aquarium (as defined in Standard 8.22) emergency drills for operational failures must be carried out at least 4 times per year. Emergency operational drills must be recorded and regularly reviewed for effectiveness. Drills must include operational emergencies such as accidental envenomation, water-electrocution management, aquaria tank bursts and management strategies for staff or the public falling into large aquatic exhibits (where applicable).

Additional note

a) Where a zoo contains a significant aquarium and/or large aquatic exhibit these emergency drills must be carried out in addition to the animal escape drills listed in Standard 8.22

Hazardous animal management

8.24 The Licensing Authority must be notified in writing, at least 1 month in advance, of the proposed addition of any Category 1A or 1 listed animal that is from a taxonomic family that has not previously been kept in the zoo.

8.25 The Licence Holder must notify the Licensing Authority before the temporary removal from the zoo premises (other than for veterinary attention or inter-zoo movements) of any Category 1A or 1 listed animal.

Additional notes

a) Notification must be given as early as possible and, in any case, no later than 12 hours before the removal, unless the Licence Holder and Licensing Authority mutually agree on a shorter period
b) The notification must include details of the destination; the method of transportation of the animal; the arrangements for its wellbeing; and the arrangements for the safety of the public whilst it is away from the zoo premises

8.26 Where an open-topped enclosure contains any Category 1A and Category 1 listed primate or terrestrial members of the order Carnivora, there must be an inward-facing overhang or anti-climb barrier that is suitably designed and constructed to contain the animals. The overhang must be appropriate for the species kept in the enclosure. An overhang or anti-climb barrier is not required if the Licence Holder produces a written justification stating why it is not necessary, which is approved by the Licensing Authority.

8.27 In the case of bird of prey species listed in Category 1 or Category 2, due to the hazard of injury from beaks and talons, tethered birds must, when unsupervised, be separated by a stand-off barrier from members of the public.

8.28 An electric fence must not be used as the sole means of primary containment for any animal and must only be used in conjunction with a fence or other appropriate barrier.

8.29 Electric fencing used for animal containment must be checked daily, and the voltage recorded in multiple locations. The voltage must be maintained at appropriate levels for the species and back-up power must be available in the event of a power cut.

8.30 Where the integrity and security of any enclosure containing Category 1A Hazardous Animals is in part achieved by the use of electrical fencing an automated alarm system must be fitted that alerts senior staff in the event of a loss of power or

electric fence failure. Back-up power sources must be available on site for instant use.

8.31 Where an enclosure contains Category 1A, Category 1 or Category 2 listed animals, there must be a documented Safe System of Work (SSOW) in place that outlines all aspects of the safe operation of the enclosure, which staff must follow. For each hazardous species, a risk assessment must be conducted and used as the basis for formulating a SSOW for that species. Staff responsible for working with hazardous animals must be trained in following the SSOWs and such training must be recorded.

Additional notes

a) Where an enclosure contains Category 1A or Category 1 listed animals and lone working occurs, there must be a system of communication to other staff members when a member of the team enters, and exits, the enclosure, as part of the SSOW with steps to be taken if there is a failure of notification within a defined time period as documented in the SSOW
b) Risk assessments and SSOWs must include consideration of situations where staff enter shared spaces with Category 1A or Category 1 listed animals (for example, for veterinary or emergency reasons)
c) Where a collection contains a number of species of similar risk (for instance, a bird of prey centre with numerous small raptors) then the Licence Holder may assess the risk and combine the individual species into one single SSOW relevant to that taxa or similar risk groups to avoid duplication of similar risk assessments and SSOWs. Such amalgamation of species is not permitted with regard to Category 1A listed animals

8.32 Stand-off barriers must be provided and designed to ensure public safety by preventing direct contact with Category 1A Hazardous Animals. Category 1 and Category 2 Hazardous Animals must have a stand-off barrier unless a risk assessment has been conducted that demonstrates public safety can be maintained without a stand-off barrier.

Additional notes

a) Risk assessments must cover all risks (including zoonotic risks) to both human and animal safety
b) Stand-off barriers can consist of fences, walls, hedges, shrubbery, or moats. They must be designed to discourage members of the public from having uncontrolled direct physical contact with animals or enclosure barriers

8.33 Stand-off barriers must be designed to prevent children from getting through, under or over them. They must also be designed to discourage visitors from sitting on them or placing/resting children on them.

Zoonotic disease

8.34 The Licence Holder, working in conjunction with a veterinary surgeon, must have a written zoonoses surveillance programme and associated mitigation protocols in place.

Additional notes

a) The zoonoses surveillance programme must consider the potential zoonotic disease risks associated with the animals held within the collection
b) The Licence Holder must be able to demonstrate consideration of the potential higher zoonotic disease risks associated with certain taxa, whether it be due to their natural history or source
c) Where specific known or potential zoonotic concerns are noted from preventive medicine programmes, including post-mortem examination, the zoonoses surveillance programme must be updated as required and any changes communicated to the keeping staff

8.35 The Licence Holder must provide documented evidence of the training of all relevant staff with regards to zoonotic disease and their management at the zoo.

8.36 Evidence of consideration of zoonotic disease in operational policies regarding any animal walk-through or animal contact scenario must be documented.

Drive-through enclosures

8.37 Each drive-through enclosure containing Category 1A, Category 1 or Category 2 listed animals must be monitored by a member of staff who is competent in assessing the security of enclosures containing hazardous animals and who has been signed off as competent for that purpose by senior management.

8.38 Staff working in emergency vehicles, gate control, observation towers and elsewhere within the drive-through enclosure must maintain communication by electronic means. Such systems must have battery back-up available in case of a power cut that impacts the main communication relay. Where primary communication fails, there must be a secondary method of communication available to be used in an emergency, such as a mobile phone.

8.39 Where drive-through enclosures contain Category 1A listed carnivores or primates, the Licence Holder must make sure that:

a) vehicles without a solid roof are prohibited
b) no vehicle is allowed access unless a rescue vehicle capable of effecting its recovery is immediately available
c) notices are clearly displayed at the entrance to the drive-through area warning the public to:
    (i) always stay in the vehicle
    (ii) keep all doors locked
    (iii) keep windows and sunroofs closed

(iv) sound the horn or flash the hazard warning lights and await the arrival of a rescue vehicle if their vehicle breaks down
(v) deactivate automated door or boot opening systems (where applicable)

d) there are emergency procedures in place for members of the public leaving vehicles within enclosures, vehicle break down and vehicle fires

8.40 Where drive-through enclosures contain Category 1A, Category 1 or Category 2 listed animals, the Licence Holder must make sure that each public vehicular access point has a system which would prevent the escape of the animals, and that this is actively monitored by staff during opening hours.

Additional notes

a) The entry system must have a minimum of 2 components: a primary physical barrier comparable to, or exceeding, that of the enclosure fencing specification supported by a secondary fence, hazard, or other system capable of containing the animal within the enclosure
b) A double-gated system may not be appropriate for some species. In these cases, structures, hazards (such as a cattle grid) or other systems must be in place that are appropriate to contain the species found within and prevent the escape of the animals through the vehicular entrances. Cattle grids are not considered suitable for Category 1A and Category 1 listed carnivores and must not be used to contain these species
c) Active monitoring by staff during opening hours includes physically working a gate, local visual assessment from an observation tower with or without CCTV, and/or keeper patrol units within the enclosure areas
d) Where electronic gates are used, there must be manual back-up systems that allow gates to be secured in the event of a power failure

8.41 Where Category 1A listed carnivores are kept in drive-through enclosures, the Licence Holder must make sure that every public vehicular access point has an electronic double-gated system which ensures that one gate is completely closed before the other gate opens, unless they can demonstrate to the satisfaction of the Licensing Authority that an alternative system works in a similar manner and is able to prevent the escape of animals within and assure the safety of the public. Enclosure gates must either be manned or be supported by local visual assessment from an observation tower with or without CCTV.

8.42 Where Category 1A listed carnivores are kept in drive-through enclosures, the Licence Holder must make sure that the stretch of road at each vehicular entrance into the enclosure is protected by fencing. The fencing must enter the enclosure at a 90-degree angle from the enclosure barrier and must be at least 10 metres in length.

Firearms

8.43 Where a collection contains any Category 1A or Category 1 listed primate, terrestrial member of the order Carnivora, elephant or hoofed mammal, the Licence Holder must make sure that:

a) suitable and sufficient firearms and ammunition, appropriate for the species housed, are kept on the zoo premises for use by authorised staff
b) information on the appropriate calibre firearm to be used on each species contained in the collection, is available on the zoo premises
c) ammunition for respective calibres is selected to ensure maximum effect and minimise risk to persons, animals and property when fired
d) suitable and sufficient darting equipment, appropriate for the species housed, is kept on the zoo premises for use by authorised staff to tranquillise escaped animals, unless the Licence Holder has a written shoot-to-kill policy

These details must be discussed and agreed with the local police force.

8.44 Firearms, including darting equipment, must be cleaned and maintained in line with recommendations by the manufacturer. Such equipment must be kept securely when not in use or under maintenance.

8.45 Documented evidence of firearm accuracy must be maintained; this can include records of a firearm being zeroed or assessment of accuracy where a firearm is regularly used (for example, efficacy and accuracy during pest control, culling, or target practice).

Additional note

a) Where rifles are infrequently used (for example, only at quarterly training) firearms must be zeroed at least once a year

8.46 Where a collection contains any Category 1A or Category 1 listed primate, terrestrial member of the order Carnivora, elephant or hoofed mammal, at least one member of staff who is licensed and trained in the use of firearms must be available on the zoo premises during operational hours and must be able to attend the premises within 20 minutes outside of operational hours. When more than one member of the firearms team is available on the zoo premises, there must be a clear hierarchy of responsibility.

Additional notes

a) There must be a rota to make sure that at least one member of the firearms team is available on the zoo premises at all times during opening hours and able to attend outside of these times

b) Operational hours includes whenever the public are present on the zoo premises, for example, including when overnight accommodation and out-of-hours events occur

8.47 Every person licensed to use a firearm and each member of the firearms team (if different) must receive structured training and their competency must be assessed by a suitably qualified person. They must be capable of shooting an animal humanely, accurately and from a variety of distances when required and must be capable of using firearms and ammunition relevant to the species kept at the zoo.

8.48 Firearms training must be undertaken on a quarterly basis (four times per year) as a minimum. Evidence of training, maintenance of critical skills using all of the firearms held, and continued professional development must be documented.

8.49 Where firearms are held on site, the firearms team must be deployed in emergency response drills at least twice a year. This may be incorporated into the emergency escape drills.

Health and safety

8.50 The visiting public must not be allowed to enter buildings or other areas of the zoo premises which could present an unreasonable risk to their health and safety. Buildings, structures, and areas to which the public are not permitted access must be clearly designated or signed and doors or gates locked when not in use by members of staff.

8.51 Areas to which the public are permitted access must have surfaces that are maintained to minimise the risk of falling, slipping, or tripping.

8.52 Gates and doors to animal contact areas, and all enclosure barriers and stand-off barriers, must be designed, constructed, and maintained to avoid trapping or injuring the public.

8.53 Where a moat (whether wet or dry) is used to contain animals, it must be surrounded by a stand-off barrier (such as a fence, wall, hedge, or shrubbery) sufficient to deter the public from approaching too close to the edge of the moat.

8.54 Barbed wire, razor wire and electric fencing must be beyond the reasonable reach of the public.

8.55 Electrified fences must have an adequate number of safety signs giving warning of the hazard either by symbol or a combination of symbol and words. Safety signs on any electrified section of perimeter fence must face both inwards and outwards.

8.56 Trees within areas where visitors are likely to be walking or sitting must be regularly inspected and managed by a suitably qualified person as appropriate to avoid visitors being harmed by falling trees/branches.

Additional notes

a) Trees must be inspected at a minimum of every eighteen months, preferably so that trees can be viewed both when in and out of leaf
b) Assessments must be documented and where actions are required these must be completed in a time proportionate to the noted risk

8.57 The release of biological contaminants such as parasites, diseases, or non-native plants through wastewater must be prevented as far as reasonably practicable. Wastewater must be treated where risk has been noted to ensure this does not occur.

Signs

8.58 The Licence Holder must use symbol-based health and safety, hazard, or risk management signs wherever practicable to ensure inclusivity and appropriate communication of risk to members of the public, for example, visitors where English is not their primary language and children.

8.59 Suitable warning signs and information, either by symbol or a combination of symbol and words, must be provided where animals and visitors may come into contact.

8.60 Warning must be given of all edges where a person might fall. Such edges must be guarded by a barrier capable of preventing visitors from falling.

8.61 Publicly accessible areas where there are potential risks to public safety must have signs that clearly indicate any significant hazards or the public must be separated from any such risk, for instance, by means of barriers.

8.62 Exits must be suitably located and adequately signed.

Public facilities

8.63 First-aid equipment must be readily accessible on the premises along with clear instruction on its use by approved members of staff. First-aid points must be adequately signed.

8.64 There must be appropriate numbers of staff trained in human first-aid available during the zoo's normal operating hours. The number of staff must be proportionate to the number of visitors and the size of the zoo.

8.65 Properly equipped and maintained toilet facilities must be available for use by the public. Clean, warm water for hand washing must be provided along with soap and hand drying facilities.

8.66 Smoking or vaping by staff and the public must be prohibited except in designated areas away from the animals. There must be signage which clearly designates areas where smoking or vaping is and is not permitted on the zoo premises.

Section 9: Animal experiences and contact areas

Preface

In addition to the Zoo Licensing Act 1981, there are several pieces of legislation governing the exhibition of wild animals, including the:

- Animal Health and Welfare (Scotland) Act 2006
- Animal Welfare Act 2006
- Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018
- Dangerous Wild Animals Act 1976
- Performing Animals (Regulation) Act 1925
- Wild Animals and Circuses (Wales) Act 2020
- Wild Animals in Travelling Circuses Act 2019
- Wild Animals in Travelling Circuses (Scotland) Act 2018

Section 22(2) of the Zoo Licensing Act 1981 states: 'For the purpose of the said Act an animal shall be… treated as kept in a zoo when it is elsewhere in the personal possession of the operator of the zoo, or of competent persons acting on his behalf'.

Although interpretation of the legislation is a matter for the courts, Section 22(2) is generally held as exempting a zoo from the requirements of the Dangerous Wild Animals Act 1976 and thus the need to apply for permission from local authorities to bring the animal into their area.

For zoos in England only: an establishment suitably licensed under the Zoo Licensing Act 1981 is exempt from requiring a licence to keep or train animals for exhibition under the Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018.

Animal experiences in zoos

The various types of animal experiences are categorised as follows:

- **'animal engagement areas'** are animal enclosures or areas that allow public access but have the intention that direct contact with animals is either prevented or purposefully discouraged. Examples include: some walk-through exhibits; drive-through exhibits; animal demonstrations or shows; or free-roaming animals within the zoo perimeter; or where the public can feed a Category 1A Hazardous Animal through mesh but direct contact is prohibited
- **'animal contact areas'** are situations, areas or animal enclosures where the zoo actively encourages potential or actual direct contact with animals by members of the public within the zoo premises under the supervision of trained zoo staff. Examples include: animal handling demonstrations; live animals in educational programmes;

touch pool exhibits; diving pool exhibits; animal rides; direct animal feeding (including through barriers); and animal 'behind-the-scenes' experiences

- **'outreach activities'** are situations where animals are removed from the zoo premises and exhibited to the public or used for activities in other locations, including media engagement

General provisions

9.1 Animal experiences must only take place under conditions consistent with the animals' welfare, that will not lead to the animals' physical or psychological discomfort.

9.2 All types of proposed animal experience must be subject to ethical review and welfare assessment before taking place. Any such activity and ongoing animal experiences must be regularly reviewed through the zoo's ethical review process to ensure practices are in place so the animal's welfare is not compromised during the experience(s).

Additional note

a) Records must be kept of any notable behavioural changes, illness, deaths or incidents, injuries, and welfare problems that may arise during animal experiences

b) For the purpose of this standard, 'regular reviews' are considered to be at least annually or following any negative incidents involving the animals, members of the public or staff during an animal experience.

9.3 Where animal welfare is negatively affected during animal experiences steps must be taken to ensure such negative effects are prevented. The welfare concerns must be documented, and the mitigating steps recorded. If mitigation is not possible or effective then the animal experience must cease.

9.4 Category 1A listed animals must not be used for activities involving the public, and the public must not be allowed access into their enclosures, when the animal is present in the same shared space, unless the public are in an enclosed vehicle. Interaction through enclosure barriers is permitted. The Licence Holder must ensure that there are risk assessments and safe systems of work (SSOW) in place that show that public safety will not be significantly compromised by these activities and that any risks identified will be mitigated.

9.5 Animals that are Species of Special Concern (invasive non-native species) must not leave their enclosures for the purpose of activities involving the public.

9.6 For all other animals, excluding animals listed as Category 1A or Species of Special Concern, where members of the public may have close contact either within or outside an enclosure or through enclosure barriers, the Licence Holder must ensure that there are risk assessments and safe systems of work in place, prior to the experience, that show that public safety will not be significantly compromised by the activities and that any risks identified will be mitigated.

Additional notes

a) Risk assessments must consider all risks, including zoonotic, to both human and animal safety
b) This includes animals used in outreach activities

9.7 Animals must be suitable for the activities expected of them. This must include consideration of the animal's natural biology and temperament, both as a species or an individual.

9.8 Animals must not be used unless fit and healthy for the intended activity.

9.9 Animals must be handled and managed only by, or under the supervision of, appropriately trained and experienced staff. Handling must be done with care to protect the animals' welfare and to avoid unnecessary discomfort, stress, or physical harm.

Additional notes

a) Where animals are handled by staff or members of the public, the rotation of individual animals used must be undertaken to ensure the animals' welfare needs are met. Their use must be recorded and appropriate rest periods provided for the animal between activities
b) The number of animals used must be sufficient to allow appropriate rest periods between handling experiences. The number of animals required must be proportionate to the handling activity, the handling frequency, the handling duration and the natural history and welfare needs of the individual species being handled. The determined number of animals required for an activity must be justified, and documented as to the rationale, in the proposed animal experience ethical review and any subsequent annual reviews
c) 'Appropriate rest periods' between potential handling experiences must be determined by ethical review, taking into account the number of visitors to the zoo and the number of potential animal handling experiences carried out each day
d) Whilst the 'appropriate rest period' is determined by ethical review, where animal handling is directly carried out by members of the public the appropriate rest period must be no less than 48 hours for each animal

9.10 Animals requiring specialist environmental conditions (for example, reptiles and amphibians, semi-aquatic or aquatic invertebrates) must not be removed from their enclosures for the purpose of animal experiences, unless environmental conditions, within the accepted parameters for that species, are continuously maintained and their welfare is not negatively impacted.

9.11 Visitor numbers and behaviour within and around animal enclosures must be controlled to avoid any negative impact on animal welfare. Where the public are allowed into animal enclosures, there must be a documented procedure in place for their management.

9.12 The public must be prohibited from eating food and drink in animal contact areas. Pictorial signs must be displayed prohibiting the public from entering animal contact areas with food and drink intended for human consumption and warning of the risk of injury caused by the animals. Staff on duty within the enclosure must make sure the public follows this rule.

9.13 Feeding of animals, where the public may come into contact with the animals, must only take place under supervision of staff unless the activity is risk assessed on grounds of animal health, welfare, and public safety.

9.14 Authorised feeding of animals, where the public will not come into direct contact with the animals, does not need to be supervised.

9.15 The Licence Holder must provide documented training, with regular updates, which instructs their staff on the reasons, and the need, for the public to wash and dry their hands thoroughly after being in animal contact areas.

9.16 Hand washing facilities must be suitably located near pedestrian animal engagement areas and animal contact areas. Clean, warm water for hand washing must be provided along with soap and hand drying facilities.

Walk-through exhibits

9.17 All public walk-through enclosures must have clearly delineated areas distinguishing the public areas from those only for the animals. There must be effective signage and barriers to make sure that the public does not enter the animal only areas.

9.18 All public walk-through enclosures where contact is permitted between animals and the public or where there are Category 1 or Category 2 listed animals present must be supervised by an appropriate number of suitably trained and experienced staff and/or volunteers when open to the public.

9.19 Category 1A listed animals are not permitted in walk-through exhibits.

9.20 Category 1 and Category 2 listed animals in walk-through exhibits, must have documented risk assessments and appropriate controls implemented to mitigate potential risk to members of the public.

9.21 The Licence Holder must make sure that there are written safe systems of work and associated training for staff outlining the processes for intervention in defence of either members of the public or animals if required.

Touch pools

9.22 Vertebrates, decapod crustaceans and cephalopods must not be kept in touch pools.

9.23 Touch pool environments must be suitable to meet the welfare needs of the animals at all times and allow them the choice to interact with the public or to stay out of public reach.

9.24 The Licence Holder must make sure that touch pools comply with the following requirements:

a) a registry must be kept of all animals used in touch or rock pools intended for animal contact events
b) records must be maintained that demonstrate the frequency of rotation of animals in the touch pools and any other relevant management practices, in the case of fixed species, where applicable, these must be included and noted as such, for example, anemones
c) touch pools must be continually supervised by suitably trained and experienced staff who are responsible for ensuring that any interactions with the public are appropriate and stopped if the animals show signs of compromised welfare or fatigue; or when supervision is not present, designed in such a way that makes it impossible for the public to come into contact with the animals (for example, with a cover or barrier)
d) the pools must have life support systems capable of maintaining water quality and animal health
e) the pools must have routine water quality checks undertaken and documented, with pre-determined actions to be taken if the results are outside of the accepted limits. The frequency of such checks should be equal or greater than those stated in the aquarium section of these Standards
f) health checks on animals in touch pools or rock pools must be undertaken and documented and any health issues and associated corrective action noted

9.25 Unsupervised handling of animals in touch pools or similar exhibits by members of the public must not occur

9.26 Staff responsible for supervising touch pool exhibits must be properly trained in:

a) the handling, care, and recognition of the signs of compromised welfare and fatigue of the species held
b) supervising the public at touch pools to ensure appropriate behaviours when engaging with the animals, both those used and not utilised for animal contact

9.27 Any mutilation intended to make an animal less dangerous for the public must not take place.

Diving pool exhibits

Where divers are permitted to have access to aquatic animal tanks and pools on the zoo premises, attention should be paid to the Diving at Work Regulations (1997) and the Health and Safety Executive's (HSE's) related Approved Codes of Practice (ACOPS).

9.28 The Licence Holder must ensure that all dive activities undertaken on the premises must have documented risk assessments and associated standard operating procedures in place that outline all aspects of management of the safe operation of the dives, which the staff must follow.

9.29 Where divers, who are members of staff, are required to dive in an aquatic animal enclosure, they must be suitably trained and experienced, be under the supervision of a suitable trained and experienced diver, and/or hold relevant diving qualifications.

9.30 Where external contractors or volunteers are used to dive in aquatic animal enclosures, they must hold a relevant diving qualification and must be accompanied by a suitably competent and trained member of staff before entering the enclosure.

9.31 Where members of the public engage in animal activities within an aquarium they must be accompanied by a suitably competent and trained member of staff.

Additional notes

a) Where the animal activity involves diving there must be a competent and trained member of staff accompanying the member of the public throughout the dive
b) Where members of the public engage in snorkelling within an aquarium the activity must only occur in a contained space but can be supervised either by staff within the water, or where appropriate, from the side of the pool
c) Divers, either commercial or as part of animal experiences, must be made aware of any hazards within the aquarium before they enter. Such hazards include the animals present, water quality issues and/or potential zoonoses so divers can make evidence-based decisions on whether to enter the water or not.

9.32 The Licence Holder must make sure that any divers not directly employed by the zoo receive a briefing about the behaviour and requirements of sharing the same space with the species contained in diving tanks before access is permitted.

Shows and demonstrations

9.33 When not participating in shows or demonstrations, animals must be provided with accommodation that meets the welfare, social and behavioural needs of the species as outlined in the rest of the Standards.

9.34 Shows and demonstrations must have a relevant educational and conservation component.

9.35 The behaviours animals are asked to exhibit during demonstrations must be appropriate to that species and its natural biology and serve a clear educational and/or welfare purpose.

9.36 Animals must not be provoked for the benefit of the viewing public.

Demonstration birds and their environment

9.37 The area where birds are reasonably expected to fly in demonstration areas must be free of hazards that pose a significant threat to the well-being of the birds.

9.38 Demonstration areas for free-flown birds must be a suitable distance from enclosures containing animals that might catch or kill a bird should it alight on, or in, the enclosure. Written protocols that detail how risks will be mitigated against when using free-flying birds in demonstrations must be produced and implemented.

9.39 The selection of species and individuals for free-flight demonstrations must aim to avoid or minimise conflict when flying multiple birds or species.

9.40 All bird species used in free-flying or static displays that are restrained using a tether as part of their management must comply with the requirements outlined in Appendix 6.

9.41 All equipment used on free-flying birds must be of a suitable size and quality and must be regularly checked and maintained. Slitted ‘mews jesses’ must not be used on free-flying birds.

9.42 Birds in free-flying demonstrations must wear functioning telemetry or GPS devices, with a minimum of a three-day operating time, unless there is a specific biological or behavioural reason not to do so.

9.43 Species of Special Concern, as listed in the Invasive Alien Species (Enforcement and Permitting) Order 2019, must not be used in free flying demonstrations.

9.44 The use of Category 1 and 2 listed birds in free flying demonstrations must be subject to risk assessment. Safe Systems of Work (SSOW) and risk assessments must be conducted for both Category 1 and 2 listed birds prior to demonstrations taking place. Staff responsible for working with hazardous animals must be trained in following the SSOWs.

9.45 Taking birds to and from demonstration areas must be as safe and stress-free as possible (for example, birds may be contained in an appropriate box or crate, or travel in a suitable vehicle, or be carried safely on the fist).

9.46 Transport distance and time to and from demonstration areas must be minimised.

9.47 Birds must not be housed or shut away in avian transport boxes or other restrictive containers except during transport, or for examination or treatment by a veterinary surgeon, and this must be in accordance with the Wildlife and Countryside Act (1981). The Licence Holder must produce a written protocol outlining such permitted circumstances and this must be approved by the Lead Veterinary Service.

Additional note

(a) Birds must not be housed or shut away in avian transport boxes or other restrictive containers at night

Training of animals

9.48 Training of animals in the zoo collection must be conducted or supervised by appropriately trained and experienced staff.

9.49 All training of animals must provide a net positive welfare benefit to the animal involved. The objective of any training must always be clearly defined in the context of:

a) the purpose of the training
b) animal welfare considerations
c) keeper safety
d) public safety

9.50 There must be individual training plans for any animals or groups of animals that undergo training, which must be based on advice from a suitably competent person. Training plans must be used to record all training undertaken at the zoo, including:

a) goals and objectives
b) training progress and amendments
c) records of training sessions, including any abnormal, unpredictable, or otherwise significant behavioural irregularities for each animal and demonstration

9.51 Animal training must be based on operant conditioning using positive reinforcement. Negative reinforcement and negative punishment (for example, a ‘time out’) must only be used with careful consideration, where positive reinforcement is not possible. Positive punishment must never be used unless it is to protect animal or human safety in an emergency.
Written protocols that outline the approved and non-approved methods must be established.

Additional notes

a) Positive reinforcement is defined as adding something to increase/strengthen a behaviour, for example, providing a treat after the performance of a requested behaviour
b) Negative reinforcement is defined as the termination/removal of something to increase/strengthen a behaviour, for example, the removal of the pressure from a halter
c) Negative punishment is defined as the termination/removal of something to decrease/diminish a behaviour, for example, a favourite keeper removing themselves as a time-out

Positive punishment is defined as the application of something to decrease/diminish

a behaviour, for example, hitting if an undesirable behaviour is performed

	Reinforcement	Punishment
Positive **(Giving something)**	Adding a reward to **increase** a behaviour (treat)	Adding something to **decrease** a behaviour (hitting)
Negative **(Taking something away)**	Removing an aversive stimulus to **increase** a behaviour (removal of pressure from a halter)	Removing a reward to **decrease** a behaviour (take away treat/toy or time out)

9.52 Training methods and equipment must not cause pain, suffering or injury to the animals.

9.53 Training methods must be tailored to the natural behaviour of the individual animal and species.

Outreach activities

9.54 Any animal taken outside of the zoo must be in the personal possession of the Licence Holder, or of competent persons acting on their behalf. The Licence Holder or such competent persons must make sure that when an animal is taken off the zoo premises at all times that:

a) the animal's welfare needs are met
b) the environment provided is secure in preventing escape
c) any outreach activity has a clear educational benefit to justify the removal of animals from their zoo enclosures

The person responsible for handling the animals off-site must have the authority to end any interactions to ensure the welfare of the animals is not compromised.

Additional note

a) Animals requiring specialist environmental conditions (for example, reptiles and amphibians, semi-aquatic or aquatic invertebrates) must not be removed from their enclosures for the purpose of animal experiences unless environmental conditions within the accepted parameters for that species are continuously maintained during the experience and the animal's welfare is not negatively impacted

9.55 Animals must be kept away from direct contact with persons (other than the member of zoo staff responsible for the animals) and other animals, unless the

Licence Holder (or representative) is satisfied that they are not likely to cause injury, suffer distress, or transmit or contract disease.

9.56 An outreach checklist must be completed prior to any animals being removed from the zoo premises for outreach activities, which must detail:

a) name of persons with ultimate responsibility for the animals
b) location of destination
c) details of the activities to be undertaken, including purpose
d) planned frequency of handling, activity, and rest periods
e) measures taken to ensure the animal's welfare needs and environmental conditions can be constantly met, including during transport

Section 10: Conservation and research

General

10.1 Zoos must participate in, as a minimum, at least one of the five following conservation measures, as outlined in Section 1A (a) of the Zoo Licensing Act (1981) as amended:

(i) research from which conservation benefits accrue to species of wild animals and/or
(ii) training in relevant conservation skills and/or
(iii) the exchange of information relating to the conservation of wild animals and/or
(iv) where appropriate, breeding of wild animals in captivity and/or
(v) where appropriate, the repopulation of an area with, or the reintroduction into the wild of, wild animals.

Additional notes

a) The required conservation measures will be assessed by the zoo inspector(s) in proportion to the size of the zoo and its resources
b) Where a zoo is part of a wider organisation that has a centralised conservation mission and delivery apparatus, the participation in the conservation measures can be considered as part of the wider organisation's delivery. In such instances, the zoo must still demonstrate how it individually contributes to and supports the wider organisation's conservation measures
c) Zoos are not restricted to carrying out conservation in areas that only fall within the remit of the Section 1A(a) Conservation Measures. However, to ensure compliance with the Act, at least one of the measures detailed in 10.1 must be undertaken
d) Standards 10.5 – 10.9 outline what the Licence Holder must achieve as a minimum to meet the individual optional Section 1A(a) Conservation Measures
e) Zoos must implement all of the mandatory conservation measures as outlined in Section 1A (b) to (f) of the Zoo Licensing Act (1981) as amended

10.2 The Licence Holder must have a written conservation strategy that outlines the zoo's conservation activities and how the Section 1A Conservation Measures will be met.

10.3 The Licence Holder must ensure a written Annual Conservation Summary (ACS) is produced detailing how the Section 1A(a) Conservation Measures have been met by the individual zoo from the 1 January to the 31 December (for example, 1 January to 31 December, 2024). A copy must be forwarded to the Licensing Authority no later than the 1 March of the following year (for example, 1 March, 2025). The ACS must include:

a) a reference to the Section 1A(a) Conservation Measure that the project proposes to meet (as outlined in Standard 10.1)
b) a summary of the conservation activities undertaken
c) a description of the project, including purpose and objectives of the conservation activity

d) details of the actions undertaken in the year contributing to each individual conservation activity undertaken
e) an evaluation of the conservation benefits that resulted from the conservation activities undertaken

Additional notes

a) Where a zoo produces an annual conservation report which contains similar information for another official body (for example, the Charity Commission), this is considered to be an acceptable alternative to the ACS
b) The ACS is expected to be a brief summary of the annual conservation activities carried out by a zoo (see Table 10.1). Zoo inspectors may assess projects in more detail during inspections
c) The following additional information, where useful, could be considered for inclusion in the ACS:
    (i) where the project takes place
    (ii) a list of stakeholders, including the lead organisation driving the projects, where applicable
    (iii) a brief summary description of the projects, including works carried out and the specific contribution by the zoo to the project
    (iv) an evaluation of the benefits to wild animals from any species, ecosystems or habitat conservation project carried out
    (v) financial support provided by the zoo to the project
    (vi) estimated total staff time provided by the zoo (if any) for the project
    (vii) progress to date towards the project's long-term objectives

Table 10.1: Example Annual Conservation Summary (ACS)

S1A Conservation measure met	Conservation Activity undertaken	Description of project, including purpose and objectives	Work undertaken during the year	Evaluation of the conservation benefits
1A(a)(i) **1A(a)(ii)** **1A(a)(iii)** **1A(a)(iv)** **1A(a)(v)**	**Wild camel breeding and reintroduction**, Gobi, Mongolia	Multi-partner programme, primary lead for vet health care, preventive medicine and disease risk assessments prior to translocation planned 2025	• 31 wild camel >1y/o sedations, and 8 calf health assessments • Full biochem, haem and disease surveillance • Site assessment for translocation • Maintenance of feral camel fences • Anaesthesia peer reviewed publication	• 100% of animals underwent assessment • Disease risk assessments completed • Population assessment and preparation for translocation • Training capacity in situ developed
1A(a)(i) **1A(a)(iii)**	**Native species - bat habitat development**	Bat habitat improvement, bat box installation, surveys and local Bat Society involvement	• Survey undertaken, 35 lesser horseshoe bats noted and soprano pipistrelle • 20 additional boxes installed in woodland, maintenance of old	• Doubled number of bat boxes installed compared to previous year • Lesser horseshoe bat population

			farmhouse for roost protection • Bat friendly wildflower plantation additional 20kg seed planted	increased 5% on previous year • Survey boxes shows 40% uptake, review locations for subsequent year
1A(a)(iv)	**Bongo bachelor herd, EEP programme**	Working in collaboration with the bongo EEP	• Agreed to take bachelor herd as part of expansion of number of holders of the species • Plan to hold for three years and then move to breeding programme	• Support of the EEP whilst expand the number of holders • Long-term plan move to bringing herd, possible hold bachelors and separate breeding herd – to review 2025

10.4 All zoos must display information that is visible to all visitors about the zoo's conservation strategy and its implementation.

Conservation research

10.5 Where the Licence Holder undertakes research from which conservation benefits accrue to species of wild animals to meet their Section 1A(a) Conservation Measures requirements, they must keep a written record of their research activities.

Additional notes

a) Examples of conservation research include, but are not limited to:
   (i) conservation research activities on the zoo's premises
   (ii) conservation research activities away from the zoo
   (iii) habitat, ecosystem or sustainability programmes where there is a demonstrable conservation benefit to wild animals
   (iv) conservation research on, or directly involving, the living collection of animals where there is a demonstrable conservation benefit to wild animals as part of the project
   (v) animal welfare, veterinary or husbandry research that supports either captive and/or wild populations
   (vi) sharing of samples, records or other data as part of external or wider research projects
   (vii) data collection can be conducted by zoo staff or external partners and can be for projects on site or as contributions to larger research projects

b) Research is of very limited value if the results are not made available to others, therefore data must be made readily available for legitimate requests. Where applicable it should also be presented and/or published or contribute to larger multi-institution publications

c) All zoos must make sure that all research, where animals or people are affected or involved, is subject to ethical review, either by the host zoo or by the academic institute involved, before data collection commences. Legal requirements as per the

Data Protection Act 2018 must be followed for all cases where sensitive data on human participants are collected, held, and analysed for scientific research

d) Any research carried out by zoo staff or visiting scientists must comply with all relevant legislation, including The Animals (Scientific Procedures) Act 1986 (ASPA)
e) The Licence Holder must develop a research policy and research protocols to ensure that all research involving animals clearly identifies any potential animal welfare concerns and that any compromise is minimised, transient and justified in terms of the objective of the research. Such research must have a named member of staff appointed to oversee and monitor all research activities

Training in relevant conservation skills

10.6 To meet their Section 1A(a) Conservation Measures requirements, where the Licence Holder provides training in relevant conservation skills they must keep a record of these training activities.

Additional note

a) These records must be able to demonstrate that they have facilitated and implemented conservation training and knowledge exchanges, such as project staff from the field visiting a zoo and specialists going out to a project field site

Exchange or transfer of conservation information

10.7 To meet their Section 1A(a) Conservation Measures requirements, where the Licence Holder undertakes the exchange or transfer of information relating to species conservation, the zoo must maintain records to demonstrate how this has been achieved and the potential conservation benefits that resulted.

Additional notes

a) Examples of the exchange or transfer of conservation information include, but are not limited to:
   - the publishing, or contribution to the publication of, results from conservation research projects undertaken by the zoo
   - information made available to the public about the zoo's, or other partners', conservation activities pertinent to the conservation of biodiversity
   - provision and support for staff to participate in relevant professional groups, committees or associations that are actively doing relevant conservation work
   - sharing information and expertise on how to conduct research, develop conservation programmes and/or health care programmes that benefit conservation and/or
   - measurement of effectiveness of the zoo's conservation programmes and activities, shared with a wider audience

Conservation breeding of wild animals in captivity

10.8 Where the Licence Holder undertakes the breeding of wild animals in captivity to meet their Section 1A(a) Conservation Measures requirements, the zoo must be able to demonstrate that this contributes to the breeding, or maintenance of genetic

diversity, of species of conservation concern, which includes species listed as Vulnerable (VU), Endangered (EN), Critically Endangered (CR) or Extinct in the Wild (EW) on the IUCN Red List of Threatened Species, either listed globally or regionally. If such species are held, a zoo must be an active participant in any recognised species management programmes.

Additional notes

a) Meeting the species management programme requirements can involve keeping animals in non-breeding settings unless breeding is required by the programme
b) Zoos that do not belong to national or regional zoo associations are limited in the extent to which they can participate in species management programmes. However, such zoos must make records of relevant species and demonstrate that animals have been made available to breeding programme coordinators
c) Breeding animals of species for which there are no related population management programmes, coordinated conservation breeding programmes or in situ conservation programmes is not a recognised conservation activity, unless it is for staff training and to establish protocols and models using non-conservation sensitive species in preparation for a project with a similar but endangered species

Repopulation or reintroduction into the wild

10.9 To meet their Section 1A(a) Conservation Measures requirements, where the Licence Holder actively repopulates or reintroduces animals into the wild these must be part of a recognised project and must follow appropriate guidelines such as the IUCN Guidelines for Reintroductions and other Conservation Translocations or local biodiversity action plans. Documented evidence of both the animals released and the details of the release programme itself must be maintained.

Section 11: Education

The following standards must be met by all zoos, regardless of size or type. Where an organisation owns and operates more than one site, these requirements apply to each individual site.

11.1 All zoos must have an education programme that promotes public education in relation to all the following areas:

a) the living collection, particularly the biological characteristics, natural habitat and behaviour of the animals at the zoo
b) the conservation of biodiversity, in particular by providing information about the species exhibited and their natural habitats, their conservation status and threats in the wild
c) encouraging positive behavioural changes for conservation and sustainability, by providing information and educational activities that are relevant to visitors in their daily lives

The programme can be delivered via a range of methods but must include, as a minimum, provision of relevant signage.

11.2 All zoos must have a written education strategy that demonstrates how the zoo will deliver, monitor, and evaluate its education programme.

11.3 All zoos must have a named member of staff to be responsible for the overall education delivery and for formulating, monitoring, and evaluating the education programme.

11.4 All zoos must make sure that the zoo's education programme, including methods of interpretation for visitors (for example, signage, graphics, interactive displays, presentations), must be inclusive and accessible for a range of ages and abilities.

11.5 All zoos must have suitable facilities, provisions, and appropriate numbers of suitably trained staff for any formal education sessions where these are provided by the zoo.

11.6 All zoos must keep a record of their educational activities and evaluate the effectiveness of these activities by collecting evidence (for example, feedback forms). This must undergo a documented annual review to demonstrate the impact of the education programme.

11.7 All zoos must display accurate information on each animal enclosure about the species therein. This must include, as a minimum:

a) the species name (both scientific and common)
b) its natural habitat and distribution
c) examples of the species biological characteristics (for example, behaviour, diet or weight)

d) the species conservation status on the International Union for Conservation of Nature (IUCN) Red List (including for those species not evaluated)
e) an image of the species where this would aid identification or detection
f) for species of special concern (invasive non-native species) they must also be clearly identified as such, with comment as to their potential invasiveness and impact on biodiversity

Section 12: Stock Records

General provisions

12.1 The Licence Holder must record the following information for each individually recognisable animal or group of animals within the zoo collection (where appropriate):

a) identification and scientific name
b) origin (for example, whether wild or captive-born, including identification of parents, where known, and locations where the animal was previously held, if any)
c) dates of acquisitions into, and dispositions from, the zoo collection
d) date (or estimated date) of birth or hatching
e) sex (where known)
f) any distinctive markings, including tattoos, freeze-brands, rings, or microchips
g) clinical data, including details and dates of all treatment given
h) behavioural and life history data
i) date of death and the result of any post-mortem examination and laboratory investigations
j) damage or injury to people, animals, or property
k) escapes
l) conservation status as found on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species

12.2 An Annual Stock Record of all animals must be maintained from the 1 January to the 31 December (for example, 1 January to 31 December, 2024). A copy must be forwarded to the Licensing Authority no later than the 1 March of the following year (for example, 1 March, 2025). The Annual Stock Record must include the following information:

a) common and scientific names of the species
b) conservation status as listed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species
c) hazardous animal categorisation (see Appendix B)
d) total number of animals in the collection on 1 January
e) number of arrivals into the collection from all outside sources
f) number of births or hatchings within the collection in the reporting year
g) number of animals that died, including culls
h) number of animals that departed the collection, including sales and breeding loans
i) total number of animals remaining in the collection on 31 December of the reporting year
j) the sex of each animal must be recorded using the M.F.U standard (male: female: unknown sex), for instance, 1.2.3 indicates 1 male, 2 females and 3 unsexed animals

The annual stock record must be set out in a multi-column format (see Table 1).

Table 12.1: Annual Stock Record Format

Common name	***Scientific name***	IUCN Red List Status	Hazard Cat.	Total on 1st Jan 2022	Arrived	Born	Died	Departed	Group on 31 Dec 2022
Wattled crane	*Bugeranus carunculatus*	VU	2P	2.1.1	0.2.1	0.0.2	1.0.0	0.1.0	1.2.4

12.3 The zoo collection's Annual Stock Record must include all animals that have been present within the licensed premises during the period 1 January to 31 December.

Additional notes

a) This includes any temporary exhibitions and animals that are owned and operated by persons other than the Licence Holder, but for the purposes of the licence are considered to be the responsibility of the licence operator whilst they are on site and under the direction of the zoo licence
b) In such instances, these animals must be recorded as arrivals and departures if they arrive or leave site during the period of the Annual Stock Record
c) Where wildlife rehabilitation occurs on site these wild rehabilitation animals must be recorded on a separate Wildlife Annual Stock Record, and not be duplicated in the collection Annual Stock Record. See Standard 12.5

12.4 Where a collection contains both (i) individual and (ii) census- and/or colony-counted animals, these must be recorded on separate Annual Stock Records to facilitate differentiation between the transactional (individual) counts and the census or colony counts (group counts). Animals must be individually counted where possible.

Additional notes

a) Annual Stock Record for individual animals - this must tally so that all the columns add up to the final count on the 31 December. All efforts must be made by the Licence Holder to provide accurate counts. Where this is not possible, the onus will be on the Licence Holder to provide a reasonable justification
b) Annual Stock Record for census or colony animals - it is recognised that the Annual Stock Record for census or colony counts may not tally up across the year, but efforts must be made to give as accurate an indication of numbers as possible, especially with regard to documenting mortalities
c) Census and colony counting methods are only permitted in cases where, due to the nature of the species and number of animals, individual counts are impossible or extremely challenging (for example, leaf cutter ant colony or a large shoal of small fish in a complex marine system)

d) Census and colony counting methods are not permitted for larger vertebrates, that can be easily counted or where there are only one or two animals

12.5 Where a zoo includes a wildlife rehabilitation operation, a separate Animal Stock Record of each native wildlife animal admitted and rehabilitated must be kept by the Licence Holder, even if it was euthanased on admission. The Wildlife Annual Stock Record must include the same details required for the Zoo Annual Stock Record, as outlined in Standard 12.2, but will only include the wildlife rescue or rehabilitation population. A copy must be forwarded to the Licensing Authority no later than the 1 March of the following year to which it pertains, along with the zoo collection Annual Stock Record(s).

Section 13: Ethical Review

13.1 The Licence Holder must have an ethical review process, that has a written policy for dealing with ethical issues that is credible, transparent, and effective. There must be a system in place that permits the zoo's activities to be reviewed independently and impartially.

Additional notes

a) The system put in place may function as a committee that meets on a regular basis, or virtually, for example, via video conferencing meetings, or a process of documented emails

b) For larger zoos, without a dispensation, it is expected that this will be a physical committee who may meet in accordance with Standard 13.1(a) (as appropriate)

c) Whilst the ethical review process is mandatory, the Licence Holder is not bound by the ethical review committee's decision. All final decisions and legal responsibility relating to compliance with the Standards remain with the Licence Holder. The Licence Holder is only required to demonstrate that they have considered the point of view of the ethics review committee and that where these opinions differ the Licence Holder must justify the rationale for taking alternative action. In such instances, the Licensing Authority, with advice from the zoo inspectors, will review the justification as part of any investigation where there has been non-compliance with the Standards or other legislation, and where applicable refer them to the appropriate enforcement agency

13.2 The ethical review process must be undertaken a minimum of twice a year and as required, for instance, when issues come up. The process must be carried out as transparently as possible. Ethical reviews and decisions must be documented, preferably as meeting minutes or notes, highlighting the consideration of each issue and not just the outcomes.

13.3 The ethical review process must include at least one independent member (not employed or remunerated by the Licence Holder, zoo operator or zoo) and have varied membership representing an array of different interests (for example, animal behaviourists, veterinary surgeons, members of the local community, ethics advisors). Individuals with particular expertise may be invited to participate on an issue-by-issue basis and not necessarily as full members.

13.4 The ethical review process must always include the zoo's Lead Veterinary Service or a relevant veterinary advisor when issues of animal health and welfare are under discussion.

13.5 The ethical review process must look at all ethical issues related to the operation of the zoo, both human and animal. Examples include (but are not limited to):

- acquisition, transport, movement and disposition of animals, including with reference to their conservation status where applicable

- acquisition of animals from the wild
- invasive husbandry practices
- management of abnormal behaviours
- population management, including breeding and culling policies
- hand-rearing of animals, including permanent separation of offspring prior to independence
- isolation of individuals of social species
- animal experiences
- animal training activities, including purpose and intent
- shows and performances involving animals, including purpose and intent
- on-site events (for example, concerts or events outside of normal operating hours) that may impact animal behaviours or welfare
- emergency euthanasia of animals (excepting for those euthanased on veterinary advice)
- the use and source of live animals as food, considering the welfare of both predators and prey (vertebrates and invertebrates)
- research projects involving animals or human participants (in situ and ex situ)
- collection, transfer, and storage of personal and biological data

13.6 The Licence Holder must make sure that any invasive husbandry practices, for example, pinioning or ear-notching, are subject to ethical review prior to taking place and the justification documented.

13.7 The Licence Holder must be able to demonstrate that they have consulted and considered the outcome of any ethical review when subsequent decisions are made and actioned.

Appendix A: Specialist Exhibits

Preface

The Zoo Licensing Act 1981 applies to all animals kept in licensed zoos. Many of these animals have very different environmental and welfare requirements.

Whilst Sections 1 to 13 of these Standards contain general standards that are applicable to the wide range of types of zoos and their animals, there are additional standards that apply to specific taxonomic groups, and these are covered in the following appendices:

Appendix A1	Invertebrates
Appendix A2	Aquaria
Appendix A3	Reptiles and Amphibians
Appendix A4	Venomous and Poisonous Species
Appendix A5	Aquatic Birds
Appendix A6	Birds of Prey
Appendix A7	Marine Mammals
Appendix A8	Elephants
Appendix A9	Great Apes

These Appendices form part of the Standards and must be reviewed by Licence Holders and zoo operators and, where applicable, the Standards adhered to.

Appendix A1: Invertebrates

General provisions

A1.1 While some collections contain only invertebrates, more often they form part of a more diverse collection. Invertebrates must be afforded the same level of care, welfare and consideration as other taxa housed.

A1.2 As with other taxa, care must be taken to consider the requirements of different species. Where this knowledge is not available within the collection, specialist advice must be sought. Animals must only be housed if adequate facilities and staff knowledge are available. Due diligence must be taken with potentially hazardous species (see Appendix B).

A1.3 Husbandry must be maintained at the same standard across the board in line with other taxa, regardless of their position within an education collection, display collection, or as live food.

A1.4 The Licence Holder must maintain accurate records on invertebrates, where possible. As a minimum, collections must have a species record on all taxa held, and records must be updated regularly. Invertebrate mortality must be monitored and reviewed, as with other taxa.

Additional notes

a) For some species, births and deaths can be difficult to record. In these cases, census or colony counts may be required (see Section 12 on Annual Stock Records)
b) Invertebrate populations can exhibit mortality events and other large swings in population. Where these occur, they must be investigated and any significant findings recorded
c) Record keeping for invertebrates maintained as live food must include the species used, when they arrived/hatched, mortality outside of use as live food, and when they were fed out

The captive environment

A1.5 The Licence Holder must maintain a documented Environmental Management Plan (EMP) for each invertebrate species held within the zoo. The EMP must clearly outline:

(a) the environmental parameters to be monitored for the species kept
(b) the target ranges for each environmental parameter appropriate for the species kept
(c) the method and equipment used to monitor the parameters
(d) the processes to be implemented where monitored parameters deviate outside the defined target ranges

The EMP must be reviewed, and updated (where required), on an annual basis.

Additional notes

a) The environmental parameter ranges must be informed by field data, published literature from a peer-reviewed source, and/or best practice husbandry guidelines, where available
b) Environmental parameters must be appropriate for the species. Where there are doubts in the literature or a lack of natural history data/knowledge, a choice of habitats with different temperatures and relative humidity (and where appropriate, different substrates) must be provided
c) Invertebrates must be given access to a temperature gradient, except in exceptional circumstances (for example, mass rearing of young animals such as spiderlings in small tubes)
d) Water quality and type provided (for example, freshwater, brackish or marine) must be appropriate, where known, for the species - not only for those that are totally aquatic but also those that live or breed in damp conditions or require high levels of humidity
e) Some situations require deviations from simulated natural conditions (for example, medical management), or extremes of natural conditions not considered conducive to the welfare of the species. The EMP must outline the justification for short-term or permanent alterations to these conditions

A1.6 Invertebrates must be given the opportunity to exhibit natural behaviours, such as burrowing, foraging, and feeding, ambulatory behaviours, and flight in some species. Enclosures must be of appropriate design, including height, substrate type and depth, humidity and temperature and light levels to encourage natural behaviours. Stocking densities must be kept at appropriate levels for the taxa.

A1.7 Invertebrates must be protected from contact with potentially toxic chemicals and care must be taken with commonly used cleaning materials (such as insecticides, pesticides, antiparasitic treatments, disinfectants, and sanitisers).

Invertebrates as live food

A1.8 Invertebrates are commonly used as a source of live food for other animals in the collection. In these cases, the Licence Holder must make sure that:

a) similar, good standards of husbandry are maintained for both live food and animals in the main collection
b) the use of invertebrates as live food is subject to ethical review
c) ethical review considers species selection where invertebrates are to be utilised as live feed prey, especially with regard to current knowledge, where it exists, pertaining to sentience in the chosen invertebrate prey species
d) where invertebrates are sourced from the wild as a food source (see Standard 7.19), the acquisition must be subject to ethical review

Healthcare

A1.9 The Licence Holder must consider suitable methods of euthanasia or culling of invertebrates by following the current best practice guidelines.

A1.10 Visual health assessments of new invertebrates (including ova) must be undertaken upon arrival into the collection, and before introduction to the general

collection. A quarantine area or isolation facility must be used prior to introduction to the general collection.

Staff management

A1.11 The Licence Holder must make sure that they have appropriately skilled and trained staff for managing invertebrates.

Appendix A2: Aquaria

Preface

Aquaria typically hold many different species from a diverse range of environments. Aquatic animals are highly adapted through a range of different physiological mechanisms to their specific environmental niches and react adversely to suboptimal conditions. Effective water management techniques and protocols are part of good management practice essential to maintain the high water quality needed to help ensure the health of aquatic animals.

Water quality requirements of different species vary, and it is important that certain parameters are monitored and recorded, and that due care is taken to cater for each species' requirements.

Divers

Where divers are permitted to have access to aquatic animal tanks and pools on the zoo premises, attention should be paid to the Diving at Work Regulations (1997) and the Health and Safety Executive's (HSE's) related Approved Codes of Practice (ACOPS). See also Section 9: Diving Pool Exhibits.

The captive environment

A2.1 Enclosures for aquatic animals must be durable, watertight, non-porous, non-abrasive, non-toxic, and easily cleaned. Water must be provided that is free of harmful pollutants.

A2.2 Enclosures must provide environments well adapted to meet the physical, psychological, and social needs of the species to which they belong, including refuges that allow animals to choose to be out of sight where appropriate.

A2.3 There must be provision of a sufficient life support system to ensure the maintenance of water quality within set parameters that always meet species-specific requirements.

A2.4 The Licence Holder must maintain a documented Environmental Management Plan (EMP) for each aquatic system held within the zoo. The EMP must clearly outline:

a) the environmental parameters to be monitored for the species kept
b) the target ranges for each environmental parameter appropriate for the species kept
c) the method and equipment used to monitor the parameters
d) the processes to be implemented where monitored parameters deviate outside the defined target ranges

The EMP must be reviewed, and updated (where required), on an annual basis. The frequency of testing for each parameter is outlined in Table A2.1:

Table A2.1: Environmental monitoring and recording frequency

(A) New systems or those that have undergone major servicing

Environmental parameter	Details of testing parameter to be assessed	Frequency (routine monitoring)
Water temperature	Water temperature	Daily
Water quality	Minimum of salinity, pH, total ammonia and nitrite	Daily
Water quality	Dissolved oxygen and nitrate	Weekly

(B) Established systems (typically after one month, or when the system is stable)

Environmental parameter	Details of testing parameter to be assessed	Frequency (routine monitoring)
Water temperature	Water temperature	Daily
Water quality	Minimum of salinity, pH, total ammonia, nitrite, nitrate and dissolved oxygen.	Weekly Nitrate, where appropriate could be reduced to fortnightly where justifiable Salinity, frequency of testing is as required to maintain salinity at the defined ranges

Additional consideration
The frequency of testing must be increased where indicated, for example, in response to parameters falling outside of expected ranges or where behavioural or medical concerns are noted.

Additional notes

a) The environmental parameter ranges must be informed by field data, published literature from a peer reviewed source, or best practice husbandry guidelines where available
b) Minimum water quality management parameters that must be included in the EMP are temperature, pH, salinity (where using a saltwater system), Oxidation Reduction Potential (ORP) (where ozonation is used), oxygen saturation, ammonia, nitrite, and nitrate
c) Whilst the EMP documents the ranges for an aquatic system the documentation must be able to demonstrate that the defined environmental parameters meet the environmental needs for all of the species held within that system
d) Processes and procedures must be in place to ensure that water parameters remain optimal for the most sensitive species within an exhibit. There must be

protocols in place for individual systems which identify the level of an environmental parameter which would trigger action, such as a water change

e) EMP must include provision of appropriate lighting, considering individual species requirements (where known)
f) The EMP must include details of testing protocols for water quality parameters. This must include the justification of selected testing equipment or methods, and their associated quality control procedures, including frequency of quality control testing, to ensure that water quality testing is accurate and reflective of the actual values present
g) The EMP must include written instruction on the frequency of testing of each water quality parameter specific to the needs of the system. This must include frequency of water testing for:
    (i) new systems, before the introduction of animals
    (ii) new systems, post introduction of animals
    (iii) established systems with animals present
    (iv) established systems under maintenance
    (v) frequency of testing in response to acute episodes where water quality parameters fall outside of the defined range

h) Some situations require deviations from simulated natural conditions (for example, medical management), or extremes of natural conditions not considered conducive to the welfare of the species. The EMP must outline the justification for short-term or permanent alterations to these conditions

A2.5 Water quality test results must be recorded and maintained such that the pre-determined limits set out in the EMP are clearly distinct and any deviations from those 'normal' defined ranges are addressed, with any actions or responses recorded in the animal's or in the individual system or aquarium's records.

A2.6 Significant changes in environmental conditions must be avoided when moving animals from one system to another. If environmental conditions differ, suitable acclimation methods and time must be employed to reduce potential negative welfare effects from the change in conditions.

A2.7 Where animals are relocated, records must be kept of transportation details and water parameters in the original and new system, including any intermediary stages, to demonstrate appropriate acclimation.

A2.8 In the event of a power cut, emergency backup life support systems must be in place to include, as a minimum, emergency aeration.

A2.9 There must be a written Power Cut Action plan that outlines the steps to take in the short, medium, and long term regarding maintaining critical environmental parameters until full power is restored.

A2.10 Water quality testing of incoming water supplies must be carried out before introduction to animal aquaria to prevent fluctuations in water quality of a magnitude that may compromise the species in the aquarium. The results must be recorded.

Additional notes

a) As values for nitrate, pH, ammonia, and alkalinity, can vary in municipal water supplies over different seasons, incoming water must be tested and recorded

b) If used, incoming seawater supplies must also be tested and recorded for similar reasons
c) Details of testing methods specific to incoming water must be included in the EMP

Healthcare

A2.11 The Licence Holder must be able to demonstrate that health monitoring of individual aquarium inhabitants takes into account the monitoring of water quality.

A2.12 Separate facilities must be available for the quarantine, isolation, or treatment of aquatic animals. These must include separate holding tanks of appropriate dimensions for the full range of species within the collection. Such systems must be isolated from other water systems within the zoo or aquarium.

Additional note

a) For large species such as sharks or situations where, under veterinary instruction, it is in the interests of the animal to remain within the primary aquarium, consideration can be given to a separate holding area within the same life support system being utilised for quarantine, isolation, or treatment. In such cases, the justification must be recorded and be to the satisfaction of the Licensing Authority

A2.13 There must be a documented procedure in place for the capture and transport of aquatic animals.

A2.14 Documented procedures must be established for the monitoring and treatment of wastewater where required. This must include written policies for the management of medicated wastewater.

A2.15 The restraint and anaesthetic requirements for aquatic species differ substantially from those of terrestrial species. There must be adequate facilities and safety protocols for handling the animals which take into consideration the safety of both staff and animals.

Staff management

A2.16 Staff working with aquatic animals must have a full understanding of water chemistry relevant to the species kept in their facilities. This must include, as a minimum, demonstrable understanding of aquatic system management and the operational practices outlined in the EMP, as well as the requirements for the species in their care.

Appendix A3: Reptiles and amphibians

Preface

Reptiles and amphibians are extremely diverse and occur in almost all habitats. Providing generic recommendations for the husbandry of these classes is therefore rarely appropriate.

Husbandry must be informed by a robust understanding of the habitat and biology of the species being cared for. Under prevailing climatic conditions in Britain, most species of non-native reptile and amphibian require a controlled environment to thrive in captivity.

The captive environment

A3.1 The Licence Holder must keep animals in environmentally controlled or semi-controlled vivaria, or in open enclosures inside a larger controlled climate space.

Additional notes

a) For species that would naturally inhabit similar climatic regions to the UK, it may be possible to provide outdoor housing for some or all the year. If animals are maintained outside all year, the Licence Holder must provide species-specific facilities for hibernation where needed
b) Where outdoor housing is used, steps must be taken to prevent native wild reptiles and amphibians from coming into contact with captive animals, and to safeguard enclosure inhabitants from predators and pests
c) Where a reptile or amphibian inhabits a climatic region that is not similar to the UK but there is a perceived positive welfare benefit from the animal having outdoor access which does not compromise the animal physiologically then this may be permitted and any such decisions must be documented in the animal's record, for example, *Centrochelys sulcata* tortoises having outdoor access

A3.2 The Licence Holder must maintain a documented Environmental Management Plan (EMP) for each reptile and amphibian species held within the zoo. The EMP must clearly outline:

a) the environmental parameters to be monitored for the species kept
b) the target ranges for each environmental parameter appropriate for the species kept
c) the method and equipment used to monitor the parameters
d) the processes to be implemented where monitored parameters deviate outside the defined target ranges

The EMP must be reviewed, and updated (where required), on an annual basis. The requirements and frequency of testing for each parameter are outlined in Table A3.1:

Table A3.1: Environmental monitoring and recording frequency

Environmental parameter	Details of testing parameter to be assessed	Frequency (routine monitoring)
Ambient vivarium temperature	• Must be able to demonstrate thermal gradient between 'cool' and 'hot' ends • Minimum of max-min for the 'cool' ends over a 24 hour period • Where the ambient temperature of a local section, or the whole area of the reptile facility demonstrably represents ambient vivarium temperature, this may be considered acceptable • With some modern IR-A bulbs the basking area only is heated meaning there is only a basking spot, this is permissible but must be captured as such in the EMP	Daily
Basking zone temperature	• Temperature at the level of the animal when basking • See A3.23 and A3.27	Monthly
Basking zone spread	• Basking spread – the area where the basking temperature is within the specified range for the specific species at the height of the dorsum of the basking animal • Measures the area of coverage to demonstrate even coverage over the entire animal(s) proportionate to stocking density	Monthly (and following habitat changes or maintenance)
UVI	• Frequency must be increased where UVI drops to within 10% of the lower minimum required UVI for the species, until rectified • See A3.23 and A3.27	Every 1-3 months (frequency must be justified in the EMP if less often than monthly)
Water temperature	For fully or semi-aquatic species only	Daily
Water parameters	Ammonia, nitrite, nitrate, pH, others as applicable for aquatic and semi-aquatic species or life stages (minimum)	Weekly

The frequency of testing the various parameters must be increased where indicated, for example, in response to parameters falling outside of expected ranges or where behavioural or medical concerns are noted.

Additional notes

a) The environmental parameter ranges must be informed by field data, published literature from a peer-reviewed source, and/or best practice husbandry guidelines, where available
b) The EMP must include the provision of appropriate temperatures, humidity, and lighting, considering individual species requirements (where known)
c) Temperature records must demonstrate ambient day and night temperature variations over a 24-hour period as a minimum. In addition, basking temperatures and basking zone expanse (area at the level of the animal) must be recorded.
d) All reptiles and amphibians must have the choice to select their microhabitat within a range of environmental gradients inside the vivaria
e) Some situations require deviations from simulated natural conditions (for example, medical management), or extremes of natural conditions not considered conducive to the welfare of the species. The EMP must outline the justification for short-term or permanent alterations to these conditions

A3.3 For mixed species exhibits or for exhibits holding multiple individuals, the Licence Holder must be able to provide appropriate environmental parameters, for all animals in the enclosure, including, where required, the provision of multiple separate resources. This must be demonstrated in the EMP.

Temperature

A3.4 All reptiles and amphibians must be provided with appropriate thermal gradients, including natural daily and seasonal variations suitable to the species held.

Additional note

a) A thermal gradient is considered a gradual variation of temperature over a distance, not just having one or two cooler spots (for example, shade in a hide) in a warmer enclosure

A3.5 The design and fit of all artificial heat sources must prevent injury to animals. Heat sources must be controlled thermostatically or be regularly adjusted in response to clearly visible monitoring systems (for example, a thermometer, thermal camera, or a data logger).

A3.6 Safe local sources of intense heat (for example, heat pads and basking lamps) must be provided and appropriate in wavelength, for the species that need them. Basking areas (‘basking zone spread’) must be at least equal to the size of the animal in its natural basking position. If there are multiple animals, the basking area must be large enough to allow all animals to bask at the same time or multiple basking areas must be provided.

A3.7 Basking sites must be appropriate for the species. They must be positioned in a way that achieves the correct basking temperature at the point of the dorsum of the basking animal.

A3.8 Water temperature must be specific to the species’ requirements.

A3.9 Where a zoo provides heated rooms to provide ambient temperatures supported by basking lamps (or similar) within each individual vivarium for multiple separate species it may be permissible to record the ambient room temperature rather than the individual vivarium ambient temperature. This must only occur once the Licence Holder has demonstrated the correlation between the ambient room temperature and the ambient individual vivarium temperature and that this method of heat provision provides the specific temperature requirements for each species as defined in the EMP. Where such a method is utilised this must be clearly demonstrated in the EMP and correlation reassessed following any changes to the life support systems in each vivarium.

Lighting and photoperiod

A3.10 All reptiles and amphibians must have lighting of appropriate brightness, photoperiod and type for the species held and provision must include natural daily and seasonal variations.

Additional notes

a) The same considerations must be given to nocturnal and crepuscular species regarding photoperiod and lighting provision
b) Artificially replicated daily and seasonal variation must be controlled (for example, using timers)

A3.11 The Licence Holder must provide ultraviolet (UV) light (both UVA and biologically significant wavelengths of UVB, for example, 290 to 315 nm) at species-specific levels, where known. UV radiation must be provided as a gradient. Unless there is evidence that UV light is not essential for the welfare of the species, the decision not to provide UV light must be documented with justification in the EMP.

A3.12 Ultraviolet Radiation Index (UVI) range must be maintained within a range appropriate for each species. It must be measured using a UVI meter at intervals dictated by the EMP.

Additional notes

a) The Ultraviolet Radiation Index, or UV Index, (UVI) is a standard international measure of ultraviolet radiation. Index values start at zero and can rise above 10. Reptiles and amphibia require different ranges of UVI, with the most commonly used predictor being the ‘Ferguson zones’
b) Where ‘Ferguson zones’ are used in the EMP the actual normal UVI reference range used must also be documented
c) Most glazing materials do not transmit UV light and meshes considerably reduce the transmission; therefore, UV light sources must be installed and positioned to ensure the provision is effective at the level of the animal(s)

A3.13 UV light (UVA and UVB) must be installed in a vivarium so that peak UVI overlaps directly with the basking area (where present). There must be areas in the enclosure where animals can escape UV radiation.

Humidity and ventilation

A3.14 All reptiles and amphibians must be provided with humidity gradients appropriate to the species, including natural daily and seasonal variations.

A3.15 Ventilation must be appropriate for the species.

Additional notes

a) Ventilation must not be curtailed permanently to improve humidity unless it is required as part of husbandry (for example, rain chambers when breeding frogs or snakes that are exhibiting dysecdysis)
b) Where appropriate for the species, hide structures must be used to provide localised areas of higher humidity

Water provision and quality

A3.16 Where water is critical for life support for semi- or fully-aquatic species or a species' life stage, the Licence Holder must make sure that water quality and volume are suitable for the species. They must be maintained and monitored within parameters dictated by the EMP.

A3.17 Water quality and volume must be maintained by regular replacement with suitable water, manual removal of detritus, and by a suitable biological, chemical, or mechanical filtration.

A3.18 All semi-aquatic or aquatic reptiles and amphibians must have sufficient aquatic facilities of appropriate size, depth, and design so that they can perform the activities that they would perform naturally (for example, swimming, diving, and exercise).

A3.19 Semi-aquatic reptiles and amphibians must have access to a land area that allows them to leave and enter the water without difficulty, for example, a shallow slope into the water.

A3.20 Steps must be taken to prevent animals from having contact with toxic chemicals. Consideration must be given to the risk of introducing toxic disinfectant residues during water changes and cleaning enclosures, as well as toxic substances leaching from enclosure furnishings.

A3.21 Where *Batrachochytrium dendrobatidis* or *B. salamandrivorans* or ranavirus status is positive, or unknown in at-risk species present in the zoo, the Licence Holder must ensure that all potentially infected amphibian wastewater must be effectively disinfected, adhering to specific contact times, prior to being discharged into municipal or other waste. Where heavy contamination with detritus or biological matter is present, this must be removed prior to disinfection to ensure the efficacy of the disinfectant.

Environmental monitoring and recording

A3.22 The EMP must clearly state critical maximum and minimum values for all parameters. It must indicate where these might change according to seasonality.

Where critical values are exceeded, these must be recorded, and the mitigative action taken and the results of any such action must also be documented.

A3.23 As a minimum, the Licence Holder must document environmental parameters in the EMP in a format containing the following information, similar to this example (note this is an example of a generic specimen and other formats are acceptable as long as the same information is recorded):

Reptile: Generic species

Terrestrial Parameters	Unit	*Example terrestrial species*	*Example aquatic species*
Basking zone temperature	°C	32.0 – 36.0	-
Basking zone expanse	cm	60 x 20	-
Ambient Max temperature (day)	°C	29.0	-
Ambient Min temperature (day)	°C	27.9	-
Ambient Max temperature (night)	°C	27.0	-
Ambient Min temperature (night)	°C	27.0	-
UVI range across entire enclosure	UV Index	0 – 4.0	-
UVI range within basking zone	UV Index	2.0 – 4.0	-
Humidity range across entire enclosure	%	40 - 60	-

Aquatic Parameters	Unit	*Example terrestrial species*	*Example aquatic species*
Water temperature	°C	-	21.0
Ammonia	mg/l	-	0.03
Nitrite	mg/l	-	0.01
Nitrate	mg/l	-	0.0
pH	-	-	8.2

Additional notes
No areas of increased humidity provided, unless dysecdysis occurs (see specific notes in animal record where used)

Reference source

Author (2023) Defined environmental parameters for example species, A Journal, vol 1, pp 1-4, based on field data collected from Balnibarbi.

Another (2023) Defined environmental parameters for example species, A Journal, vol 2, pp 5-6 based on field data collected from Laputa.

A3.24 Daily visual checks must be performed on all life support systems (for example, lamps, heaters, thermostats, filters, or pumps) to confirm that they are working. Additional monitoring may be required where suitable, for example, UVI meters for ultraviolet bulbs. Faulty equipment must be replaced immediately and appropriate repeat testing of required environmental parameters as per the EMP undertaken.

A3.25 Monitoring must be able to demonstrate that a variety of microhabitats and a range of environmental parameters are available, providing ecologically relevant choice in all enclosures for all reptiles and amphibians.

A3.26 The Licence Holder must monitor, or test, and record all environmental parameters, at suitable intervals as outlined in the EMP.

A3.27 Parameters must be measured at the level of the animal where appropriate (for example, by recording basking temperature and UVI at the level of the basking animal).

A3.28 The Licence Holder must be able to demonstrate an increase in the frequency of the monitoring of environmental parameters, as dictated in the EMP, when required, for example if:

a) an animal or additional individuals are introduced to an enclosure
b) an individual animal has a newly diagnosed medical or behavioural issue
c) there are planned or unplanned changes in environmental parameters (inclusive of seasonality)
d) heating and lighting equipment is replenished or replaced (for example, lamp changes)

A3.29 If events occur that result in excessive noise or vibrations, the Licence Holder must be able to demonstrate that mitigative action has been taken to reduce the impact on the animals.

Furniture and substrates

A3.30 Enough shelters must be provided within the enclosure to ensure that animals do not have to choose between physiological needs and security.

A3.31 Vivaria must be designed to ensure that environmental resources are accessible to all animals at all times if they so choose.

A3.32 Rough surfaces and/or damp areas to aid sloughing must be provided for the species that require them.

A3.33 Enclosures must be spatially complex to facilitate three-dimensional use of the environment. This must include provision for climbing for all terrestrial species,

proportionate to the individual species' natural history, and must not be limited to arboreal species.

A3.34 Substrates of the appropriate type and depth must be provided for burrowing and digging species.

A3.35 All substrates and furnishings for amphibians must be treated as clinical waste due to the risk of pathogen spillover where disease status is unknown or animals test positive for significant diseases (for example, *Batrachochytrium dendrobatidis* or *B. salamandrivorans* and/or ranaviruses).

Enclosures and space requirements

A3.36 Vivaria must be individually marked, whether on or off-show, with labels relevant to the species contained within. Labels must indicate the species name, number of animals held and, for Category 1 or Category 1V venomous species, the potential hazard must be clearly marked.

A3.37 The size of vivaria for reptiles and amphibians must be appropriate to:

a) the life stage of the individual(s)
b) the physiological requirements (for example, be large enough for the full length of the animal to be exposed to each of the extremes of the environmental gradient provided)
c) the normal behavioural needs of the individual(s)
d) the provision of the range of environmental parameters stipulated in the EMP
e) the number of individuals and the sex ratio held within the enclosure

Additional notes

a) Reptiles and amphibians will utilise large spaces if they are correctly allocated
b) The vivaria must be designed to allow the reptile or amphibian to accommodate its entire body in a specific temperature zone or other critical element of the environment provided, to maintain optimum body temperature and overall health; there must be sufficient space for the animal to be able to move to achieve this.

A3.38 Arboreal animals must be provided with enclosures of sufficient height, with facilities that allow the animals to climb, to meet the needs of the species.

A3.39 Snakes must have access to a usable area that allows them to stretch out fully to the length of the animal and to perform any other necessary natural behaviours. Temporary accommodation (for example, off show) may be smaller but time spent in this accommodation must be kept to an absolute minimum and must be for a demonstrable and necessary purpose such as medical treatment or enclosure maintenance.

Additional notes

a) To allow a snake to stretch out fully to the length of the animal the dimensions of the vivaria must be a minimum of 1 by 2/3 by 1/3 the length of the snake (snout to

tail), the dimensions being appropriate to the natural history for the snake, for instance arboreal snakes must have the maximum length in the vertical plane

b) Restricted-sized temporary accommodation must not exceed 14 days unless written justification is provided by the veterinary surgeon on medical or animal welfare grounds

A3.40 Depth of water for crocodilians in permanent housing must allow all inhabitants to fully submerge at the same time without touching each other and for the crocodilians to be able to turn around in the water unimpeded. The depth must be a minimum of 2/3 snout-vent length of the largest crocodilian within the enclosure.

A3.41 Enclosures for amphibians must provide sufficient usable space for the animal to demonstrate normal natural behaviour. Consideration of enclosure size and substrate must take into account the amphibian's need to climb, jump, swim, hide or dig to a depth appropriate for the species.

A3.42 Where animals have seasonal outdoor access, indoor housing must provide for all the animals' needs during the winter period if they are a species that do not hibernate.

A3.43 Entry points into ponds for semi-aquatic species must slope with a gradient of 1 in 3 or less for a substantial part of their length or a shallow step, ledge, or rock, to allow animals to easily leave and enter the water.

Service areas

A3.44 Service areas and passages must be escape-proof and large enough for staff to comfortably work and handle the animals. Access areas to enclosures must be of sufficient size and suitable design to facilitate observation of animals and cleaning.

A3.45 Service areas must be kept free of clutter and handling and catching equipment must be readily available close to enclosures.

A3.46 Service areas, or where a vivarium directly opens into a public space, must be designed to facilitate recapture of animals in the event of escape, providing no refuge areas that would make recapture unnecessarily difficult.

A3.47 There must be dedicated hand washing facilities, including warm water, available for staff.

A3.48 Emergency lighting, automatically activated in the event of power failure, must be installed in service areas where Category 1 or Category 1V venomous species are located.

A3.49 On immediate entry to service areas containing Category 1 or Category 1V venomous reptiles and amphibians, there must be appropriate signage warning of the potential hazard.

Feeding and nutrition

A3.50 Frozen food must be prepared in a way that is suitable to the food item and the animal being fed (for example, the defrosting process must not impact the presentation or palatability or nutritional value of the food item for the animal being fed).

Additional note

a) Some snakes have heat-sensitive pits which aid them in the location of prey. Frozen items that are defrosted to room temperature will often be overlooked by these animals and as such may require additional warming up.

A3.51 Medium to large frozen items (adult mice and larger) must be defrosted in a fridge before being brought up to room temperature if needed.

Additional note

a) By the time some very small food items, for example, new-born rodents or very small fish, are defrosted in a fridge and brought up to room temperature, the food item may be unsuitable for use. In such cases these prey items can be defrosted at ambient temperature; this must be recorded in the animal's record or diet sheet if this method of defrosting is undertaken routinely

A3.52 Food must be offered to coincide with the activity period of the animal (for example, feeding of nocturnal species as late in the day as possible, unless they are kept in a reverse lighting facility).

A3.53 The nutritional quality of commercially bred invertebrates, intended for live food, must be improved by feeding the invertebrates a diet or commercially available product specifically designed for this purpose, a process termed 'gut-loading'.

A3.54 'Dusting', in addition to 'gut loading' in the case of live invertebrates, is an established method for improving the nutritional quality of food by dusting the external aspect of the live invertebrate food species or other food items immediately prior to feeding. If used, dietary supplements must be stored as per the manufacturer's guidelines.

Additional note

a) 'Dusting' must not be carried out as an alternative to 'gut loading'

A3.55 Some reptiles and amphibians may have a seasonal variation in their diets. The Licence Holder must make use of the available evidence to make sure that seasonal dietary changes are reflected on the diet sheet and implemented.

A3.56 When supplying live invertebrate food to reptiles and amphibians the number provided must not exceed that to be eaten and/or excess food must be removed after an appropriate time period, especially where there is potential for the invertebrates to attack and injure the animals within the vivarium.

Healthcare

A3.57 Records must be kept of all individual animals (when individuals can be identified). In addition to the standard information in the Animal Records, records must be kept of environmental parameters, feeding, sloughing, and egg-laying/births for reptiles and amphibians.

A3.58 Husbandry management strategies must be designed to minimize the risk of transmission of pathogens and other biological agents between enclosures and to and from native species.

A3.59 Powder-free and latex-free gloves must be worn when handling any amphibian.

Additional note

a) Specifically, when handling tadpoles, both latex and nitrile gloves have been reported to have adverse effects on tadpoles; as such only vinyl gloves must be considered appropriate for this life stage

A3.60 Reptiles and amphibians must only be handled and transported in environments that are within the desired range of optimal parameters as outlined in the EMP, unless in an emergency or for veterinary treatment.

A3.61 Where reptiles are used as handling animals, the Licence Holder must ensure that:

a) animals have sufficient hides and cover when not being handled
b) outreach activities do not disrupt feeding (for example, not using a snake for outreach the day before or after it is fed and not using the same animal daily)
c) all animals have an adequate period of rest between handling sessions (this will depend on how long the session of outreach is being delivered for)
d) animals are not handled when they are due to or currently shedding their skin, gravid, or diseased
e) handling must not represent any physiological or mechanical risks to the animal
f) amphibians must not be handled by members of the public

A3.62 The Licence Holder must have provision for quarantining new acquisitions. A risk-based approach to quarantine must be adopted and the quarantine length and the pathogens screened for must be dictated by the associated risk of the acquisition.

A3.63 In addition to the required twice-daily checks, formal physical assessments of all reptiles and amphibians must be undertaken and recorded by keepers at least every 3 months.

Additional notes

a) This assessment can be made by weighing the animal
b) For some species, weights may not be appropriate. A body condition score must be used if animals cannot be weighed
c) Exceptions to these physical checks include assessment of the physical condition for some life stages (for example, tadpoles) and housing scenarios where it is not practically possible to do so (for example, free ranging reptiles and amphibians in large, complex biomes). In these instances, the change in frequency must be justified and alternative assessment regimes documented
d) Any concerns raised by the physical check must be recorded and reported to the collection veterinary surgeon

Appendix A4: Venomous and poisonous species

Preface

Where the Standards refer to venomous or poisonous species, this is in relation to 'medically significant' venomous or poisonous species. These are species where the consequence of a bite, sting or poisoning can cause death or serious health complications that require emergency attention from a medical professional. Venomous and poisonous animals both use toxins to defend themselves or subdue prey. Venoms being actively delivered via a physical method (for example, fang, sting, or spine), whereas poisonous animals administer secretions passively, typically through their skin, when another animal touches or ingests it.

When assessing the potential venomous or poisonous hazard in the zoological environment the nature of the animal, the nature of the toxin and the method of delivery are all areas that require consideration.

Where a species is not listed in Category 1 or Category 2 of the ‘hazardous animal categorisation’ list (see Appendix B) due to being new to captivity but is considered a medically significant venomous or poisonous species, then this section applies equally to said new species.

General provisions

A4.1 Where the collection holds Category 1 or Category 2 listed venomous or poisonous species, the Licence Holder must make sure that sufficient, suitably trained staff are always available for routine and non-routine management.

A4.2 Animals must be kept either in solid walled and roofed enclosures with suitable means of escape-proof ventilation, or in enclosures where the walls are of adequate height and design to prevent non-flying animals from escaping or reaching staff or visitors.

A4.3 Viewing panels on enclosures and vivaria must be shatterproof or laminated for added safety.

A4.4 Enclosure design must facilitate a minimal contact approach for routine and non-routine management.

A4.5 Service areas for all species must be isolated from the public, secured with a solid locked door or gate system and only accessible to authorised personnel.

A4.6 On immediate entry to service areas, there must be appropriate warning ‘venomous’ or ‘poisonous’ signage relevant to the species held.

A4.7 Service areas must be escape-proof and clutter-free with good visibility on entering the area (for example, through a viewing window).

A4.8 Service areas must be designed to facilitate recapture if necessary and have no refuge areas that would make safe recapture unnecessarily difficult.

A4.9 Emergency lighting, automatically activated in the event of power failure, must be installed in service areas.

A4.10 Service areas must be appropriately equipped in the immediate vicinity with handling or management equipment specific to the species held. Recapture equipment must be accessible to staff without entering the service area where an escaped animal may be contained.

A4.11 Written protocols must be produced and implemented to make sure that service area access is secure, tamper proof and access can only be made with restricted keys.

A4.12 Access points to enclosures containing venomous or poisonous species must be individually marked with distinct species labels, which must:

a) indicate the species contained within
b) indicate the number of animals housed within
c) clearly identify the potential hazard

A4.13 Enclosures must be kept individually locked and access made available only to authorised and trained staff.

A4.14 Where the collection holds venomous species and there is a risk of envenomation leading to medically significant complications, there must be enough of the appropriate, up to date antivenom, if available. The Licence Holder is responsible for their own antivenom provision, which must be stored either at the zoo or, by agreement, at the nearest hospital or there is a written agreement from the local hospital that they have ready access to the appropriate antivenom for the species held. Antivenom must be stored in accordance with the manufacturer's instructions.

A4.15 The nearest appropriate hospital must be consulted and made aware of the procedure to be followed by the zoo in the event of incidents involving venomous bites, stings, and poisoning.

A4.16 Emergency authorities (for example, fire service and police) must be made aware in advance of any zoo keeping venomous or poisonous species. This must be regularly updated by the zoo concerned, as and when changes occur to locations where venomous or poisonous stock is held.

A4.17 The Licence Holder must make sure that appropriate documented training is provided to all staff who work with venomous and poisonous species.

A4.18 There must be at least an annual documented review process in place to make sure staff remain competent when working with venomous and poisonous species.

A4.19 Written protocols for venomous and poisonous species must be available for the following:

a) safe systems of work, supported with risk assessments, with emphasis on a minimal contact approach
b) actions to be taken in the event of an escape
c) action to be taken in case of venomous bites, stings, or poisoning, including details of first aid measures, emergency contact numbers and clear, appropriate arrangements for medical assistance and notification of the nearest appropriate hospital
d) the safe handling and disposal of faeces and other waste matter where potential envenomation risks are recognised, for instance shed fangs in faeces
e) the safe transport of these animals whatever the purpose of the movement, whether within the collection or to another site
f) health care, safe euthanasia, and post-mortem examination protocols, specifically when dealing with venomous or poisonous anatomical body parts

Annual audits of these written protocols must be undertaken.

A4.20 Lone working of staff with Category 1V venomous species is not recommended and where it occurs must undergo specific risk assessment and development of dedicated safe working practices which are signed off by the Licence Holder.

A4.21 The Licence Holder must ensure that the steps to be taken in an emergency, including the emergency contact details (both internally and externally), are clearly displayed both within the venom service area and at the access point to the venom service area.

A4.22 Operational protocols must be reviewed anytime there is an alteration in infrastructure which results in a potential change in operations, including any new exhibit developments or alterations.

A4.23 All authorised personnel must take part in regular (at least once every year) documented emergency envenomation or poisoning practice sessions (for example, envenomation drill and the application of pressure bandages).

A4.24 Category 1V venomous listed animals must not leave their enclosures for the purpose of activities involving contact with members of the public, and the public must not be allowed access into their enclosures.

A4.25 The Licence Holder must ensure that, either the collection veterinary surgeon or an appointed specialist veterinary surgeon is willing and capable to undertake the health care of the venomous or poisonous species. Where venomous or poisonous species are part of the collection the written programme of preventive and curative veterinary care must have a dedicated section regarding the health care provision for these hazardous animals. This must include protocols for transportation and management of the species when taken off-site to the veterinary surgeon; envenomation policies; and appropriate indemnity insurance that covers said venomous or poisonous species.

Appendix A5: Aquatic birds

Preface

The term **'waterfowl'** refers to birds in the following orders:

- Anseriformes (duck, geese, swans, and screamers)
- Phoenicopteriformes (flamingos)
- Pelecaniformes (pelicans, ibis, herons, spoonbill and hammerkop)
- Ciconiiformes (storks), and
- Gruiformes (cranes, trumpeters, and rails)

The term **'marine birds'** refers to the following orders:

- Sphenisciformes (penguins)
- Charadriiformes (shorebirds, gulls, terns, and auks)
- Suliformes (gannets and cormorants)

The captive environment

A5.1 Ponds must be of sufficient size to ensure that the available surface area and volume provide for the specific welfare needs of all individuals of the species held within an enclosure. Allowing, where appropriate, swimming, diving, wading, and feeding or foraging according to species-specific behavioural and ecological needs.

A5.2 Birds must be able to enter and leave the water without difficulty. Entry points into ponds must slope with a gradient of 1 in 3 or less for a substantial part of their length. Long-legged birds (for example, flamingos) must not be forced to 'step up' or 'step down' into water. A shallow slope at key exit and entry points into a pool must be present. A shallower graduated easy exit from the pool must be provided for young avian species where drowning is a risk, for instance penguins.

A5.3 The Licence Holder must maintain a documented Environmental Management Plan (EMP) for each aquatic bird species held within the zoo. The EMP must clearly outline:

a) the environmental parameters to be monitored for the species kept
b) the target ranges for each environmental parameter appropriate for the species kept
c) the method and equipment used to monitor the parameters
d) the processes to be implemented where monitored parameters deviate outside the defined target ranges

The EMP must be reviewed, and updated (where required), on an annual basis.

Additional notes

a) The environmental parameter ranges must be informed by field data, published literature from a peer-reviewed source, and/or best practice husbandry guidelines, where available
b) When birds are housed indoors under artificial light, species and seasonal appropriate lighting (including UV where necessary) must be provided
c) The nature of water quality testing varies considerably depending on the species held and the nature of the enclosures and water management systems; as such the

nature and frequency of testing must be determined by the unique needs of each zoo's facility

d) Where water quality is essential for the bird to thrive, parameters, as defined in the EMP, must be assessed and recorded at the frequencies described in the EMP, and records maintained where actions are taken in response to parameters falling outside of the defined ranges for the species. It is noted that for most aquatic bird species water quality is not considered a critical life support requirement
e) Total coliform counts may be considered as part of the assessment of water quality, especially where concerns of pathogen build-up or contamination are identified as possible risks
f) Antarctic ice-dwelling penguin species (for instance, emperor and Adélie penguins) need year-round cooling and must be provided with specialised closed environment exhibits with appropriately low temperatures, filtered air and high ventilation rates as defined in the EMP

A5.4 The Licence Holder must be able to demonstrate that water management systems and maintenance programmes provide a safe and appropriate environment for the species kept. Adequate filtration must be provided proportionate to the water management system utilised, as the particular requirements for closed systems differ greatly from open water systems.

Additional notes

a) Natural or unfiltered water ponds are acceptable (for example, for Anseriformes) but care must be taken to make sure pathogenic organism or chemical build-up does not occur as determined in the EMP, for instance by regular testing of water quality
b) Water flow systems within an enclosure that provide in and out-flow are preferred, depending on the species housed and style of enclosure, but still must be subject to regular water quality checks (especially if water flows from one enclosure directly into another). Flow-through ponds are ideal, provided the flow can be maintained year-round and the flow is sufficient to change the water frequently
c) Consideration must be given to the accumulation of silt where the system is fed by natural streams passing through the zoo, as well as the risk from upstream contamination

A5.5 Where water flows from one enclosure to another as part of the water management system, the Licence Holder must be able to demonstrate proactive disease risk assessments, disease surveillance processes and preventive management strategies to ensure the health of any birds located in adjacent ponds with shared water flow.

A5.6 Health care programmes, stocking densities and enclosure design must demonstrate consideration of the risks posed by wild waterfowl visiting the collection. This must include consideration of disease risks, contamination of water supplies or aggression towards captive birds.

A5.7 Birds must be provided with nest boxes or appropriate nesting substrate for the species, especially where mixed sexes are maintained together. The design of land space must make sure that flooding of nests and nest boxes is avoided unless controlled flooding is required for nesting (for example, flamingo nesting).

A5.8 The Licence Holder must be able to demonstrate that the welfare of each individual animal has been taken into consideration when mixing aquatic birds with other avian or mammalian species.

Feeding and nutrition

A5.9 Areas of grass must be made available for grazing species of aquatic bird. Supplementary feeding of grazing species with appropriate pellets or grain must be provided where necessary dependent upon season, weather, and amount or quality of grazing.

Healthcare

A5.10 The Licence Holder must have an ethical policy and documented code of practice regarding flight restraint for birds that are held in open-topped enclosures which must have regard for the potential physical and behavioural impact of such procedures on the welfare of each taxonomic group.

Additional note

a) Methods of achieving flight-restraint that involve mutilation (for example, pinioning) must undergo exhaustive ethical and welfare review before being implemented. If it is not possible – for financial, practical, or other reasons – for the zoo to contain birds safely and humanely without mutilation, the zoo must carefully consider the justification of its use and whether the species should be retained within the zoo collection.

A5.11 Ground substrate, in both the enclosure and areas of water, must be selected and maintained to mitigate excessive physical breakdown of soil structure under load ('poaching'), and the development of foot problems including pododermatitis ('bumblefoot').

A5.12 The Licence Holder must ensure that the written veterinary health care plan includes the regular assessment and documentation of foot health and actions taken where problems are noted.

A5.13 Where migratory wild bird populations may be present, the Licence Holder must have a policy whereby the potential risks of contamination, and disease spread, are reasonably contained.

Health and safety

A5.14 The Licence Holder must ensure that the written veterinary health care plan includes the actions to be taken during an outbreak of avian influenza and the systems implemented for the safe visitation by the public to the animal collection (if permitted) during this time.

Additional notes

a) This must include:
    a) details of biosecurity measures to be put in place
    b) disinfectant selection and concentrations to be used
    c) appropriate PPE selection and safe operational protocols
    d) any other legislative controls that may be required by Government (updated each time there is a national response where controls change)

Appendix A6: Birds of prey

Preface

Birds of prey (Accipitriformes, Cathartiformes, Strigiformes and Falconiformes) are kept in zoos in a variety of ways and for a variety of reasons, including:

- Within aviaries; where birds experience relative freedom of movement and are kept for display and captive breeding
- For flying demonstrations; where birds, kept in aviaries or tethered, are free flown regularly for the public
- Permanently disabled wild birds; ineligible for release are retained for educational or captive breeding purposes
- Sick or injured wild birds; kept for triage, treatment, rehabilitation, and where possible release

Some birds of prey in zoos may be subject to control under several different pieces of legislation, such as the Wildlife and Countryside Act 1981 and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Legislation concerning welfare, animal health, travel and veterinary treatment must be considered.

General provisions

A6.1 The Licence Holder must be able to demonstrate that the husbandry practices employed for the particular management systems utilised for the bird of prey species in their care, including bird training where appropriate, meet the welfare needs of the birds. Husbandry practices will vary according to the rationale and requirements for maintaining the species.

The captive environment

Aviaries

A6.2 Aviaries must allow birds to fly, and aviary design and size must be appropriate for the species. For example, large vultures are heavy-landing birds and need enough space and a suitable substrate to land without causing injury.

A6.3 Aviary construction, materials, and maintenance must remove or minimise the risk of plumage damage or bodily injuries.

A6.4 Enclosure barriers must prevent access of birds between aviaries or contact between them unless the aviaries are being used for compatibility assessment prior to mixing.

A6.5 Aviaries must be designed to minimise cross contamination by soiling, faeces, or water drainage.

A6.6 Each aviary must have a variety of perches, suitable for the species kept, that are varied in width, texture, height, and location. Within an aviary perches must be

located and designed to ensure birds have choice, access to privacy from public view, shelter, and encourage the effective use of the whole aviary.

Additional notes

a) Consideration must be given to placing some of the perches in locations to promote maximal flying distance whilst also considering the complexity of the aviary and the choices available to the birds within
b) Aviaries must provide perches in locations suitable for the species, for example:
    (i) many raptors prefer to be at height and so suitable high vantage points must be provided
    (ii) other species, many owls for example, require perches in boxes and/or other structures that emulate hollow trees that are away from public view
    (iii) for more 'terrestrial' species, for example snowy owls, consideration must be given to providing low level perches in addition to higher perches

A6.7 Perches must be maintained in a hygienic state, disinfected as required (using approved disinfectants), and changed when necessary.

A6.8 Aviaries must include refuges with at least one solid or screened wall, and birds must have the opportunity to move away from the view of the public and/or animals in adjacent enclosures.

A6.9 Aviary floors must be covered with an appropriate substrate suitable for the physical welfare of the birds. The floor and substrates must allow the implementation of effective hygiene measures that will prevent the uncontrolled build-up of pathogens.

A6.10 The Licence Holder must be able to demonstrate that the welfare needs of different birds of prey species are considered with regard to the location, aspect and view from/to aviaries.

Tethering

A6.11 The tethering of birds of prey as a routine management practice must be phased out in all zoological collections by the 1 January 2030. Following this date, all birds must be housed ('free-lofted') in designated suitable aviaries.

Additional notes

a) A **'tethered bird'**, is defined in the Standards as a bird that is fixed (usually by anklets and leather straps called jesses) to a permanent ground anchor or perch or glove that prevents it from flying-freely, this includes rail systems, drag tethers, cables and creances
b) **'Tethering as a routine management practice'** is defined in the Standards, to be the permanent or semi-permanent tethering of a bird of prey for a cumulative period greater than four hours in any 24-hour period

A6.12 Following the 1 January 2030, limited or temporary tethering is permitted for up to a cumulative maximum of 4 hours in any 24-hour period as a management tool that benefits the bird, in the following circumstances:

a) where a bird is being free-flown on the same day that it has been tethered as part of pre-flight preparation and cool-down period post-flying (for example, used in a free-flying display or privately flown)
b) as part of the documented training programme; either as a period of initial training for a young bird or for retraining older birds after periods of non-handling
c) during routine daily husbandry practices such as cleaning and weighing of birds
d) when securing birds during transport
e) on a glove or a creance when on view to the public, for example for training and/or desensitisation
f) when under veterinary treatment and/or rehabilitation for a period of time as deemed necessary by the veterinary surgeon. Evidence must be retained as to the medical rationale for tethering and/or
g) use as an emergency restraint measure (for example, in the case of a damaged aviary). This period must be kept to a minimum and if greater than 4 hours then all efforts must be made to source alternative temporary accommodation, where practicable

Additional note

a) Following the 1 January 2030, tethering is not permitted in the following circumstances:

    a) to permanently house a bird in a weathering
    b) birds must never be tethered to a block, perch or rail system on view to the public at any time (including during training)
    c) where birds are tethered solely for the purpose of display to members of the public
    d) as part of outreach activities where a bird is not planned to be flown on the same day

A6.13 Tethering exceeding a cumulative 4-hour duration in any 24-hour period is not permitted following the 1 January 2030, except:

    a) during training, where the training period must not exceed the number of weeks, within one year, as defined in Table A6.1, or
    b) when under veterinary treatment and/or rehabilitation for a period of time as deemed necessary by the veterinary surgeon. Evidence must be retained as to the medical rationale for tethering

Table A6.1 Permitted tethering times for training purposes

Method: Glove and creance only

Type	Example	Period up to
Small owls (<400g)	Long-eared owl, barn owl	3 weeks
Medium & large owls (>400g)	Spectacled owl, eagle owls	3 weeks
Kites	All species	3 weeks
Small vultures (<2000g)	Turkey vulture, hooded vulture	3 weeks
Large vultures (>2000g)	White-backed, Rüppell's	6 weeks
'Terrestrial' display birds	Caracara, similar species	4 weeks

Comments owls, kites, and small vultures: controlled weight reduction and desensitising to occur in the aviary and on the glove. For large vultures and 'terrestrial' display birds, controlled weight reduction and desensitising to occur in the aviary and allow increased time in the flying arena. For all species the creance is permitted to ensure safe and appropriate response prior to free flight status.

Method: Glove, creance and perch

Type	Example	Period up to
Small falcons (<300g)	Kestrel, merlin	6 weeks
Medium & large falcons (>300g)	Peregrine, gyr.	8 weeks
Hawks and Buteos	Harris' hawk, buzzard	8 weeks
Small eagles (<2000g)	Wahlberg's eagle	10 weeks
Large eagles (>2000g)	African fish, bald, white-tailed eagles	12 weeks

Comments: to reduce the risk of trauma during the desensitising process and allow incremental exposure to stimuli. To safely gauge appetite, and to establish and actively manage target weights. To ensure the safe and appropriate response prior to free flight status.

A6.14 During initial training/retraining, birds must be considered by their trainer to be sufficiently steady, before they are exposed to members of the public and other novel situations/stimuli.

A6.15 Owls, kites, vultures, caracaras and secretary birds must not be tethered, other than when using the creance (used only during flight training) and/or the glove (for

handling, conducting health checks, and during free-flying management). They must be free-lofted and directly flown from aviaries or carried to the flight demonstration area.

Additional note

a) Exceptions are only permitted in circumstances where it is deemed appropriate for the welfare of the bird and only in accordance with the permitted reasons described in A6.12 (e), (f) and (g)

A6.16 Permanently, physically disabled birds must not be tethered, other than the use of creance and/or glove where appropriate. Perching design in aviaries must reflect individual ability. Birds that are incapable of flight must have accessible perches or ramps that avoid injury should the bird jump to the ground.

A6.17 All tethered birds must have their own corresponding aviaries available for use.

A6.18 Birds must be free-lofted for a minimum and continuous period of four months out of any 12-month period.

A6.19 Tethered birds must always be provided with appropriate protection from extremes of weather, for example by the provision of shade, refuge, or heat (to minimise the risk of wing tip oedema), or there must be written policies implemented to immediately remove the birds to a suitable and secure area when required.

A6.20 For species not naturally adapted to cold or wet climates, tethered birds must have effective supplementary heating during October to April or where temperatures are less than 5^{o}C, such that the birds immediate air space is maintained above 5^{o}C. If supplementary heating is unavailable, the birds must be free-lofted in suitable housing instead.

A6.21 Where birds are tethered overnight as part of a documented training or veterinary treatment programme they must be moved to protected premises to ensure that they are protected from attack by predators, including other tethered birds.

A6.22 Tethered birds must not be left shut indoors or kept away from natural sunlight any longer than is necessary to ensure their protection from any inclement weather.

A6.23 Tethered birds must not be in direct view of other birds being free-flown.

A6.24 Where birds are tethered, the Licence Holder must produce and implement a Tethering Policy. This document must clearly detail:

a) the justification why birds are tethered within the collection
b) what ‘permitted reasons’ are utilised
c) how long the birds are typically tethered for during a 24-hour period
d) typical training schedules and predicted time periods for birds being trained or re-trained whilst using the tether
e) which is their normal, designated aviary

A6.25 After the 1 January 2030, where birds are tethered, the Licence Holder must produce a documented Individual Training Programme for each bird. This must include:

a) justification for placing the bird on the tether
b) the permitted time period for the individual bird to be on tether as per Table A6.1
c) the expected duration of the individual bird's training programme to a free-flight status (flying without a tether)
d) the start and end dates of permanent or semi-permanent tethering utilised whilst training the bird, as outlined in Table A6.1, which must be recorded for each individual bird's training or re-training period
e) the start date and end date of the annual four-month continuous free-lofted period which must also be recorded for each individual bird

A6.26 After the 1 January 2030, once training is complete, where tethering exceeds 4 hours within any 24-hour period the duration and rationale must be recorded, and the justification must be compliant with the Standards, specifically A6.13(b).

A6.27 Prior to the 1 January 2030, tethered birds must be flown at least 5 days a week, unless they are tethered under direct veterinary treatment and supervision or during initial periods of handling or training. Written evidence must be available to demonstrate that birds have been flown 5 days a week. Reasons for not flying 5 days a week must be justified and recorded (for example, bad weather). If for whatever reason a bird is unable to be flown for more than 4 consecutive days, it must be free-lofted.

Healthcare

A6.28 Tethered birds must have daily written records of their weight and condition.

A6.29 Trained, in-training, and/or free-lofted birds must have their weight and body condition checked regularly, at least weekly unless they are in a breeding situation, in moult or a situation where weight and body condition assessment may compromise the bird.

A6.30 The Licence Holder must ensure that gloves, bags, and associated equipment used by bird staff are managed hygienically to prevent transfer of infection or contamination from bird to bird, human to bird, or bird to human.

Staff management

A6.31 The Licence Holder must ensure that keepers are trained and competent in modern and up-to-date training methods, handling techniques, and maintenance of equipment for birds of prey.

A6.32 The Licence Holder must ensure that keepers and flying display demonstrators coming into direct contact with the public are trained so that they can pass on correct and up-to-date information about the birds to the watching public. This must include individual information and wider conservation issues relevant to the species or group being displayed.

Public safety

A6.33 The Licence Holder must ensure that all birds used for flying displays are trained and flown by, or under the supervision of, experienced handlers.

A6.34 The Licensing Authority must be notified as soon as possible and, in any case, no later than 24 hours after the escape from the perimeter of the zoo of any wild species of animal.

Additional notes

a) Regarding the escapes of birds in free-flying displays or similar controlled flying exercises, it is recognised that birds sometimes fly off or elevate to a height that they can no longer be seen (‘speck out’). In such cases, if the bird remains under the partial control of the operator and its whereabouts are known (visual, GPS or other method) and it has been outside of the zoo perimeter for a period of less than 24 hours, this does not need to be reported to the Licensing Authority
b) Where a free-flying bird does escape in an uncontrolled manner (for example, wind damage to an aviary, snapped or poorly tied tether) or for a period of more than 24 hours from a controlled flight, then the Licence Holder must adhere to the usual reporting structure required for an escaped animal that has left the perimeter of the zoo

A6.35 Where bird of prey handling experiences or flying displays with the public take place, risk assessments and records of the experiences must be maintained.

Appendix A7: Marine mammals

Preface

This Appendix covers marine mammals, that are primarily aquatic, belonging to the families Odobenidae, Otariidae, Phocidae, Mustelidae and the order Artiodactyla (formerly Cetacea, now the clade is referred to as Cetartiodactyla), and are kept in zoos in a variety of ways and for a variety of reasons, including:

- enclosures, where marine mammals are kept for display and possible captive breeding
- enclosures where they are used in educational demonstrations regularly for the general public
- permanently disabled marine mammals retained for educational or captive breeding purposes
- sick or injured wild marine mammals kept for triage, treatment, rehabilitation, and release (or euthanasia, where indicated)

Licence Holders and operators are encouraged to refer to relevant management guidelines for marine mammals produced by the European Association of Zoos and Aquaria (EAZA) and the European Association for Aquatic Mammals (EAAM).

Cetaceans (Cetartiodactyla)

Cetaceans (whales, dolphins and porpoises) have not been kept in UK zoos or aquariums since 1993. There are no facilities currently in the UK considered to be of a suitable size and design to be able to hold captive cetaceans nor meet the complex physical and social needs for these species. The primary reference reviewing captive management and its historical challenges is Klinowska and Brown's Review of Dolphinaria (1986).

The captive environment

Enclosures

A7.1 As these marine mammal species are primarily aquatic they must be provided with the necessary water space, both in length and depth, appropriate to the species to promote natural behaviour.

Additional note

a) As a minimum space provision the EAZA and EAAM management guidelines will be utilised to assess minimum 'necessary water space' and must be complied with by 1 January 2030

A7.2 All aquatic species that regularly come out of the water, must have a sufficient land area that provides each animal with an individual resting space and allows space for additional training areas, including areas out of public view.

Additional note

a) As a minimum space provision the EAZA and EAAM management guidelines will be utilised to assess minimum ‘sufficient land area’ and must be complied with by 1 January 2030

A7.3 Additional accommodation, which includes a pool, must be available so the Licence Holder can segregate animals if required. This includes temporary separation for post-natal management of pinnipeds and their pups, for training purposes (where applicable), and/or for medical management.

A7.4 Pool and land surfaces must be designed to prevent injury and, where artificial materials are utilised, must have a durable, non-toxic, non-porous, waterproof finish, and, where species require it, must be coloured to reduce glare. In the case of pinnipeds, pool walls must be smooth to prevent injury.

Additional notes

a) Natural land surfaces, including sand, pebbles or vegetation, are acceptable, provided the areas can be maintained in a hygienic manner and appropriate drainage is in place
b) Consideration must be given to substrate selection and potential problems from ingestion as well as any potential impact on filtration systems
c) Highly reflective surfaces in pinniped enclosures must be avoided as they can lead to ocular discomfort and potential disease. Evidence must be available that this has been considered in pool design and colouring

Environmental parameters

A7.5 The Licence Holder must maintain a documented Environmental Management Plan (EMP) for each marine mammal species held within the zoo. The EMP must clearly outline:

(a) the environmental parameters to be monitored for the species kept
(b) the target ranges for each environmental parameter appropriate for the species kept
(c) the method and equipment used to monitor the parameters
(d) the processes to be implemented where monitored parameters deviate outside the defined target ranges

The EMP must be reviewed, and updated (where required), on an annual basis. The requirements and frequency of testing for each parameter are outlined in Table A7.1:

Table A7.1: Environmental monitoring and recording frequency

Environmental parameter	Details of testing parameter to be assessed	Frequency (routine monitoring)
Ambient temperature	Temperature	Daily
Water temperature	Temperature	Daily
Water quality	pH	Daily
Water quality	Salinity	At least weekly
Water quality	Chlorine or Oxidation Reduction Potential (ORP) (where present)	Daily (Twice daily review preferred, if automated systems present)
Water quality	Total Coliform Counts	Monthly (for temporary accommodation or rehabilitation centres with flow through or dump and fill systems this is recommended only)

The frequency of testing the various parameters must be increased where indicated, for example, in response to parameters falling outside of expected ranges, where there have been substantial changes or modification to the water system, or where behavioural or medical concerns are noted.

Additional notes

a) The environmental parameter ranges must be informed by field data, published literature from a peer-reviewed source, and/or best practice husbandry guidelines, where available

b) Environmental temperatures must be appropriate for the species, with consideration of upper limits where the specific marine mammal is no longer able to behaviourally adjust temperatures and where active support is required, for example, provision of access to water or water misting systems

c) Wind chill factors must be taken into account when considering the environmental temperatures of outdoor enclosures

d) Minimum expected water quality management parameters that must be included in the EMP include:

(i) temperature (both external and water)
(ii) salinity
(iii) chlorine (where used)
(iv) pH
(v) oxidation-reduction potential (ORP) (where ozone or redox is used)
(vi) coliform counts
(vii) any other microbiological load markers as required for the system

Water management

A7.6 The Licence Holder must be able to demonstrate that water management systems and maintenance programmes provide a safe and appropriate environment for the species kept. Adequate filtration must be provided proportionate to the water management system utilised, as the requirements for closed systems differ greatly from open water systems.

A7.7 Marine mammal species are specifically adapted to salt water and must be maintained in a saltwater environment unless the Licence Holder is able to justify that welfare is enhanced with a net positive benefit for the marine mammals where they are maintained in a freshwater or natural lake system.

A7.8 Water quality must be assessed and recorded regularly, and records maintained where actions are taken in response to parameters falling outside of the defined ranges for the species.

A7.9 Daily visual checks must be made on water quality. Where water quality visually looks poor (for example, evidence of algal or bacterial growth or increased particulate matter) additional assessments to the routine water quality testing must be instigated and steps taken to address any issues noted.

A7.10 Where chemicals are used the final concentration of the mixed product in the water must be non-toxic and non-irritant. Systems must be regularly checked for leaks or malfunction and alarm systems should be installed to detect gas escapes, where ozone is utilised in the system. Any concentrated liquid disinfectants must be thoroughly rinsed away from surfaces before animals are allowed to access them.

A7.11 Where water is not supplied from the mains, incoming water must be regularly assessed to demonstrate baseline water quality parameters.

A7.12 Where automated measurement systems are installed, the accuracy must be regularly checked and calibrated against manual systems.

A7.13 The method of wastewater disposal from closed or fill-and-empty systems must be regularly assessed. There must be documented evidence that water discharge is carried out lawfully in relation to environmental and public safety.

Staff management

A7.14 Zoo staff must have a thorough level of understanding of water systems and water quality monitoring. Appropriate training and continuous education of staff must be provided to keep them up-to-date with any advances in water filtration systems. Training records must be maintained.

Public safety

A7.15 Standard operating procedures and related policies must include written processes to manage risk and include actions to be taken in the event of an incident (for example, how to drain pools quickly (within hours), the provision of alternative temporary accommodation for animals, evacuation plans).

A7.16 Standard operating procedures and risk assessments must be in place where marine mammal animal contact experiences are offered (see Section 9). These must include:

a) documented assessment of the severity and possibility of a marine mammal bite injury and its management
b) sufficient and adequate staff supervision at all times in animal contact areas
c) general dangers of accessing aquatic environments
d) demonstration of appropriate disease surveillance related to the species of marine mammal utilised in the animal experience (in particular, zoonoses)
e) social compatibility of animals used and potential seasonal changes in behaviour
f) handling of animal food if public feeding is permitted

Appendix A8: Elephants

Preface

This is an updated and amended version of Appendix 8 of the Secretary of State's Standards of Modern Zoo Practice (2017). These changes have resulted from consultation with the Elephant Welfare Group (EWG) and the UK Zoos Expert Committee. They reflect:

- evidence based results from the 10-year report of the EWG submitted to Defra in June 2021
- the necessity to continue to collect data on elephant health and welfare using the tools developed by the EWG.

When considering further recommendations for zoos, inspectors may refer to the current Management Guidelines for the Welfare of Zoo Animals: Elephants (British and Irish Association of Zoos and Aquariums (BIAZA)).

General provisions

Long-Term Management Plan (LTMP)

A8.1 All elephant holding institutions must produce a documented Long-Term Management Plan (LTMP) for the elephant collection, which must be regularly reviewed and updated at least once every 5 years or after any significant event. The LTMP must cover at least the next 30 year period of care and the following points:

a) the purpose of the collection (for example, breeding herd, bachelor group, retirement facility for non-breeding animals)
b) any proposed changes in management systems
c) proposed breeding management (if applicable):
    (i) where natural breeding is planned, the Licence Holder must have evidence that breeding will occur within stable multi-generational herds which include an adult bull or must document how they aim to achieve this in a practicable timeframe
    (ii) if artificial insemination is considered necessary, then this must be subject to ethical review
    (iii) if the herd is non-breeding, for example, bachelor herd
d) the required space that will be sufficient to accommodate offspring
e) herd compatibility details - the LTMP must include an assessment of social structure and compatibility of elephants housed in the zoo and describe actions to be taken to address issues identified which may include transfers to other institutions
f) financial provision for animal care
g) long-term enclosure development planning
h) management systems adopted
i) elephant training programme
j) staff training programme
k) zoo management structure relative to elephants
l) exit strategy should the collection make the decision not to keep elephants

Individual Welfare Plan (IWP)

A8.2 An Individual Welfare Plan (IWP) must be produced for each elephant. This plan must be regularly reviewed and updated, at least yearly or after any significant event. This document must be produced for each individual elephant and contain, as a minimum, the following:

a) healthcare plan
b) diet and nutrition plan
c) training programme
d) health and welfare monitoring data using the tools developed by the EWG
e) behaviour profile
f) enrichment plan
g) details of any behavioural issues and mitigation plan
h) exercise plan
i) breeding management plan (where applicable)
j) geriatric management plan (where applicable)
k) lone elephant management plan (where applicable)

The captive environment

Social grouping

A8.3 Transfers must be subject to documented ethical review and must consider the health and welfare impacts on individuals (including associated heightened mortality for several years after transfer), their current group and the proposed individuals or groups in the new facility.

A8.4 When cows are transferred, dependent offspring must be transferred with their mothers. Young animals must not be transferred until over 4 years of age.

A8.5 The Licence Holder must make sure that the LTMP prioritises that cows remain with their maternal herd, and, in mixed-sex facilities, bulls have the opportunity for socialisation with the matriarchal herd.

A8.6 Where there are unstable herds, a clear timeline must be put in place in the LTMP to achieve a stable herd. Evidence and regular review demonstrating efforts to achieve this (or that this has already been achieved) must be documented.

A8.7 The LTMP must consider space, compatibility, and constraints on individual free movements. If these limit the facility's capacity to maintain an age-graded, kin-structured unit, then breeding must not be considered.

A8.8 Bulls must stay with the maternal herd until puberty or maternal/matriarchal rejection.

A8.9 Elephants (both bulls and cows) must have an unrestricted opportunity (either directly or through a barrier, when separated) for physical contact with other members of the herd at all times. They must also have the opportunity to get away from other elephants if desired. Due consideration must be given to compatibility and safety of all elephants, especially where bulls are in musth.

Additional notes

a) Bull elephants can be difficult to manage (particularly in musth) and are not always compatible with cows. Provision must be made for them to be separated from cows and other bulls when necessary
b) Individual elephants must not be separated except for management or health purposes, and this must be kept to a minimum and the behaviour of the animal monitored for signs of undue distress. There must be a written assessment document providing details on any separations that occur
c) Where compatibility issues between elephants are identified, these must be assessed and described in the LTMP for the herd. The Licence Holder must keep records of the steps taken to try to resolve these issues, and plans (with time frames) should these steps prove unsuccessful
d) All elephants must be able to get away from other elephants if desired, through use of space and visual or physical barriers in the enclosure

A8.10 Bulls must have the opportunity for social interaction with other elephants throughout their lives.

A8.11 African and Asian elephants must never be mixed in the same social grouping.

Enclosures

A8.12 The Licence Holder must provide indoor and outdoor accommodation for all elephants, with access to both at all times, allowing the elephants choice on where they spend their time. Restricted access to one or the other is permitted during routine cleaning, maintenance, exceptional weather conditions, safety or security concerns, or under veterinary instruction.

A8.13 The Licence Holder must make sure that both indoor and outdoor accommodation provide the opportunity for elephants to demonstrate natural behaviours at all times over a 24-hour period, including but not limited to: locomotion, grazing, browsing, bathing, dustbathing, digging and exploration. Access to such facilities can be prohibited during routine husbandry and maintenance, and during extreme weather situations or on the advice of the veterinary surgeon where applicable.

A8.14 Elephants in all indoor herd facilities must have at least 600 square meters of available space for four, or fewer, animals. This must be increased by at least 100 square metres for each additional animal over two years old. Indoor bull facilities, if separate, must be at least 320 square metres in area for each bull. In exceptional situations where a single cow is being kept, the minimum size must be at least 320 square metres. All collections must meet these minimum requirements by 1 January 2040.

A8.15 Indoor areas must be large enough to accommodate any future changes to group size, as outlined in LTMP, because of breeding or acquisition.

A8.16 The Licence Holder must evaluate whether all the facilities provided to the elephants are being used and, if not, make changes to increase usage. The overall space requirement in A8.14 must be accessible to all animals and also provide areas for individuals to choose to be together or apart.

A8.17 Concrete, rubber or tile flooring for indoor enclosures as a sole substrate can cause foot and joint problems for elephants. Enclosures must use alternative substrates

and minimise the use of concrete in small, dedicated areas with low footfall, for example, pools, wash-down areas, or other similar facilities.

A8.18 Deep, coarse sand must be the primary indoor substrate and must be of such a depth that it can be maintained to prevent dust and pooling of liquids and must be regularly turned to prevent compaction. It must cover the entirety of the sleeping area to encourage natural behaviours important for good welfare, such as recumbent sleep.

A8.19 Outdoor areas for bulls and cows must provide all animals with a minimum shared space of 20,000 square metres (2 hectares) for five or fewer group-living adults throughout the year. This must be increased by at least 2,500 square metres for each additional animal over 2 years old. All collections must meet these minimum requirements by 1 January 2040.

A8.20 Outdoor areas for bulls and cows must be complex enough to encourage walking, exploration, grazing, foraging, social interaction, and maintenance behaviours (for example, dustbathing). Documented assessment of elephant use of outdoor areas must be maintained.

A8.21 The outdoor area must provide all elephants with access at the same time to shelter that provides protection from extremes of sunlight, wind, and rain.

A8.22 If the indoor house is used as the primary shelter, there must be additional shelter provided outside that may be used if the indoor area access is restricted for husbandry or management reasons.

A8.23 Outside substrates must be primarily natural (for example, soil, sand, or grass) with good drainage. Provision for all-weather/season outdoor access must be available.

A8.24 Elephants must be provided with the opportunity to bathe and, with both herd and bull outdoor enclosures they must contain at least one pool. Pools must be deep enough for elephants to fully submerge, have multiple entry and exit points that have gentle slopes, non-slip surfaces and be heated, if necessary, to encourage use.

A8.25 If animals cannot have access to the pool because of poor weather, or for management or veterinary reasons, opportunities for bathing must be provided. This may be in the form of sprinklers or showers.

A8.26 Elephants must be provided with opportunities to have dust baths and mud wallows, unless not feasible because of extreme weather conditions.

A8.27 Indoor area temperatures must not be less than 15ºC (range 15-18ºC recommended) with an area able to be maintained at 21ºC for sick or debilitated animals.

Feeding and nutrition

A8.28 Food provision must be scattered, diverse, opportunistic and over a 24-hour period. Food presentation must reflect the natural range of food types. Food must be presented in a way that maximises foraging time. Grazing must be encouraged, and all facilities must provide some grazing access.

A8.29 Elephant diets must be high in fibre with forage (such as browse, grass, hay, and straw) comprising no less than 80% of the diet with the rest of their diet being pellets and other foodstuffs. Browse and other forage must account for the majority of the diet and must be offered to each elephant daily and throughout the year. Forage (including grass, hay, and straw) must be provided in sufficient quantities to allow foraging and feeding at all times, including overnight.

A8.30 All forage must be of appropriate quality, reflecting current nutritional guidelines. Supplements must be used to provide adequate levels of vitamins and minerals in the diet. Other items (for example, high sugar content vegetables or fruit) must only be used in minimal amounts as needed for training and enrichment activities.

A8.31 Individual diet plans must be detailed in the IWP and be tailored to individual needs based on body condition score (BCS) (this can be evaluated using the EWG's tool) and weight, based on nutritionist or veterinary surgeon advice. If an optimum BCS is not achieved, collections must demonstrate evidence of a plan about how they are going to achieve optimum BCS and any progress that has been made.

Behavioural management

A8.32 The individual behaviour of elephants must be routinely monitored and assessed (including overnight behaviour) using the EWG Elephant Behavioural Welfare Assessment Tool (EBWAT). Monitoring must include using cameras to monitor overnight behaviour. A written plan must be produced to address any behavioural concerns identified by the EBWAT.

A8.33 Extensive and varied enrichment must be provided daily in both the inside and outside environments. Evidence must be provided of the implementation of a goal-driven daily enrichment plan with clear aims and evaluation methods. The plan must include activities in all five enrichment categories (sensory, food-based, structural, cognitive and social).

A8.34 Food presentation must be varied, time-consuming and induce intellectual challenge (for example, puzzle feeders). The Licence Holder must be able to demonstrate consideration of physical developmental and maintenance needs with regard to food presentation, for example encouraging elephants to lift their trunks to obtain overhead foods.

A8.35 Food must be placed throughout the exhibit to provide psychological stimulation, avoid competition, and encourage movement. Overnight behaviour must be monitored in order to assess behavioural responses to overnight feeding.

A8.36 Olfaction and audition are key sensory modalities for elephants. Olfactory and other forms of positive sensory enrichment must be considered (for example, not removing all faecal material every day).

Healthcare

A8.37 General health must be assessed as part of the daily management routine and any findings considered abnormal documented and reviewed.

A8.38 A healthcare plan must be documented, implemented and form part of the IWP. The plan must contain:

a) health monitoring data gathered using the UK EWG health pack
b) baseline information on the elephant's state of health
c) any behavioural issues, including stereotypy
d) exercise plan
e) weight and body condition score

The plan must show evidence of the steps taken to address any issues and improvements achieved.

A8.39 Staff must have safe access to elephants through operant conditioning programmes based around positive reinforcement training. This is in order to achieve optimum healthcare of captive elephants. Written protocols outlining safe staff access to elephants must be maintained.

Use of physical restraint

A8.40 Elephants must not be physically restrained save for exceptional circumstances. Zoos must demonstrate what steps are being taken to move away from chaining, including timelines. Where permitted (for example, veterinary procedures), restraint must be subject to written approval by senior management. Parameters of exceptional restraint must be defined and recorded in the animal records. Records must be kept, including the total time restrained.

Additional notes

a) Restraint includes any practice that severely restricts the movement of the elephant such as chaining or tethering legs, and/or confinement in a restraint device, squeeze, or chute
b) Training to allow desensitisation and familiarisation (for both elephants and staff) is permitted in accordance with Appendix A8.41 to A8.43

A8.41 Elephants must not be physically restrained for periods in excess of 1 out of 24 hours except in exceptional circumstances under direct veterinary guidance, such as during specific procedures (for example, during transport). All uses of restraints of 1 hour or over must be documented.

A8.42 Only named trained persons (for example, those specifically trained to carry out physical restraint in elephants) may carry out physical restraint. This may include external elephant experts brought in for staff training and elephant transportation.

A8.43 Elephant keepers must be adequately trained in the use of restraint equipment and procedures, and safety aspects followed. Documented evidence of training must be maintained.

Public safety

A8.44 Barriers and gates must not have horizontal bars or cables which would allow elephants to climb. The minimum height permitted is 1.9m for cows and 2.5m for bulls. Designated safety areas for keeping staff must be clearly identified in line with the management system employed. Stand-off areas must be designed to prevent contact between elephants and public.

A8.45 Gates must be robust, and any hydraulic system must have an alternative power source and a manual backup. Hydraulic gates must be capable of being operated remotely by staff (for example, outside the area within elephant reach) and must be able to be opened and closed quickly with a stop facility to make sure trunks or tails are not crushed. The safe operation of any manual gates must be able to be demonstrated to inspectors.

A8.46 Electric fences must not be used as the primary barrier. Electric fences used as a secondary barrier must be of sufficient voltage to deter elephants and must have a failsafe alarm system. Fence integrity must be checked daily, and their condition recorded, and daily records maintained on the voltage provided by the fence. Steep ditches on the elephants' side of the enclosure are not suitable as barriers and must not be used.

Elephant training

A8.47 Each institution must have an elephant training programme based around positive reinforcement (documented in the LTMP) and individual tailored goals for each animal (documented in the IWP).

Management systems

A8.48 All zoological collections must phase out the use of free contact management by the 1 January 2030. Collections using free contact must be able to demonstrate that they are making the required changes to enable the shift to a protected contact system by 1 January 2030.

Additional note

a) There are 2 recognised elephant management systems:

Free Contact: Free contact is a system for managing elephants in which the physical handling of an elephant occurs with the keeper and the elephants sharing the same unrestricted space (without any solid elephant-proof barrier in between them), typically utilising a mixture of positive reinforcement, negative reinforcement, and positive punishment to modify behaviour. This includes direct contact with an elephant on restraints (referred to as 'Restricted Contact'). Keepers function within the elephant social hierarchy and, in part, attempt to establish a position of social dominance.

Protected Contact: Protected contact is a system for managing elephants that uses positive reinforcement training as the primary method to modify behaviour; targets are used to direct the elephant's position and movements. Keeper safety is achieved by elephant and keeper positioning relative to each other and through a barrier, which separates human and animal spaces. Keepers function outside the elephant social hierarchy and do not attempt to establish a position of social dominance. Interaction between elephant and keeper is by the choice of the elephant.

A8.49 All zoological institutions must phase out the use of ankuses by the 1 January 2030. Collections using ankuses must be able to demonstrate that they are making the required changes to enable the shift by the 1 January 2030. Where ankuses are still

in use prior to the 1 January 2030, the Licence Holder must ensure that there is written justification as to their use, as well as evidence of ongoing staff training in the appropriate use of the ankus and records of this training must be retained.

Additional note

a) The ankus is a tool used to cue the elephant to maintain commands and train them. It is intended to produce a light physical contact. The consequences of bad practice are significant and severe.

A8.50 All staff using the ankus must participate in continued professional development (CPD) and training to make sure best practice is maintained. The ankus must not hit, injure, damage, or break the skin or be used in any other way that could cause physical or mental injury. All injuries caused by an ankus must be recorded, in conjunction with the situation and circumstances of its use, and reviewed by management.

A8.51 All zoological collections must phase out the use of electric goads by 1 January 2030. Collections using electric goads must be able to demonstrate that they are making the required changes to enable the shift by 1 January 2030.

A8.52 Electric goads must only ever be used to protect human safety in extreme situations (such as an imminent threat to human life) and never as a way of controlling the animal.

A8.53 Goads may be used only by staff that have had appropriate training.

A8.54 The Licence Holder must have a written policy on electric goad use which is approved by senior management. This must include named persons and parameters of use.

A8.55 In all cases where an electric goad has been used, a full report must be produced detailing the situation and circumstances of its use. The report must be reviewed by management. Discussion must occur surrounding how use could be avoided in the future.

Appendix A9: Great apes

Preface

All species of great ape (the family Hominidae which includes the genera *Gorilla*, *Pan* and *Pongo*) are socially and cognitively complex in behaviour. Housing and husbandry practices must reflect their cognitive abilities and meet their welfare needs. Facilities must reflect their physical strength and provide a safe working environment for staff. All of the great apes are listed under Category 1A, the highest risk.

Great apes are socially complex, resourceful and have long developmental periods. In the early stages of life, the appropriate social structure will give them opportunities to learn species-specific behaviours, particularly those used to develop strong social bonds.

Great ape species exhibit differing degrees of fission-fusion social dynamics in the wild. It is important to take account of this in enclosure design by creating multiple spaces where individuals can withdraw from the group and be out of sight of others.

Housing facilities and husbandry practices must reflect the differing needs of individuals of all ages.

General provisions

Long Term Management Plan (LTMP)

A9.1 A long-term management plan (LTMP) must be produced for each collection holding great apes that includes all individuals and covers the next 25 years. The LTMP must be informed by evidence-based practice, best practice husbandry guidelines, field data or published literature from a peer-reviewed source, where available. The plan must be revisited annually to make sure that it is always up to date, and it must also be reviewed after any significant event (for example, birth, death, or transfer). The plan must be subject to internal ethical review and must include:

a) Group status of the collection (for example, breeding group, bachelor group, harem group, retirement facility) and plan for expected changes throughout the tenure for holding the group (for example, introductions, group demographics, changes to the collection plan)
b) Enclosure design incorporating flexibility to allow for changes in social groupings (for example, introductions, males excluded from breeding or bachelor groups) as well as providing opportunities for individuals or subgroups to separate themselves from others in the group thus, within the constraints of captivity, mimicking natural fission-fusion social systems
c) Enclosure review every 5 years to ensure:
    (i) that enclosures will continue to meet the management and welfare needs of the animals
    (ii) that the safety and security of facilities will continue to be effective
d) A designated team of primate keepers
e) Staff training and a continuing professional development (CPD) programme, including awareness of current relevant research specific to great apes

Welfare Management Plan (WMP)

A9.2 A Welfare Management Plan (WMP) must be produced for each species of great ape held. This plan must be regularly reviewed and updated, yearly or after any significant event. Each WMP must contain, as a minimum, the following:

a) nutrition plan
b) training programme
c) healthcare plan
d) enrichment plan
e) profiles of each individual to include details of any behavioural or health issues and their associated management or mitigation plans
f) breeding management plan (where applicable)
g) geriatric management plan (where applicable)
h) lone great ape management plan (where applicable)

The captive environment

Social grouping

A9.3 Great apes must be provided with opportunities to socialise with multiple compatible conspecifics, in group structures appropriate for their species in natural environments, as follows:

- Chimpanzees and bonobos: groups of multi-male, multi-female, and bachelor groups
- Gorillas: single silverback with multiple females plus offspring and bachelor groups
- Orangutans: female-offspring units, with access to other female-offspring units and males. Sexually mature (flanged) male orangutans must not be physically housed together or in visual contact.

Additional notes

a) Priority must be given to promote species appropriate socialisation and group structures but where this is not possible due to constraints such as breeding programme logistics or individual behavioural traits, the Licence Holder must demonstrate the proactive steps being taken by the zoo to achieve this, these steps being recorded in the WMP for the species
b) Groups must include a variety of ages, where possible
c) Breeding collections must have, or demonstrate through their LTMP, that steps are being taken to achieve stable multi-generational groups. If an appropriate group structure cannot be achieved, a written justification and ethical review must be undertaken

A9.4 Prolonged separation of great apes from conspecifics must be avoided except:

a) Under the direction of a veterinary surgeon where an individual's (or others in the social group) health or welfare is compromised
b) for periods of time when introducing new animals or
c) where the animal would normally be considered to be a lone animal due to its life stage and natural history, for example a non-breeding aged male orangutan that may need to be kept solitary

The Licence Holder must be able to demonstrate consideration of all options to promote social groupings for an individual(s), including alternative suitable housing in non-breeding situations.

Additional notes

a) Subject to Section A9.4, zoos that cannot achieve stable, multi-generational groups in diverse and environmentally stimulating, expansive environments must proactively review and implement changes to their LTMP or divest themselves of their great apes.

A9.5 Young great apes must be brought up in species-appropriate social groups to experience events such as births, infant rearing, and appropriate social behaviours.

Enclosures

A9.6 Enclosures for great apes must:

a) have multiple indoor and outdoor spaces, defined by physical or visual barriers to allow the animals to choose their location
b) provide multiple entry and exit points to each room to prevent dominant individuals from denying subordinates access to preferred areas
c) allow continuous 24-hour access to indoor, outdoor, and off-show areas, except for routine husbandry and in exceptional circumstances as outlined in Section 2.6 (for example, extreme weather, essential maintenance)
d) allow animals the opportunity to be out of sight of the public and conspecifics in indoor and outdoor enclosures
e) have three-dimensional indoor and outdoor spaces that allow arboreal behaviour and vertical complexity, based on the most current knowledge/information available:
    (i) dynamic multilevel structures that facilitate locomotion on top of, and hanging below, supports
    (ii) several vertical and horizontal climbing supports (rigid or flexible, for example, a rope attached at the top and bottom)
    (iii) orangutans must also have provision for moving horizontally on flexible arboreal supports
    (iv) enclosure furnishings must be designed and installed to promote musculoskeletal health

A9.7 Incentives must be provided to encourage the use of all available vertical space (for example, resting places, enrichment devices and viewpoints).

A9.8 Complexity must be provided on the ground for African apes (for example, logs, boulders, visual barriers, or vegetation) and arboreally for all apes (for example, visual barriers, variety of supports, range of resting places or enrichment devices). Outdoor enclosures must provide natural foraging opportunities, privacy, and shade.

A9.9 Indoor enclosures must be provided with organic substrates (for example, wood chip, hay, straw, or leaf litter) to promote foraging behaviours, encourage nesting behaviour and enhance humidity levels.

A9.10 Opportunities and materials (including appropriate planting) must be provided for great apes to spend a large proportion of their time on species-typical cognitively

demanding activities such as complex nest building, extractive foraging, food manipulation, tool use and social behaviour, at appropriate locations within the enclosure.

A9.11 Enclosure design must allow for the need to occasionally separate individuals, whilst allowing visual and olfactory contact between conspecifics when required (for example, for introductions) and when appropriate.

A9.12 Enclosure design must allow for animal training opportunities, where appropriate, for example medical training programmes such as hand injection, auscultation, and conscious blood draw.

Environmental parameters

A9.13 The Licence Holder must maintain a documented Environmental Management Plan (EMP) for each great ape species held within the zoo. The EMP must clearly outline:

(a) the environmental parameters to be monitored for the species kept
(b) the target ranges for each environmental parameter appropriate for the species kept
(c) the methods and equipment used to monitor the parameters
(d) the processes to be implemented where monitored parameters deviate outside the defined target ranges

The EMP must be reviewed, and updated (where required), on an annual basis. The requirements and frequency of testing for each parameter are outlined in Table A9.1:

Table A9.1: Environmental monitoring and recording frequency

Environmental parameter	Frequency (routine monitoring)
Temperature	Daily (maximum-minimum)
Humidity	Daily
UVI (where present)	Monthly

A9.14 Great apes must be provided with the opportunity to experience a range of temperatures. Average indoor temperatures must be maintained between 18 to 22°C, and typically not exceed 30°C. Prolonged/enforced exposure to excessive cold and hot temperatures must be avoided. Temperature must be monitored and records maintained.

A9.15 Humidity in indoor accommodation must be monitored and recorded as per the EMP, whilst maintaining suitable ventilation and air changes.

A9.16 Great apes must be provided with access to suitable levels of natural light. They must be given the opportunity to experience a nesting routine within a natural diurnal pattern. Artificial light allowing for seasonal variation must be provided. Indoor areas must have spaces that are well lit but offer opportunities to choose from a range of light levels.

A9.17 Where UV light is recommended for a great ape species as part of routine husbandry practices this must be provided at levels appropriate for the species and at locations where it is effective, safe and secure from tampering.

Feeding and nutrition

A9.18 Great apes must be provided with diets similar in nutrient composition and processing complexity to that in the wild to meet the psychological, physical and digestive needs of the species. Diets must be constructed to be high in fibre (neutral detergent fibre 30-50% or greater) with fruit only to be used in small quantities (including fruit fed for training). Diets must be specific to the individual great ape species.

A9.19 A proportion of food must be presented in a way that supports natural arboreal feeding behaviours, including environmental structures that allow foraging or feeding whilst using suspensory arboreal postures.

A9.20 Multiple feeds must be provided daily to allow extensive foraging and feeding. Opportunities to continue foraging and browsing before and after zoo closing hours must be provided.

A9.21 The timing and provision of food must consider the group's dominance hierarchy to ensure all group members have the opportunity to access a balanced diet. Provisioning the group through multiple feeding locations, for example, more feed spots than individuals, and the application of socialisation training techniques must be considered to help ease tensions and provide a variety of choice. If separation of individuals is required to give them time to eat separate rations, the time they are separated must be kept to a minimum.

A9.22 Great ape weights and a visual assessment of their body condition must be monitored and documented at least monthly, and diet and food presentation modified where needed.

Public safety

A9.23 Stand-off areas must be designed to prevent close contact between great apes and members of the public, taking into consideration potential zoonotic disease transfer between these two populations. Great apes' ability to use items such as sticks and branches to gain extra reach beyond their leg and arm length must also be considered in the stand-off barrier design.

A9.24 Where animals have access to an automatic or controlled door or gate during operation, the operator must have full visual access and never use 'blind shifting'. If the person operating the gate does not have full visual access, a second person must be used and contact (via radio or other means) maintained throughout door operation to ensure injury to the animal does not occur. CCTV can be considered appropriate in certain situations as 'full visual access'.

A9.25 Electric fences used as a secondary barrier must be of sufficient voltage to deter great apes and must have a failsafe alarm system. Fence integrity must be checked daily, and its condition recorded.

Appendix B: Hazardous Animal Categorisation

Preface

This appendix provides a classification of animals based on their relative danger to members of the public in zoos and aquariums. This appendix must be considered alongside the specific requirements for the different categories as outlined in Section 8 and Section 9 of these Standards.

B1 Zoo animals are categorised into 4 risk levels based on the animal's likely behaviour and potential ability to cause harm to people, and the scale of harm if it should do so:

Category 1A (highest risk)

Contact between the public and any individual animals in Category 1A is highly likely to cause severe injury or be a serious threat to life, based on hazard and risk of injury irrespective of the age and vulnerability of the visitor. Due to their nature, these animals pose a higher risk than Category 1 listed animals and therefore have mandatory additional safety measure requirements.

Category 1 (greater risk)

Contact between the public and any individual animals in Category 1 is likely to cause serious injury or be a serious threat to life, based on hazard and risk of injury, toxin, or disease, irrespective of the age and vulnerability of the visitor.

Category 2 (less risk)

Contact between the public and any individual animals in Category 2 may result in injury or illness, based on hazard and risk of injury, toxin, or disease, but is not likely to be life-threatening.

The Licence Holder must treat any animal in Category 2 that has behaved in a hazardous way as if it is in Category 1.

Category 3 (least risk)

All animals not listed in Category 1A, Category 1 or Category 2 are automatically in Category 3. This does not necessarily mean that they do not present a hazard or risk to members of the public. This Category contains many taxa in respect of which knowledge and experience of captivity is currently lacking.

The Licence Holder must treat any animal in Category 3 that has behaved in a hazardous way as if it is in Category 1.

Guidance on risk categorisations and listings

B3 The following information aims to help zoo inspectors, Local Authorities, and Zoo Operators to interpret the risk categorisations and the listings.

Using the list

B4 This list is intended to indicate the level of hazard and risk to members of the public from animals kept in premises licensed under the Zoo Licensing Act (1981).

B5 It should not be interpreted as indicating the level of hazard and risk from animals encountered in any other circumstances. In particular, it should not be used to indicate the level of hazard and risk from animals kept in homes, circuses, pet shops and other places not covered by the Act which are subject to the Dangerous Wild Animals Act (1976) for which a separate schedule exists.

B6 This list does not take account of animal welfare nor potential invasive species potential.

Safety measures

B7 The list will act as an aid to inspectors in determining whether a barrier, other safety measures, and the standard operating procedures in place for safe management are appropriate for a particular species or individual.

B8 It should also aid Licence Holders and operators in carrying out risk assessments on barrier types from a public safety perspective.

B9 For guidance on carrying out risk assessments, refer to BIAZA's (the British and Irish Association of Zoos and Aquariums) Health and Safety Guidelines for Zoos and Aquariums (2020) which has replaced the Health and Safety Executive's guidance (HSG) 219 - Managing Health and Safety in Zoos (2012).

Injuries caused by animals

B10 The likelihood of bites, pecks, scratches, or any other injuries caused by any individual animal in unusual circumstances (for example, an animal which is being inappropriately handled or cornered) is not to be taken as a measure of the natural ferocity of a species. This is mentioned so that species are not considered to be overly hazardous on the basis of anecdotal reports of behaviour under such circumstances.

Breeding and rearing behaviour

B11 In some species, such as those which live in herds, there is a greater likelihood of attack and injury from the leading animals (usually the leading males) than from other members of the group, especially in any breeding season. Extra caution is required at such times. In mammal species in which the young accompany the

females, nursing females are likely to present a higher level of risk than at other times.

B12 Birds defending eggs and chicks are likely to present a higher level of risk than at other times. Where required, safety protocols must demonstrate consideration of such, often seasonal, variation of risk.

Dealing with young animals

B13 In most species, the young do not present the same order of hazard as might be expected from adults (except in the case of venomous animals).

B14 Whilst in some instances hand-reared animals are safer than naturally reared animals, this is not always so, particularly with species of wild ungulates and many species of birds.

Category 1 hazardous animals

B15 Unless otherwise clarified in the list below, the age, size, sex, or surgical or chemical sterilisation of a specimen of a Category 1A or Category 1 listed species cannot be used to justify treating it as a lower category of risk.

Hybrid animals

B16 Hybrid animals must be placed in the same category as the more hazardous of the parent or grandparent species.

B17 Any hybrid with great grandparents or higher listed as Category 1A, Category 1 or Category 2 (F3 or later) must be assessed on an individual basis. Their individual hazardous categorisation must be agreed with the Licensing Authority, taking advice from the zoo inspectorate and Licence Holder.

Domesticated animals

B18 Animals normally domesticated in Britain have not been included in this list. Attention is drawn to the possibility that individuals of such species may be very dangerous.

Taxon of animals

B19 Where categorisation is of a taxon of animals, such as the genus *Cacatua*, the categorisation has been made on the basis of the highest-risk species within that taxon.

B20 The categorisation of the Hazardous Animal Categorisation list gives priority to molecular phylogenetic classification, where available, and then, where it is not, accepted classification systems as outlined in the taxonomic groupings listed below.

B21 The Hazardous Animal Categorisation list is broken down into separate tables for each Order which is further sub-divided into families and genera, the families being ordered taxonomically but the genera being alphabetical for ease of use.

Assessing the hazardous categories risk

B22 The list below includes mammals, birds, reptiles, amphibians, fish, and invertebrates that are thought to present significant hazards in zoos and aquariums (those falling within Categories 1A, 1 and 2).

B23 Any variation in the name, classification or nomenclature may not be taken to imply that the categorisation of a species has changed.

B24 The nature of the barrier for any taxa not listed in either Category 1A, 1 or 2 must be determined by the Licence Holder or operator based on risk assessments.

Categorisations and listings

B25 Any species not listed, is in risk Category 3.

B26 In the listings below, the following abbreviations apply:

- Special Electric Risk (E)
- Special Kicking Risk (K)
- Special Pecking Risk (P)
- Special Venom Risk (V)

B27 Please note that whilst some of the venomous species could be considered Category 1A the nature of the hazardous risk and the species themselves in most cases do not warrant the additional requirements that are associated with Category 1A categorisation. As such the management of these venomous and poisonous species are dealt with separately in Appendix A4.

Mammals

Table B1: Monotremata

Family	Genus	Common Name	Risk category
Ornithorhynchidae	*Ornithorhynchus*	Platypus - males	2V

Table B2: Didelphimorpha

Family	Genus	Common Name	Risk category
Didelphidae	*Chironectes*	Yapok or water opossum	2
Didelphidae	*Didelphis*	Large opossum	2
Didelphidae	*Lutreolina*	Thick-tailed opossum	2
Didelphidae	*Metachirus*	Brown four-eyed opossum	2
Didelphidae	*Philander*	Philander or four-eyed opossum	2

Table B3: Dasyuromorphia

Family	Genus	Common Name	Risk category
Dasyuridae	*Sarcophilus*	Tasmanian devil	1

Table B4: Diprotodontia

Family	Genus	Common Name	Risk category
Vombatidae	*Lasiorhinus*	Hairy-nosed wombat	2
Vombatidae	*Vombatus*	Common wombat	2
Phalangeridae	*Trichosurus*	Brush-tailed possum	2
Macropodidae	*Macropus fuliginosus*	Western grey kangaroo	2K
Macropodidae	*Macropus giganteus*	Eastern grey kangaroo	1K
Macropodidae	*Osphranter antilopinus*	Antilopine kangaroo	2K
Macropodidae	*Osphranter robustus*	Common wallaroo	2K
Macropodidae	*Osphranter rufus*	Red kangaroo	1K

Table B5: Tubulidentata

Family	Genus	Common Name	Risk category
Orycteropidae	*Orycteropus*	Aardvark	2

Table B6: Hyracoidea

Family	Genus	Common Name	Risk category
Procaviidae	*Dendrohyrax*	Tree hyrax	2
Procaviidae	*Heterohyrax*	Bush hyrax	2
Procaviidae	*Procavia*	Rock hyrax	2

Table B7: Proboscidea

Family	Genus	Common Name	Risk category
Elephantidae	*Elephas*	Asian elephant	1A
Elephantidae	*Loxodonta*	African elephant	1A

Table B8: Cingulata

Family	Genus	Common Name	Risk category
Chlamyphoridae	*Priodontes*	Giant armadillo	2

Table B9: Pilosa

Family	Genus	Common name	Risk category
Myrmecophagidae	*Myrmecophaga*	Giant anteater	1
Myrmecophagidae	*Tamandua*	Tamanduas	2
Megalonychidae	*Choloepus*	Two-toed sloths	2
Bradypodidae	*Bradypus*	Three-toed sloths	2

Table B10: Primates

Family	Genus	Common name	Risk category
Lepilemuridae	*Lepilemur*	Weasel and sportive lemurs	2
Lemuridae	*Eulemur*	Lemurs	2
Lemuridae	*Hapalemur*	Bamboo lemurs	2
Lemuridae	*Lemur*	Ring-tailed lemur	2
Lemuridae	*Prolemur*	Greater bamboo lemur	2
Lemuridae	*Varecia*	Ruffed lemurs	2
Indriidae	*Avahi*	Woolly indri	2
Indriidae	*Indri*	Indri	2
Indriidae	*Propithecus*	Sifakas	2
Daubentoniidae	*Daubentonia*	Aye-aye	2
Lorisidae	*Nycticebus*	Slow loris - all species in the genus	2V
Callitrichidae	All species	All species	2
Aotidae	*Aotus*	Night monkey	2
Cebidae	*Cebus*	Capuchin monkeys	1
Cebidae	*Saimiri*	Squirrel monkeys	2
Cebidae	*Sapajus*	Capuchin monkeys	1
Pitheciidae	*Cacajao*	Uakaris	2
Pitheciidae	*Callicebus*	Titis	2
Pitheciidae	*Chiropotes*	Bearded sakis	2
Pitheciidae	*Pithecia*	Sakis	2
Atelidae	*Alouatta*	Howler monkeys	1

Family	Genus	Common name	Risk category
Atelidae	*Ateles*	Spider monkeys	1
Atelidae	*Brachyteles*	Woolly spider monkey	1
Atelidae	*Lagothrix*	Woolly monkeys	1
Cercopithecidae	*Allenopithecus*	Allen's swamp monkey	1
Cercopithecidae	*Allochrocebus*	L'Hoest's monkey	1
Cercopithecidae	*Cercocebus*	Mangabeys	1
Cercopithecidae	*Cercopithecus*	All species	1
Cercopithecidae	*Chlorocebus*	Vervet type monkeys	1
Cercopithecidae	*Colobus*	Colobus monkeys	1
Cercopithecidae	*Erythrocebus*	Patas monkeys	1
Cercopithecidae	*Lophocebus*	Mangabeys	1
Cercopithecidae	*Macaca*	Macaques	1
Cercopithecidae	*Mandrillus*	Mandrill, drill	1A
Cercopithecidae	*Miopithecus*	Talapoin monkeys	2
Cercopithecidae	*Nasalis*	Proboscis monkey	1
Cercopithecidae	*Papio*	Baboons	1A
Cercopithecidae	*Piliocolobus*	Red colobus monkeys	1
Cercopithecidae	*Presbytis*	Langurs	1
Cercopithecidae	*Procolobus*	Olive colobus monkey	1
Cercopithecidae	*Pygathrix*	Doucs	1
Cercopithecidae	*Rhinopithecus*	Snub-nosed monkeys	1
Cercopithecidae	*Rungwecebus*	Kipunji	1
Cercopithecidae	*Semnopithecus*	Langurs and leaf monkeys	1
Cercopithecidae	*Simias*	Pig-tailed langur	1
Cercopithecidae	*Theropithecus*	Gelada	1
Cercopithecidae	*Trachypithecus*	Langurs	1
Hylobatidae	*Hoolock*	Hoolock gibbons	1
Hylobatidae	*Hylobates*	Gibbons	1
Hylobatidae	*Nomascus*	Gibbons	1
Hylobatidae	*Symphalangus*	Siamang	1
Hominidae	*Gorilla*	Gorillas	1A
Hominidae	*Pan*	Chimpanzee and bonobo	1A
Hominidae	*Pongo*	Orangutans	1A

Table B11: Rodentia

Family	Genus	Common name	Risk category
Castoridae	*Castor*	Beaver	2
Hystricidae	*Atherurus*	Brush-tailed porcupine	2
Hystricidae	*Hystrix*	Crested porcupine	2
Hystricidae	*Thecurus*	Indonesian porcupine	2

Family	Genus	Common name	Risk category
Hystricidae	*Trichys*	Long-tailed porcupine	2
Erethizontidae	*Chaetomys*	Thin-spined porcupine	2
Erethizontidae	*Coendou*	Tree porcupine	2
Erethizontidae	*Echinoprocta*	Amazon porcupine	2
Erethizontidae	*Erethizon*	North American porcupine	2
Cuniculidae	*Cuniculus*	Paca	2
Caviidae	*Hydrochoerus*	Capybara	2
Dinomyidae	*Dinomys*	Pacarana	2
Echimyidae	*Capromys*	Hutia	2
Echimyidae	*Myocastor*	Coypu	2
Echimyidae	*Plagiodontia*	Hispaniola hutia	2
Sciuridae	*Ratufa*	Giant squirrel	2

Table B12: Eulipotyphla

Family	Genus	Common name	Risk category
Erinaceidae	*Echinosorex*	Moonrat	2
Erinaceidae	*Hylomys*	Lesser moonrat	2
Erinaceidae	*Neohylomys*	Hainan moonrat	2
Erinaceidae	*Podogymnura*	Mindanao gymnure	2
Solenodontidae	*Atopogale*	Cuban solenodon	2
Solenodontidae	*Solenodon*	Hispaniolan solenodon	2

Table B13: Chiroptera

Family	Genus	Common name	Risk category
Pteropodidae	*Pteropus*	Old world fruit bats, all species	2
Phyllostomidae	*Desmodus*	Common vampire bat	1
Phyllostomidae	*Diaemus*	White-winged vampire bat	1
Phyllostomidae	*Diphylla*	Hairy-legged vampire bat	1

Table B14: Carnivora

Family	Genus	Common name	Risk category
Nandiniidae	*Nandinia*	African palm civet	2
Prionodontidae	*Prionodon*	Linsang	2
Felidae	*Acinonyx*	Cheetah	1

Family	Genus	Common name	Risk category
Felidae	*Caracal*	Caracal	2
Felidae	*Felis*	Wild cat (all non-domesticated)	2
Felidae	*Leopardus*	Ocelot and other wild cats	2
Felidae	*Leptailurus*	Serval	2
Felidae	*Lynx*	Lynxes	1
Felidae	*Otocolobus manul*	Pallas's cat	2
Felidae	*Profelis aurata*	African golden cat	2
Felidae	*Prionailurus*	Medium wild cats	2
Felidae	*Puma concolor*	Cougar	1A
Felidae	*Puma yagouaroundi*	Jaguarundi	2
Felidae	*Neofelis*	Clouded leopard	1
Felidae	*Panthera*	Lion, tiger, leopards and jaguar	1A
Felidae	Other *Felis* spp.	Less common species not listed	2
Viverridae	*Arctictis*	Binturong	2
Viverridae	*Arctogalidia*	Small-toothed palm civet	2
Viverridae	*Chrotogale*	Owston’s palm civet	2
Viverridae	*Civettictis*	African civet	2
Viverridae	*Cynogale*	Otter civet	2
Viverridae	*Diplogale*	Hose's palm civet	2
Viverridae	*Genetta*	Genet	2
Viverridae	*Hemigalus*	Banded palm civet	2
Viverridae	*Macrogalidia*	Sulawesi palm civet	2
Viverridae	*Paguma*	Masked palm civet	2
Viverridae	*Paradoxurus*	Palm civets	2
Viverridae	*Poiana*	Linsang	2
Viverridae	*Viverra*	Civets	2
Viverridae	*Viverricula*	Small Indian civet	2
Herpestidae	*Atilax*	Marsh mongoose	2
Herpestidae	*Bdeogale*	Mongoose	2
Herpestidae	*Crossarchus*	Kusimanse	2
Herpestidae	*Cynictis*	Yellow mongoose	2
Herpestidae	*Dologale*	Pousargues' mongoose	2
Herpestidae	*Galerella*	Slender mongoose	2
Herpestidae	*Helogale*	Dwarf mongoose	2
Herpestidae	*Herpestes*	Mongoose	2
Herpestidae	*Ichneumia*	White-tailed mongoose	2
Herpestidae	*Liberiictis*	Liberian mongoose	2
Herpestidae	*Mungos*	Banded mongoose	2

Family	Genus	Common name	Risk category
Herpestidae	*Paracynictis*	Selous's mongoose	2
Herpestidae	*Rhynchogale*	Meller's mongoose	2
Herpestidae	*Suricata*	Meerkat	2
Eupleridae	*Cryptoprocta*	Fossa	1
Eupleridae	*Eupleres*	Falanouc	2
Eupleridae	*Fossa*	Malagasy civet	2
Eupleridae	*Galidia*	Ring-tailed mongoose	2
Eupleridae	*Galidictis*	Malagasy mongoose	2
Eupleridae	*Mungotictis*	Malagasy mongoose	2
Eupleridae	*Salanoia*	Malagasy mongoose	2
Hyaenidae	*Crocuta*	Spotted hyena	1A
Hyaenidae	*Hyaena*	Striped	1
Hyaenidae	*Parahyaena*	Brown hyena	1
Hyaenidae	*Proteles*	Aardwolf	2
Canidae	*Alopex*	Arctic fox	2
Canidae	*Atelocynus*	Short-eared dog	2
Canidae	*Canis lupus*	Wolf	1
Canidae	*Canis* spp.	Coyote and jackal	2
Canidae	*Cerdocyon*	Crab-eating fox	2
Canidae	*Chrysocyon*	Maned wolf	2
Canidae	*Cuon alpinus*	Dhole	1
Canidae	*Lycaon pictus*	Hunting dog	1A
Canidae	*Nyctereutes*	Raccoon dog	2
Canidae	*Otocyon*	Bat-eared fox	2
Canidae	*Pseudalopex*	Foxes	2
Canidae	*Speothos*	Bush dog	2
Canidae	*Urocyon*	Foxes	2
Canidae	*Vulpes*	Common fox	2
Ursidae	*Ailuropoda*	Giant panda	1A
Ursidae	*Helarctos*	Sun bear	1A
Ursidae	*Melursus*	Sloth bear	1A
Ursidae	*Tremarctos*	Andean bear	1A
Ursidae	*Ursus*	Asiatic black bear, American black bear, brown bear, and the polar bear	1A
Otariidae	*Arctocephalus*	Fur seal	1
Otariidae	*Callorhinus*	Northern fur seal	1
Otariidae	*Eumetopias*	Steller's sealion	1
Otariidae	*Neophoca*	Australian sealion	1
Otariidae	*Otaria*	Southern sealion	1

Family	Genus	Common name	Risk category
Otariidae	*Zalophus*	California sealion	1
Odobenidae	*Odobenus*	Walrus	1
Phocidae	*Cystophora*	Hooded seal	1
Phocidae	*Erignathus*	Bearded seal	1
Phocidae	*Halichoerus*	Grey seal	1
Phocidae	*Histrophoca*	Ribbon seal	1
Phocidae	*Hydrurga*	Leopard seal	1
Phocidae	*Leptonychotes*	Weddell seal	1
Phocidae	*Lobodon*	Crab-eating seal	1
Phocidae	*Mirounga*	Elephant seal	1
Phocidae	*Monachus*	Monk seal	1
Phocidae	*Ommatophoca*	Ross seal	1
Phocidae	*Pagophilus*	Harp seal	1
Phocidae	*Phoca*	Common, ringed, Caspian and Baikal seal	2
Ailuridae	*Ailurus*	Red panda	2
Mephitidae	*Conepatus*	Hog-nosed and South American skunks	2
Mephitidae	*Mephitis*	Skunk	2
Mephitidae	*Mydaus*	Malay badger	2
Mephitidae	*Spilogale*	Spotted skunk	2
Mustelidae	*Aonyx*	Small-clawed otter	2
Mustelidae	*Arctonyx*	Hog badger	2
Mustelidae	*Eira*	Tayra	2
Mustelidae	*Enhydra*	Sea otter	1
Mustelidae	*Galictis*	Grison	2
Mustelidae	*Gulo*	Wolverine	1
Mustelidae	*Ictonyx*	Zorilla	2
Mustelidae	*Lontra*	Otter, all species	1
Mustelidae	*Lutra*	Eurasian and hairy-nosed otter	1
Mustelidae	*Lutrogale*	Smooth-coated otter	1
Mustelidae	*Lyncodon*	Patagonian weasel	2
Mustelidae	*Martes*	Marten	2
Mustelidae	*Meles*	Badger	2
Mustelidae	*Mellivora*	Ratel	1
Mustelidae	*Melogale*	Ferret badger	2
Mustelidae	*Mustela*	Mink, stoat and weasel	2
Mustelidae	*Poecilogale*	White-naped weasel	2
Mustelidae	*Pteronura*	Giant otter	1A
Mustelidae	*Taxidea*	American badger	2

Family	Genus	Common name	Risk category
Mustelidae	*Vormela*	Marbled polecat	2
Procyonidae	*Bassaricyon*	Olingo	2
Procyonidae	*Bassariscus*	Cacomistle and ringtail	2
Procyonidae	*Nasua*	Coati	2
Procyonidae	*Nasuella*	Mountain coati	2
Procyonidae	*Potos*	Kinkajou	2
Procyonidae	*Procyon*	Raccoon	2

Table B15: Perissodactyla

Family	Genus	Common name	Risk category
Equidae	*Equus*	Wild horse, ass and zebra (wild species)	1
Tapiridae	*Tapirus*	Tapir	1
Rhinocerotidae	*Ceratotherium*	White rhinoceros	1A
Rhinocerotidae	*Dicerorhinus*	Sumatran rhinoceros	1A
Rhinocerotidae	*Diceros*	Black rhinoceros	1A
Rhinocerotidae	*Rhinoceros*	Greater one-horned and Javan rhinoceros	1A

Table B16: Artiodactyla (Clade Cetartiodactyla)

Family	**Genus**	**Common name**	**Risk category**
Suidae	*Babyrousa*	Babirusa	1
Suidae	*Hylochoerus*	Giant forest hog	1
Suidae	*Phacochoerus*	Wart hog	1
Suidae	*Potamochoerus*	Bush pig and red river hog	1
Suidae	*Sus*	Wild boar (wild species)	1
Tayassuidae	*Catagonus*	Chacoan peccary	1
Tayassuidae	*Dicotyles*	Collared peccary	1
Tayassuidae	*Tayassu*	White-lipped peccary	1
Camelidae	*Camelus*	Camels	1
Camelidae	*Lama guanicoe*	Guanaco	2
Camelidae	*Vicugna*	Vicuna	2
Antilocapridae	*Antilocapra*	Pronghorn antelope	2
Giraffidae	*Giraffa*	Giraffe	1
Giraffidae	*Okapia*	Okapi	2
Cervidae	*Alces*	Moose and European elk	1
Cervidae	*Axis*	Chital, hog deer	2
Cervidae	*Blastocerus*	Marsh deer	2

Family	Genus	Common name	Risk category
Cervidae	*Cervus*	Red and sika deer, wapiti – adult males	1
Cervidae	*Cervus*	Red and sika deer, wapiti – females and young	2
Cervidae	*Dama*	Fallow deer – adult males	1
Cervidae	*Dama*	Fallow deer - females and young	2
Cervidae	*Elaphurus*	Pere David's deer - adult males	1
Cervidae	*Elaphurus*	Pere David's deer - females and young	2
Cervidae	*Hippocamelus*	Huemul	2
Cervidae	*Hydropotes*	Water deer	1
Cervidae	*Mazama*	South American brocket	2
Cervidae	*Odocoileus*	Mule deer and white-tailed deer - adult males	1
Cervidae	*Odocoileus*	Mule deer and white-tailed deer - females and young	2
Cervidae	*Ozotoceros*	Pampas deer - adult males	1
Cervidae	*Ozotoceros*	Pampas deer - females and young	2
Cervidae	*Rangifer*	Caribou and reindeer - adult males	1
Cervidae	*Rangifer*	Caribou and reindeer - female and young	2
Cervidae	*Rucervus*	Brow-antlered deer - adult males	1
Cervidae	*Rucervus*	Brow-antlered deer - females and young	2
Cervidae	*Rusa*	Spotted deer	2
Bovidae	*All*	Any species, hand - reared male	1
Bovidae	*Addax*	Addax	1
Bovidae	*Aepyceros*	Impala	2
Bovidae	*Alcelaphus*	Hartebeest	2
Bovidae	*Ammodorcas*	Dibatag	2
Bovidae	*Ammotragus*	Aoudad or barbary sheep	2
Bovidae	*Antidorcas*	Springbok	2
Bovidae	*Antilope*	Blackbuck	2
Bovidae	*Bison*	American bison and wisent	1A
Bovidae	*Bos*	Ankole, banteng, yak and kouprey (wild and larger exotic domesticated species)	1
Bovidae	*Bos*	Gaur	1A

Family	Genus	Common name	Risk category
Bovidae	*Bos*	Other species	2
Bovidae	*Boselaphus*	Nilghai – adult male	1
Bovidae	*Boselaphus*	Nilghai - female and young	2
Bovidae	*Bubalus*	Anoa, tamarau and water buffalo	1
Bovidae	*Budorcas*	Takin	1
Bovidae	*Capra*	Tur, markhor, ibex and wild goats (wild species) - adult males	1
Bovidae	*Capra*	Tur, markhor, ibex and wild goats (wild species) - females and young	2
Bovidae	*Capricornis*	Serow	2
Bovidae	*Cephalophus*	Duiker	2
Bovidae	*Connochaetes*	Wildebeest or gnu	1
Bovidae	*Damaliscus*	Bontebok, blesbok, topi and Hunter's hartebeest	2
Bovidae	*Gazella*	Gazelle	2
Bovidae	*Hemitragus*	Tahr	2
Bovidae	*Hippotragus niger*	Sable antelope	1
Bovidae	*Hippotragus equinus*	Roan antelope	1
Bovidae	*Kobus ellipsiprymnus*	Common waterbuck - adult males	1
Bovidae	*Kobus ellipsiprymnus*	Common waterbuck - females and young	2
Bovidae	*Kobus defassa*	Defassa waterbuck - adult males	1
Bovidae	*Kobus defassa*	Defassa waterbuck - females and young	2
Bovidae	*Kobus kob*	Kob - adult males	1
Bovidae	*Kobus kob*	Kob - females and young	2
Bovidae	*Kobus leche*	Red lechwe	2
Bovidae	*Kobus megaceros*	Nile lechwe	2
Bovidae	*Kobus vardoni*	Puku	2
Bovidae	*Litocranius*	Gerenuk	2
Bovidae	*Nemorhaedus*	Goral	2
Bovidae	*Oreamnos*	Rocky mountain goat - adult males	1
Bovidae	*Oreamnos*	Rocky mountain goat - females and young	2
Bovidae	*Oryx*	Oryx and gemsbok	1
Bovidae	*Ovibos*	Musk ox	1
Bovidae	*Ovis*	Argali and bighorn (large wild species) - adult males	1

Family	Genus	Common name	Risk category
Bovidae	*Ovis*	Argali and bighorn (large wild species) - adult females	2
Bovidae	*Ovis*	Mouflon and urial (small wild species)	2
Bovidae	*Pantholops*	Tibetan antelope or chiru	2
Bovidae	*Pelea*	Rhebok	2
Bovidae	*Procapra*	Chinese gazelle	2
Bovidae	*Pseudois*	Bharal	2
Bovidae	*Redunca*	Reedbuck	2
Bovidae	*Rupicapra*	Chamois	2
Bovidae	*Saiga*	Saiga	2
Bovidae	*Sylvicapra*	Common duiker	2
Bovidae	*Synceros*	African buffalo	1A
Bovidae	*Taurotragus*	Eland and giant eland	1
Bovidae	*Tetracerus*	Four-horned antelope	2
Bovidae	*Tragelaphus*	Nyala, bushbuck, sitatunga, kudu and bongo - adult males	1
Bovidae	*Tragelaphus*	Nyala, bushbuck, sitatunga, kudu and bongo - female and young	2
Hippopotamidae	*Choeropsis*	Pygmy hippopotamus	1
Hippopotamidae	*Hippopotamus*	Hippopotamus	1A
Delphinidae	*Feresa*	Pygmy killer whale	1
Delphinidae	*Globicephala*	Pilot whales	1
Delphinidae	*Grampus*	Risso’s dolphin	2
Delphinidae	*Orcinus*	Killer whale	1A
Delphinidae	*Pseudorca*	False killer whale	1
Delphinidae	*Tursiops*	Bottle-nosed dolphin	1
Monodontidae	*Monodon*	Narwhal - adult males	2
Physeteridae	*Kogia*	Pygmy sperm whale	2
Ziphiidae	*Berardius*	Arnoud’s and Baird’s beaked whale	2
Ziphiidae	*Hyperoodon*	Bottle-nosed whale	2
Ziphiidae	*Mesoplodon*	Beaked whale	2
Ziphiidae	*Tasmacetus*	Tasman whale	2
Ziphiidae	*Ziphius*	Cuvier’s beaked whale	2

Birds

Table B17: Struthioniformes

Family	Genus	Common name	Risk category
Struthionidae	*Struthio*	Ostrich	1K

Table B18: Rheiformes

Family	Genus	Common name	Risk category
Rheidae	*Rhea*	Rheas	2K

Table B19: Casuariiformes

Family	Genus	Common name	Risk category
Casuariidae	*Casuarius*	Cassowary	1K
Casuariidae	*Dromaius*	Emu	2K

Table B20: Anseriformes

Family	Genus	Common name	Risk category
Anhimidae	All	Screamer	2
Anatidae	*Plectopterus*	Spurwinged goose	2

Table B21: Otidiformes

Family	Genus	Common name	Risk category
Otididae	*Ardeotis*	Kori and large bustard	2
Otididae	*Chlamydotis*	Houbara bustard	2

Table B22: Caprimulgiformes

Family	Genus	Common name	Risk category
Steatornithidae	*Steatornis*	Oilbird	2
Podargidae	All	Frogmouth	2
Caprimulgidae	All	Nightjar	2
Aegothelidae	*Aegotheles*	Owlet nightjar	2

Table B23: Gruiformes

Family	Genus	Common name	Risk category

Gruidae	*Anthropoides*	Blue and demoiselle crane	2P
Gruidae	*Balearica*	Crowned crane	2P
Gruidae	*Bugeranus*	Wattled crane	2P
Gruidae	*Grus*	Crane	2P

Table B24: Charadriiformes

Family	Genus	Common name	Risk category
Stercorariidae	*Stercorarius*	Skua	2

Table B25: Sphenisciformes

Family	Genus	Common name	Risk category
Spheniscidae	All	Penguins	2

Table B26: Ciconiiformes

Family	Genus	Common name	Risk category
Ciconiidae	*Anastomus*	Open-bill stork	2P
Ciconiidae	*Ciconia ciconia*	White stork	2P
Ciconiidae	*Ciconia episcopus*	White-necked stork	2P
Ciconiidae	*Ciconia nigra*	Black stork	2P
Ciconiidae	*Ephippiorhynchus*	Saddle-billed stork	2P
Ciconiidae	*Euxenura*	Maguari stork	2P
Ciconiidae	*Ibis*	Painted stork (note: not ibis)	2P
Ciconiidae	*Jabiru*	Jabiru	2P
Ciconiidae	*Leptoptilos*	Marabou and adjutant stork	2P
Ciconiidae	*Mycteria*	Wood stork	2P
Ciconiidae	*Xenorhynchus*	Black-necked stork	2P

Table B27: Pelecaniformes

Family	Genus	Common name	Risk category
Ardeidae	*Ardea cinerea*	Grey heron	2P
Ardeidae	*Ardea herodias*	Great blue heron (includes great white heron)	2P
Ardeidae	*Ardea purpurea*	Purple heron	2P
Ardeidae	*Ardea goliath*	Goliath heron	2P
Ardeidae	*Ardea imperialis*	Great white-bellied heron	2P
Ardeidae	*Egretta alba*	Great egret	2P
Pelecanidae	*Pelecanus conspicillatus*	Australian pelican	2
Pelecanidae	*Pelecanus crispus*	Dalmatian pelican	2
Pelecanidae	*Pelecanus erythrorhynchus*	American white pelican	2
Pelecanidae	*Pelecanus occidentalis*	Brown pelican	2
Pelecanidae	*Pelecanus onocrotalus*	Great white pelican	2

Table B28: Cathartiformes

Family	Genus	Common name	Risk category
Cathartidae	*Cathartes*	Turkey and yellow-headed vulture	2
Cathartidae	*Coragyps*	American black vulture	2
Cathartidae	*Gymnogyps*	Californian condor	1
Cathartidae	*Vultur*	Andean condor	1
Cathartidae	*Sarcorhamphus*	King vulture	2

Table B29: Accipitriformes

Family	Genus	Common name	Risk category
Sagittariidae	*Sagittarius*	Secretary bird	2
Accipitridae	*Accipiter*	Hawk, sparrow hawk and goshawk	2
Accipitridae	*Aegypius*	European black vulture	2
Accipitridae	*Aquila*	Eagle	2

Family	Genus	Common name	Risk category
Accipitridae	*Aviceda*	Cuckoo falcon and lizard hawk	2
Accipitridae	*Busarellus*	Black-collared hawk	2
Accipitridae	*Butastur*	Grey-faced buzzard-eagle	2
Accipitridae	*Buteo*	Buzzard	2
Accipitridae	*Buteogallus*	Savannah hawk and solitary eagle	2
Accipitridae	*Chelictinia*	Scissor-tailed kite	2
Accipitridae	*Chondrohierax*	Hook-billed kite	2
Accipitridae	*Circaetus*	Snake eagle	2
Accipitridae	*Circus*	Harrier	2
Accipitridae	*Dryotriorchis*	Congo snake eagle	2
Accipitridae	*Elanoides*	Swallow-tailed kite	2
Accipitridae	*Elanus*	Kite	2
Accipitridae	*Erythrotriorchis*	Red goshawk	2
Accipitridae	*Eutriorchis*	Madagascar serpent eagle	2
Accipitridae	*Gampsonyx*	Pearl kite	2
Accipitridae	*Geranoaetus*	Black-chested buzzard-eagle	2
Accipitridae	*Geranospiza*	Crane hawk	2
Accipitridae	*Gypaetus*	Bearded vulture	2
Accipitridae	*Gypohierax*	Palm-nut vulture	2
Accipitridae	*Gyps*	Vulture and griffon vulture	2
Accipitridae	*Haliaeetus*	Bald, sea and fish eagle	2
Accipitridae	*Haliastur*	Brahminy and whistling kite	2
Accipitridae	*Hamirostra*	Black-breasted buzzard	2
Accipitridae	*Harpagus*	Kites	2
Accipitridae	*Harpia*	Harpy eagle	1
Accipitridae	*Harpyopsis*	New Guinea harpy eagle	1
Accipitridae	*Henicopernis*	Long-tailed and black honey buzzard	2
Accipitridae	*Hieraaetus*	Eagles	2
Accipitridae	*Ichthyophaga*	Grey-headed fishing eagle	2
Accipitridae	*Ictinaetus*	Black eagle	2
Accipitridae	*Ictinia*	Kites	2
Accipitridae	*Kaupifalco*	Lizard buzzard	2
Accipitridae	*Leptodon*	Grey-headed kite	2
Accipitridae	*Leucopternis*	Hawk	2

Family	Genus	Common name	Risk category
Accipitridae	*Lophaetus*	Long-crested eagle	2
Accipitridae	*Lophoictinia*	Square-tailed kite	2
Accipitridae	*Macheirhamphus*	Bat hawk	2
Accipitridae	*Megatriorchis*	Doria's hawk	2
Accipitridae	*Melierax*	Chanting goshawk	2
Accipitridae	*Milvus*	Black and red kite	2
Accipitridae	*Morphnus*	Crested eagle	2
Accipitridae	*Necrosyrtes*	Hooded vulture	2
Accipitridae	*Neophron*	Egyptian vulture	2
Pandionidae	*Pandion*	Osprey	2
Accipitridae	*Parabuteo*	Harris' hawk	2
Accipitridae	*Pernis*	Honey buzzard	2
Accipitridae	*Pithecophaga*	Philippine eagle	1
Accipitridae	*Polemaetus*	Martial eagle	1
Accipitridae	*Polyboroides*	African harrier hawk	2
Accipitridae	*Rostrhamus*	Kite	2
Accipitridae	*Sarcogyps*	Red-headed vulture	2
Accipitridae	*Spilornis*	Serpent eagle	2
Accipitridae	*Spizaetus*	Hawk-eagle	2
Accipitridae	*Stephanoaetus*	Crowned eagle	1
Accipitridae	*Terathopius*	Bateleur	2
Accipitridae	*Torgos*	Lappet-faced vulture	2
Accipitridae	*Trigonoceps*	White-headed vulture	2
Accipitridae	*Urotriorchis*	African long-tailed hawk	2

Table B30: Strigiformes

Family	Genus	Common name	Risk category
Strigidae	*Aegolius*	Saw-whet owl	2
Strigidae	*Asio*	Short-eared owl	2
Strigidae	*Athene*	Little and burrowing owl	2
Strigidae	*Bubo*	Eagle-owl and snowy owl - adults breeding or with young	1
Strigidae	*Bubo*	Eagle-owl and snowy owl - other adults	2
Strigidae	*Ciccaba*	Owl	2
Strigidae	*Ketupa*	Fish owl	2
Strigidae	*Micrathene*	Elf owl	2
Strigidae	*Nesasio*	Fearful owl	2

Family	Genus	Common name	Risk category
Strigidae	*Ninox*	Boobok	2
Strigidae	*Otus*	Scops owl	2
Strigidae	*Pseudoscops*	Jamaican owl	2
Strigidae	*Ptilopsos*	White-faced owl	2
Strigidae	*Pulsatrix*	Spectacled owl	2
Strigidae	*Scotopelia*	Fishing owl	2
Strigidae	*Strix*	Wood owls	2
Strigidae	*Surnia*	Hawk-owl	2
Strigidae	*Uroglaux*	Papuan boobok	2
Tytonidae	*Phodilus*	Bay owl	2
Tytonidae	*Tyto*	Barn owl	2

Table B31: Bucerotiformes

Family	Genus	Common name	Risk category
Bucerotidae	*Aceros*	Rufous-necked hornbill	2
Bucerotidae	*Anorrhinus*	Bushy-crested hornbill	2
Bucerotidae	*Anthracoceros*	Hornbill	2
Bucerotidae	*Berenicornis*	White-crested hornbill	2
Bucerotidae	*Buceros*	Hornbill	2
Bucerotidae	*Bucorvus*	Ground hornbill	2P
Bucerotidae	*Bycanistes*	Hornbill	2
Bucerotidae	*Ceratogymna*	Black-casqued and yellow-casqued hornbill	2
Bucerotidae	*Penelopides*	Hornbill	2
Bucerotidae	*Ptilolaemus*	White-throated brown hornbill	2
Bucerotidae	*Rhinoplax*	Helmeted hornbill	2
Bucerotidae	*Tockus*	Hornbill	2

Table B32: Falconiformes

Family	Genus	Common name	Risk category
Falconidae	*Caracara*	Caracara	2P
Falconidae	*Daptrius*	Caracara	2P

Falconidae	*Falco*	Kestrel and falcon	2
Falconidae	*Herpetotheres*	Laughing falcon	2
Falconidae	*Micrastur*	Forest falcon	2
Falconidae	*Microhierax*	Falconets	2
Falconidae	*Milvago*	Milvago caracara	2P
Falconidae	*Spiziapteryx*	Spot-winged falconet	2

Table B33: Psittaciformes

Family	Genus	Common name	Risk category
Strigopidae	*Nestor*	Kaka and kea	2
Strigopidae	*Strigops*	Kakapo	2
Cacatuidae	*Calyptorhynchus*	Red-tailed black cockatoo	2
Cacatuidae	*Cacatua*	Cockatoo and corella	2
Cacatuidae	*Callocephalon*	Gang-gang cockatoo	2
Cacatuidae	*Eolophus*	Galah	2
Cacatuidae	*Probosciger*	Palm cockatoo	2
Cacatuidae	*Zanda*	Yellow-tailed black cockatoo	2
Psittacidae	*Amazona*	Amazon parrot	2
Psittacidae	*Anodorhynchus*	Hyacinthine and indigo macaw	2
Psittacidae	*Ara*	Macaws	2
Psittacidae	*Coracopsis*	Vasa parrots	2
Psittacidae	*Cyanopsitta*	Spix's macaw	2
Psittacidae	*Psittacus*	Grey parrot	2

Table B34: Passeriformes

Family	Genus	Common name	Risk category
Corvidae	*Corvus albicollis*	African white-necked raven	2
Corvidae	*Corvus corax*	Common raven	2
Corvidae	*Corvus coronoides*	Australian raven	2
Corvidae	*Corvus crassirostris*	Thick-billed raven	2
Corvidae	*Corvus cryptoleucus*	White-necked raven	2
Corvidae	*Corvus mellori*	Little raven	2
Corvidae	*Corvus rhipidurus*	Fan-tailed raven	2
Corvidae	*Corvus ruficollis*	Brown-necked raven	2

Reptiles

Table B35: Testudines

Family	Genus	Common name	Risk category
Chelidae	*Chelodina*	Snake-necked turtles	2
Chelydridae	*Chelydra*	Snapping turtle	1
Chelidae	*Elseya*	Australian snapping turtle	2
Chelydridae	*Macrochelys*	Alligator snapping turtle	1
Testudinidae	*Aldabrachelys gigantea*	Aldabra giant tortoise	2
Testudinidae	*Centrochelys*	African spurred tortoise (over 0.3m carapace length)	2
Testudinidae	*Chelonoidis niger*	Galapagos giant tortoise	2
Testudinidae	*Testudo species*	Common tortoise (over 0.3m carapace length)	2
Cheloniidae	*Caretta*	Loggerhead turtle	2
Cheloniidae	*Chelonia*	Green turtle	2
Cheloniidae	*Eretmochelys*	Hawksbill turtle	2
Cheloniidae	*Lepidochelys*	Ridley sea turtle	2
Carettochelyidae	*Carettochelys*	Fly river turtle	2
Trionychidae	*Chitra*	Softshell turtles	2
Trionychidae	*Cyclanorbis*	Nubian and Senegal softshell turtle	2
Trionychidae	*Cycloderma*	Aubrey's and Zambezi flapshell turtle	2
Trionychidae	*Dogania*	Malayan softshell turtle	2
Podocnemididae	*Erymnochelys*	Madagascan big-headed turtle	2
Trionychidae	*Lissemys*	Softshell terrapin	2
Trionychidae	*Nilssonia*	Softshell turtle	2
Trionychidae	*Pelochelys*	Softshell turtle	2
Trionychidae	*Podocnemis*	River turtles	2
Trionychidae	*Trionyx*	Softshell turtle	2

Table B36: Squamata

Family	Genus	Common name	Risk category
Helodermatidae	*Heloderma*	Gila monster and bearded lizard	1V
Varanidae	*Varanus* species	All specimens greater than 0.6m snout to vent	1
Varanidae	*Varanus* species	All specimens less than 0.6m snout to vent	2

Family	Genus	Common name	Risk category
Teiidae	Tupinambinae: *Crocodilurus, Dracaena, Salvator*, and *Tupinambis* species	All specimens more than 0.6m snout to vent	1
Teiidae	Tupinambinae: *Crocodilurus, Dracaena, Salvator*, and *Tupinambis* species	All specimens less than 0.6m snout to vent	2
Boidae	All	Python and boa - all specimens over 3m	1
Boidae	All	Python and boa - all smaller specimens	2
Colubridae	All	Opisthoglyphous or rear-fanged species (unless noted below)	2V
Colubridae	*Dispholidus*	Boomslang	1V
Colubridae	*Elapomorphus lemniscatus*	Argentine black-headed snake	1V
Colubridae	*Mapolon*	Montpelier snake	1V
Colubridae	*Philodryas olfersii*	South American green racer	1V
Colubridae	*Rhabdophis subminiatus*	Red-necked keelback	1V
Colubridae	*Rhabdophis tigrinus*	Yamakagashi	1V
Colubridae	*Tachymenis peruviana*	Peruvian racer	1V
Colubridae	*Thelotornis*	Twig snake	1V
Colubridae	*Xenodon severus*	Amazon false fer-de-lance	1V
Atractaspididae	All	All species	1V
Elapidae	All	All species	1V
Viperidae	All	All species	1V

Table B37: Crocodilia

Family	Genus	Common name	Risk category
Alligatoroidae, Crocodylidae, and Gavialidae	All species of the Order Crocdilia	All specimens more than 0.6m snout to vent	1
Alligatoroidae, Crocodylidae, and Gavialidae	All species of the Order Crocdilia	All specimens less than 0.6m snout to vent	2

Amphibians

Table B38: Urodela

Family	Genus	Common name	Risk category
Cryptobranchidae	All	Giant salamander - all specimens more than 0.8m snout to vent	1
Cryptobranchidae	All	Giant salamander - all specimens less than 0.8m snout to vent	2
Amphiumidae	*Amphiuma*	Congo eel	2
Salamandridae	All species, excluding larvae	True salamander and newts	2V

Table B39: Anura

Family	Genus	Common name	Risk category
Dendrobatidae	Dendrobatinae	Poison arrow frog (wild caught only)	1V
Aromobatidae	*Hyloxalus*	Cryptic poison frog (wild caught only)	1V
Bufonidae	*Dendrophryniscus*	True toad	2V

Fish

Table B40: Anguilliformes

Family	Genus	Common name	Risk category
Congridae	*Conger*	Conger eel	2
Muraenidae	All	Moray eel	2

Table B41: Esociformes

Family	Genus	Common name	Risk category
Esocidae	*Esox*	Pike	2

Table B42: Cypriniformes

Family	Genus	Common name	Risk category
Serrasalmidae	*Colossoma*	Pacu	2
Serrasalmidae	*Piaractus*	Pacu	2
Serrasalmidae	*Serrasalmus*	Piranha	2
Electrophoridae	*Electrophorus*	Electric eel	1E

Table B43: Siluriformes

Family	Genus	Common name	Risk category
Ariidae	All	Sea catfish	2V
Malapteruridae	*Malapterurus*	Electric catfish	1E
Ictaluridae	All	Catfish	2V

Table B44: Batrachoidiformes

Family	Genus	Common name	Risk category
Batrachoididae	*Thalassophryne*	Toadfish	1V
Batrachoididae	*Daector*	Toadfish	1V

Table B45: Scorpaeniformes

Family	Genus	Common name	Risk category
Scorpaenidae	All	Lionfish and scorpionfish	2V
Scorpaenidae	Synanceidae	Stonefish	1V

Table B46: Perciformes

Family	Genus	Common name	Risk category
Sphyraenidae	*Sphyraena*	Barracuda	2
Trachinidae	*Trachinus*	Weever fish	2V
Uranoscopidae	*Astroscopus*	Stargazer	1V
Siganidae	*Siganus*	Rabbitfish	2V

Table B47: Tetraodontiformes

Family	Genus	Common name	Risk category
Balistidae	*Melichthys*	Triggerfish (larger than 20cm)	2

Table B48: Lamniformes

Family	Genus	Common name	Risk category
All	All	All sharks more than 1.5m	1
Alopiidae	*Alopias*	Thresher shark	1
Carcharhinidae	*Carcharhinus amblyrhynchos*	Grey reef shark	1
Carcharhinidae	*Carcharhinus limbatus*	Atlantic blacktip shark	1
Carcharhinidae	*Carcharhinus melanopterus*	Blacktip reef shark	1
Carcharhinidae	*Carcharhinus plumbeus*	Sandbar shark and brown shark	1
Carcharhinidae	*Galeocerdo cuvier*	Tiger shark	1
Carcharhinidae	*Negaprion brevirostris*	Lemon shark	1
Carcharhinidae	*Triaenodon obesus*	Whitetip reef shark	1
Hexanchidae	*Hexanchus*	Comb-toothed shark	1
Lamnidae	*Lamna*	Porbeagle	1
Odontaspididae	*Carcharias*	Sand shark	1
Orectolobidae	*Ginglymostoma*	Carpet shark and nurse shark	2
Squatinidae	*Squatina*	Wobegong shark and angel shark	1
Sphyrnidae	*Sphyrna*	Hammerhead shark	1

Table B49: Chimaeriformes

Family	Genus	Common name	Risk category
Chimaeridae	*Hydrolagus*	Ratfish	2

Table B50: Lophiiformes

Family	Genus	Common name	Risk category
Lophiidae	*Lophius*	Monkfish	2

Table B51: Myliobatiformes

Family	Genus	Common name	Risk category
Myliobatida	*Aetobatus*	Cownose, eagle and bat ray	2V
Potamotrygonidae	*Potamotrygon*	Freshwater stingray	2V
Torpedinidae	*Torpedo*	Electric ray	1E

Arthropods

Table B52: Araneae

Family	Genus	Common name	Risk category
Theridiidae	*Latrodectus*	Black widow or redback spider	1V
Sicariidae	*Loxosceles*	Brown recluse or violin spider	1V
Sicariidae	*Scicarius*	Sand spider	1V
Hexathelidae	*Atrax*	Australian funnel-web spider	1V
Ctenidae	*Phoneutria*	Wandering spider	1V
Theraphosidae	*Grammostola*	New world bird-eating spider or tarantula	2
Theraphosidae	*Pelinobius*	Old world bird-eating spider or tarantula	2V

Table B53: Scorpiones

Family	Genus	Common name	Risk category
Buthidae	All	Buthid scorpion	1V
Scorpionidae	*Hemiscorpius lepturus*	Iranian scorpion	1V
Scorpionidae	*Leiurus*	Deathstalker	2V
Scorpionidae	*Scorpio maurus*	Israeli gold scorpion	2V

Table B54: Uropygi

Family	Genus	Common name	Risk category
Thelyphonidae	*Thelyphonida*	Vinegaroon or whip scorpion	2

Table B55: Scolopendromorpha

Family	Genus	Common name	Risk category
Scolopendridae	*Scolopendra*	Giant centipede	2V

Table B56: Spirobolida

Family	Genus	Common name	Risk category
Pachybolidae	*Aphistogoniulus coralipes*	Malagasy fire millipede	2
Rhinocricidae	*Adenobolus monilicornis*	Bumblebee millipede	2

Table B57: Spirostreptida

Family	Genus	Common name	Risk category
Spirostreptidae	*Archispirostreptus*	Giant African millipede	2
Spirostreptidae	*Ophistreptus*	Giant African millipede	2
Spirostreptidae	*Spirostreptus*	Giant African millipede	2
Spirostreptidae	*Telodeinopus*	Giant African millipede	2

Table B58: Phasmida

Family	Genus	Common name	Risk category
Pseudophasmatidae	*Anisomorpha*	Walking stick insect	2
Pseudophasmatidae	*Neophasma*	Walking stick insect	2
Pseudophasmatidae	*Peruphasma*	Walking stick insect	2
Pseudophasmatidae	*Pseudophasma*	Walking stick insect	2
Phasmatidae	*Eurycantha calcarata*	Spiny stick insect - mature males	2

Table B59: Hemiptera

Family	Genus	Common name	Risk category
Belostomatidae	*Abedus*	Water bug	2
Belostomatidae	*Belostoma*	Water bug	2
Belostomatidae	*Lethocercus*	Water bug	2
Reduviidae	*All species*	Assassin bugs	2

Table B60: Stomatopoda

Family	Genus	Common name	Risk category
Odontodactylidae	*Squilla*	Mantis shrimp	2

Table B61: Decapoda

Family	Genus	Common name	Risk category
Nephropidae	*Homarus*	Lobster (large specimens >30cm)	2
Coenobitiae	*Cancer*	Robber crab	2

Echinoderms

Table B62: Echinodermata

Family	Genus	Common name	Risk category
Diadematidae	*Diadema*	Long-spined sea urchin	2

Molluscs

Table B63: Mollusca

Family	Genus	Common name	Risk category
Octopodidae	*Enteroctopus spp.*	Giant octopus	1V
Octopodidae	*Hapalochlaena*	Blue-ringed octopus	1V
Octopodidae	*Octopus vulgaris*	Common octopus	2V
Sepiidae	*Metasepia pfefferi*	Flamboyant cuttlefish	1V
Sepiidae	*Sepia bandensis*	Dwarf cuttlefish	1V
Sepiidae	*Sepia officinalis*	Common cuttlefish	2V

Table B64: Gastropoda

Family	Genus	Common name	Risk category
Conidae	*Conus* (medically significant species)	Cone shell	1V

Cnidaria

Table B65: Anthoathecata

Family	Genus	Common name	Risk category
Milleporidae	*Millepora* spp.	Fire coral	2

Table B66: Zoantharia

Family	Genus	Common name	Risk category
Zoanthids	*Zoanthus*	Palytoxin producing zoanthids	1

Taxonomic references

- **Mammals:**
  - Multiple authors (2009-2019) The Handbook of the Mammals of the World, Lynx Edicions, Barcelona, 9 Volumes
  - Burgin, C.J., Wilson, D.E., Mittermeier, R.A., Rylands, A.B., Lacher, T.E., and Sechrest, W. (2020) Illustrated Checklist of the Mammals of the World, Lynx Edicions, Barcelona, 2 Volumes
- **Birds:**
  - Clements, J. F., Schulenberg, T. S., Iliff, M. J., Fredericks, T. A., Gerbracht J. A., Lepage, D., Billerman , . M., Sullivan, B. L., and Wood, C. L. (2022) The eBird/Clements checklist of Birds of the World: v2022. Downloaded from https://www.birds.cornell.edu/clementschecklist/download/
- **Reptiles:**
  - Integrated Taxonomic System, www.itis.gov
- **Amphibia:**
  - Integrated Taxonomic System www.itis.gov, and
  - Stuart, S., Hoffmann, M., Chanson, J., Cox, N., Berridge, R., Ramani, P., and Young, B. (2008) Threatened Amphibians of the World, IUCN , Conservation International and Lynx Edicions, 1st Edition.
- **Arthropods:** Secretary of State's Standards of Modern Zoo Practice (2012)
- **Fish:** Integrated Taxonomic System www.itis.gov

Other: Secretary of State's Standards of Modern Zoo Practice (2012)

Appendix C: Summary of documentation required for inspection

Preface

This appendix provides an overview of the documentation required for inspection as outlined in the Standards. The Zoo Licensing Act (1981) as amended requires that a Licence Holder maintains up-to-date records (Section 1A(f)) and that these are made available to the inspector upon request (Section 9A (14)).

C1 The following list is not a definitive list of documents that may be required at inspection, but is the list of the documents required to be compliant with the Standards. Zoo inspectors may request additional documentation as may be required to ensure that the Standards and the Act are being complied with. All documentation must be to the satisfaction of the Licensing Authority and/or the zoo inspectors.

C2 The documentation required for inspection are listed by Section and the corresponding standard is listed for reference. Each Section summary includes a check sheet to aid the Licence Holders (ZLH) in auditing their own compliance against the required documentation and a check list for the zoo inspector (ZI).

C3 Where documents are required in Appendix A: Specialist Exhibits these only apply where the zoo contains the species described; all other documentation is required to be produced by the Licence Holder where they apply.

C4 Where standard operating procedures are required these are labelled as ‘SOP’.

C5 Where safe systems of work are required these are labelled as ‘SSOW’.

C6 In Section 10, as per the Act, only one of the five Section 1A(a) Conservation Measures needs to be undertaken. Therefore, the Licence Holder or zoo operator can choose to meet the requirements of the Act by complying with a minimum of one of the optional Section 1A(a) Conservation Measures available. More than one conservation measure can be undertaken by a Licence Holder, but the required documentation requirements for each measure must be complied with. Where the Licence Holder chooses not to undertake an individual Section 1A(a) Conservation Measures the required documentation is not required. The Licence Holder is reminded that they must implement all of the other mandatory conservation measures that are listed in Section 1A (b) to (f) of the Act.

Documents

Section 1: General requirements

Section	Document	ZLH	ZI
1.2	The zoo licence, including any additional conditions		
1.6	Contingency and succession policy		
1.7	Evidence of public liability insurance		
1.8	Evidence of employee liability insurance		
1.13	Training programme for animal staff		
1.14	List of all staff authorised to work with the animals		

Section 2: The need for a suitable environment

Section	Document	ZLH	ZI
2.4	Environmental Management Plan (EMP) (where applicable)		
2.10	Tree inspection documentation (see 8.12 and 8.56 also)		
2.18	Life support servicing records (where applicable)		
2.19	Backup facilities testing records (where applicable)		

Section 3: The need for a suitable diet

Section	Document	ZLH	ZI
3.15	Current diet sheets for each species		
3.18	In-house animal slaughter records (where applicable)		
3.22	Procedures to prevent cross contamination (food preparation)		
3.23	Staff operational procedures (staff hygiene at food preparation)		
3.24	Timed separation procedures (food preparation)		
3.27	SOP managing frozen fish and meat		
3.29	Temperature records for food storage freezers		
3.32/3	Live feeding vertebrates – written justification and ethical review		
3.32	Live feeding vertebrates – written training programme		
3.32/3	Live feeding vertebrates – SOP live feeding procedure		
3.32/3	Live feeding vertebrates – feeding events records		
3.32/3	Live feeding vertebrates – monthly ethical review records		
3.32/3	Live feeding vertebrates – training/transition programme review		
3.37	SOP controlled feeding of animals by the public		

Section 4: The need to be able to exhibit normal behaviour patterns

Section	Document	ZLH	ZI
4.6	Programme of enrichment (goals and evaluation)		

Section 5: The need to be housed with, or apart from, other animals

Section	Document	ZLH	ZI
5.2	Isolation of a social animal ethical review		
5.3	Isolation of social animal management plan and ethical review		
5.15	Animal collection plan		

Section 6: The need to be protected from physical and psychological pain, suffering, injury and disease

Section	Document	ZLH	ZI
6.2	Biomes or complex habitat animal surveillance programme		
6.4	Record of abnormal behaviour and steps taken to reduce triggers		
6.5	Daily written records of animal care		
6.8	Copies of the veterinary surgeon's CPD records		
6.12	Programme of Preventive and Curative Veterinary Care		
6.16	Evidence of veterinary visits in line with schedule in Table 6.1		
6.20	SOP regarding biosecurity for isolated or quarantined animals		
6.22	Animal health care records		
6.23	Record of actions carried out at veterinary visits (see also 6.16)		
6.24	Minimum annual review of veterinary records		
6.28	Records of drug stock, usage, storage and disposal		
6.29	SOP euthanasia		
6.32	Emergency euthanasia justification		
6.33	Post-mortem records		
6.37	Annual pathological review (see also 6.24)		
6.39	SOP biosecurity and cleaning protocol		
6.48	Pest control programme and related records		
6.49	Clinical waste records		
6.50	SOP wildlife rehabilitation segregation and biosecurity		

Section 7: Animal acquisition, transport, movement and relinquishment

Section	Document	ZLH	ZI
-	Invasive Alien Species permit (APHA)		
-	Invasive Alien Species transport permit (APHA)		
7.1	Evidence of due diligence regarding transfers of animals		
7.19	Records and ethical review process for wild acquisitions		
7.26	Wild release programme and protocols, pre- and post-release		
7.26	Wild release programme disease risk assessment		
7.26	Wild release programme environmental impact assessment		
7.26	Wild release permissions		
7.28	Evidence of permanent ID of Species of Special Concern		

Section 8: Public safety and escapes

Section	Document	ZLH	ZI
8.3	A map delineating the zoo boundary and zoo perimeter		
8.7	Written permission for Cat 1 or 2 animals to be free-ranging		
8.8	Animal enclosure repair records		
8.9	Records of zoo perimeter checks		
8.10	Records of Cat 1A annual structural integrity enclosure checks		
8.15	Risk Assessment justifying double-doors are not required		
8.18	Records of all animal escapes		
8.21	Escape management procedure		
8.22	Records of escape drills		
8.23	Records of emergency operational drills for aquaria		
8.26	Justification why overhang or anti-climb barrier is not required		
8.29	Records of electric fence checks		
8.31	SSWO and risk assessment for Cat 1A,1 and 2 animal enclosures		
8.32	Justification for removal of stand-off barriers for Cat 1 species		
8.34	Zoonoses surveillance programme		

8.35	Evidence of staff training with regards to zoonoses		
8.36	Evidence of consideration of zoonoses in animal contact areas		
8.39	Drive-through enclosure emergency procedures		
8.43	Evidence of suitable firearms and ammo for species at the zoo		
8.45	Evidence of firearm accuracy		
8.46	Firearms team rota		
8.47	Firearms team training programme		
8.48	Firearms team training records		
8.56	Tree inspection process		
8.56	Tree inspection records and actions taken (see 2.10 and 8.12)		
8.64	Evidence of first aid provision		

Section 9: Animal experiences and contact areas

Section	Document	ZLH	ZI
9.2	Welfare and ethical reviews for each animal experience		
9.2	Records of animal use, illness, deaths, incidents, injuries and/or welfare problems during animal experiences		
9.4	SOP and risk assessment for Cat 1A animal experiences		
9.6	SOP and risk assessment for all animal contact experiences		
9.10	Records of environmental conditions (where required)		
9.11	SOP managing members of the public in animal enclosures		
9.13	Risk assessment that animal contact does not need supervision		
9.15	Training staff on public hand washing		
9.20	SOP and risk assessments for walk-through exhibits		
9.21	SSOW staff intervention protocols in defence of the public		
9.24	Touch pools – register of animals used		
9.24	Touch pools – animal rotation		
9.24	Touch pools – water quality records		
9.24	Touch pools – health check records		
9.26	Touch pools – staff training regarding welfare management		
9.28	Diving in exhibits – SOP safe management of dives		
9.29	Diving in exhibits – records of qualifications (staff)		
9.30	Diving in exhibits – records of qualifications (volunteers/external)		
9.32	Diving in exhibits – evidence of safety briefings		
9.38	Bird demonstrations – risk assessment and mitigation of injury		
9.44	Bird demonstrations – use of Cat 1 or 2 birds		
9.47	Bird demonstrations – SOP permissible restrictive containment		
9.50	Training plans		
9.51	Written policy on approved and non-approved training methods		
9.54	Outreach – evidence environmental conditions maintained		
9.56	Outreach – checklist prior to outreach event		

Section 10: Conservation and research

Section	Document	ZLH	ZI
10.1	Multi-zoo organisations – individual zoo contribution to conservation delivery		
10.2	Conservation Strategy		
10.3	Annual Conservation Summary and evaluation		
10.5	Conservation research - record		
10.5	Conservation research policy ethical review records		
10.5	Conservation research policy		
10.5	Evidence research has been communicated externally		
10.6	Conservation training activities record		
10.7	Evidence of conservation information exchange activities		

10.7	Evidence of conservation information exchange benefits		
10.8	Evidence of conservation breeding activities		
10.9	Evidence of repopulation or reintroduction into the wild		

Section 11: Education

Section	Document	ZLH	ZI
11.1	Education programme details		
11.2	Education strategy		
11.6	Records of education activities and evaluation		

Section 12: Stock records

Section	Document	ZLH	ZI
12.1	Animal records, both individuals and groups as required		
12.2	Zoo collection Annual Stock Record – individual counts		
12.4	Zoo collection Annual Stock Record – group or colony counts		
12.5	Wildlife rehabilitation Annual Stock Record		

Section 13: Ethical review

Section	Document	ZLH	ZI
13.1	Ethical review policy		
13.2	Documented ethical reviews (including meeting minutes)		
13.6	Ethical review of invasive husbandry practices, where applicable		

Appendix A1: Invertebrates

Section	Document	ZLH	ZI
A1.5	Environmental Management Plan (Invertebrates)		
A1.8	Ethical review regarding sourcing from the wild live feed		

Appendix A2: Aquaria

Section	Document	ZLH	ZI
A2.4	Environmental Management Plan (Aquaria)		
A2.5	Water quality monitoring records - exhibits		
A2.7	Acclimation records		
A2.9	Power Cut Action Plan		
A2.10	Water quality monitoring records – incoming water		
A2.13	SOP for capture and transport of aquatic animals		
A2.14	SOP for the monitoring and treatment of wastewater		

Appendix A3: Reptiles and amphibians

Section	Document	ZLH	ZI
A3.2	Environmental Management Plan (Reptiles and amphibians)		
A3.3	Biomes or complex habitat animal surveillance programme (6.2b)		
A3.22	Records evidencing actions taken where parameters were outside expected ranges		
A3.23	Records evidencing provision as per EMP (see A3.57 also)		
A3.55	Seasonal variation recorded on diet sheets, where applicable		
A3.63	Quarterly physical assessments of the reptiles and amphibians		

Appendix A4: Venomous and poisonous species

Section	Document	ZLH	ZI
A4.11	SOP security and access of service areas		
A4.14	Written agreement from local hospital regarding ready access to antivenom, where it is not held on site		
A4.16	Evidence that emergency authorities have been informed of the presence of venomous and/or poisonous species on site		
A4.17	Documented training for staff, including annual review		
A4.19	SSOW and risk assessment for venomous and poisonous species		
A4.19	Emergency procedures for escape of venomous/poisonous sp.		
A4.19	Emergency procedures in response to envenomation		
A4.19	SOP transport of venomous / poisonous sp.		
A4.19	SOP health care, including post-mortem of relevant species		
A4.19	Evidence of annual, or following infrastructure change, review of all SOPs and emergency procedures		
A4.23	Documented evidence of envenomation drill(s)		
A4.25	Confirmation that the veterinary surgeon is willing to work with venomous species and they are appropriately insured to do so		

Section A5: Aquatic birds

Section	Document	ZLH	ZI
A5.3	Environmental Management Plan (Aquatic birds)		
A5.4	Evidence demonstrating efficacy of water management systems		
A5.5	Disease risk assessments where water flows from one exhibit to another		
A5.6	Impact assessments from migratory wild birds, especially waterfowl		
A5.10	Ethical policy and code of practice regarding flight restraint		
A5.14	Avian Influenza management policy		

Section A6: Birds of prey

Section	Document	ZLH	ZI
A6.24	Tethering Policy		
A6.25	Individual Training Programme for each tethered bird		
A6.26	Records demonstrating duration and frequency of tethering during permitted transportation (>4hrs)		
A6.26	Records demonstrating duration and frequency of tethering during permitted veterinary health care (>4hrs)		
A6.26	Records demonstrating duration and frequency of tethering during permitted emergency restraint in case of catastrophe (>4hrs)		
A6.26	Records demonstrating duration and frequency of tethering during all other permitted activities (>4hrs)		
A6.27	Evidence that birds have been flown 5 days or more a week and rationale where they have not		

Section A7: Marine mammals

Section	Document	ZLH	ZI
A7.1	Pool and land space dimensions of marine mammal enclosure		
A7.5	Environmental Management Plan (Marine mammals)		
A7.6	Water quality monitoring records – exhibits		

A7.11	Water quality monitoring records – incoming water (non-mains)		
A7.14	SOP wastewater disposal		
A7.15	Staff training records pertaining to water quality management		
A7.16	SOP regarding emergencies in marine mammals specific areas		
A7.17	SOP marine mammal animal contact, including bite injury management		

Section A8: Elephants

Section	Document	ZLH	ZI
A8.1	Long-Term Management Plan (LTMP)		
A8.2	Individual Welfare Plan (IWP)		
A8.6	Documented reviews and plan to resolve unstable herds		
A8.9	Documented reviews of compatibility issues and mitigation steps		
A8.32	Records of use of the Elephant Behavioural Welfare Assessment Tool and written plans to address any behavioural issues noted		
A8.39	SSOW staff safe access to elephants		
A8.40	Written approval with regard to restraint methods for elephants		
A8.40	Records of time periods and frequency of restraint events		
A8.43	Training records for staff with regard to restraint methods		
A8.47	Training programme for the elephants		
A8.49	Written justification for the use of ankuses		
A8.49	Training records for staff with regard to the use of ankuses		
A8.53	Training records for staff with regard to the use of electric goads		
A8.54	Written justification for the use of electric goads		
A8.55	Records of time periods and frequency of use of electric goads		

Section A9: Great apes

Section	Document	ZLH	ZI
A9.1	Long-Term Management Plan (LTMP)		
A9.2	Welfare Management Plan (WMP)		
A9.3	Breeding groups – evidence steps being taken to move to stable multi-generational groups		
A9.4	Justification and mitigation steps taken to resolve prolonged separation or compatibility issues of great apes		
A9.13	Environmental Management Plan (Great apes)		
A9.14	Records demonstrating implementation of the EMP		
A9.22	Great ape monthly weights		

END