



Department
for Environment
Food & Rural Affairs



Llywodraeth Cymru
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The Scottish
Government
Riaghaltas na h-Alba

Standards of Modern Zoo Practice for Great Britain

For consultation

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.

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Introduction

Legislative framework

1. The Zoo Licensing Act 1981 (hereafter 'the Act') regulates zoos in England, Scotland, and Wales. All zoos licensed under the Act are required to comply with the Standards of Modern Zoo Practice for Great Britain (hereafter 'the Standards'). Zoo licence holders are ultimately responsible for ensuring these Standards are met.
2. These Standards must be complied with 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 \(2021\)](#) (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 5 animal 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. The UK [Zoos Expert Committee \(ZEC\) Handbook](#) contains supplementary guidance to the Standards. The best practice guidance on the management of zoos and aquariums contained in the ZEC Handbook is not mandatory, but all zoos are encouraged to follow it.
5. 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

6. The Standards have been formulated to meet 4 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
 - to assist local authorities in determining whether to grant or renew 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 a clear and transparent basis for robust enforcement of zoo licence requirements
7. The Standards are a crucial aid to assist local authorities in determining whether to grant or refuse a zoo licence. A local authority must refuse a licence if it is satisfied that any of the standards will not be met. The local authority must consider the zoo inspection report when determining whether or not to grant a zoo licence. All zoo inspection reports¹ are based on the Act and these Standards.

Overview of the standards and explanatory notes

8. The Standards contain sections on the 5 Animal 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.
9. Sections 1 to 14 contain general standards that are applicable to a wide range of species and exhibits. Further standards on specific species are covered in appendices on 'Specialist Exhibits'. These appendices must be reviewed by zoo licence holders and operators and, where applicable, the standards adhered to.
10. Some of the individual standards may not be applicable to all zoos. For instance, standards on touch pools will not be relevant to falconry centres. In these cases, the standard will specify the type of animal or exhibit to which it applies.
11. Special attention must be paid to the list of hazardous animals in Appendix 2 on 'Hazardous Animal Categorisation'. Where a standard refers to a 'category 1 listed' or 'category 2 listed' animal, this is in relation to Appendix 2.

¹ [Guidance on zoo inspections](#)

12. Each standard comprises a mandatory 'must' and may, in some cases, contain additional information under 'explanatory notes' to assist users. These explanatory notes are also mandatory.
13. Failure to meet a standard will constitute a breach of the zoo's licence. In such cases, the local authority must issue an enforcement direction to the licence holder, requiring compliance with the specific standard in question. Failure to comply with a direction within the specified timeframe may lead to part or full closure of the zoo and further legal proceedings.

Interpretation of terms used

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

- 'animal' means animals of the classes Mammalia, Aves, Reptilia, Amphibia, Pisces and Insecta (any mammal, bird, reptile, amphibian, fish, or insect) 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
- 'collection' means all the animals held in the zoo collection. This includes animals that are on and off display and animals that are wild and domesticated
- 'enclosure' means any accommodation provided for zoo animals
- 'enclosure barrier' means a physical barrier to contain an animal within an enclosure
- 'hazardous animal' means any animal listed in category 1 or 2 of Appendix 2
- 'keeper' includes any person employed under the direction of a keeper
- 'licence holder' means the person or corporate body listed on the licence granted by the relevant licensing authority for the zoo
- 'member of staff' means any person employed by the licence holder to be involved in the operation or management of the zoo
- 'member of the public' includes visitors who have to make an appointment to visit the zoo and visitors who are members of a private club or organisation 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
- '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
- '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

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 A current copy of the licence must be displayed at the premises where the animals are kept, such as in the entrance or the reception area of the zoo. A copy of the licence must also accompany animals exhibited at other locations away from the zoo premises for outreach activities.

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.

Explanatory notes for standard 1.4

- 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 as the zoo operator.
 - 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.
- 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 involving the ill treatment of animals.

Explanatory notes for standard 1.5

- a) All staff and volunteers (paid and unpaid) must sign a declaration form declaring that they have not been convicted of any offence involving the ill treatment of animals.
- b) 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.

- 1.6** The licence holder must have access to a minimum of 6 months' financial resources required to sustain operations in the event of closure. They must be able to produce a written declaration to support this when requested by inspectors or the licensing authority.
- 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 have insurance cover which covers them and every other person under a contract of service or acting under 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 size of premises
 - b) the layout of the premises
 - c) the competence and experience of staff
 - d) use of part-time or voluntary staff
- 1.10** A senior member of staff must be readily available at all times. This member of staff must be able to make appropriate decisions on behalf of the licence holder or zoo operator (if different).
- 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 written training programme, including professional development opportunities for all animal staff.

Explanatory notes for standard 1.13

- a) The training programme must be reviewed and updated on an annual basis and must include:
 - an induction programme that outlines the expectations and requirements of the employee
 - a process of annual appraisal for individuals
 - planned continued professional development
 - 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) Evidence of staff attendance or completion of the training must be provided.

1.14 A list must be maintained and updated regularly of all staff authorised to work with the animals, including details of 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 at all times. Where any such records are stored in electronic form, they must be able to be readily produced in a visible and legible form. A summary of documentation required for inspection is provided at the end of each section.
- 1.16** All records must be kept for at least 6 years or for the lifetime of the animal, whichever is the longer, beginning with the date on which the record was created. Provision must be made for long-term archiving in a secure format.
- 1.17** All records, paper and electronic, must be backed up electronically.

Documentation required for inspection

This documentation must be available for inspection:

- the zoo licence, including any additional conditions (1.2)
- declaration of financial resources (1.6)
- evidence of public liability insurance (1.7)
- evidence of employee liability insurance (1.8)
- training programme for animal staff (1.13)
- list of staff authorised to work with animals (1.14)

Section 2: The need for a suitable environment

General provisions

- 2.1** All animals must be provided with suitable enclosures. The environmental quality and complexity of enclosures must be suitable for the comfort, welfare and behavioural needs of the species and individual animals at all times, both indoors and outdoors. Enclosures must have appropriate environmental conditions including, but not limited to, levels of:
- a) temperature
 - b) humidity
 - c) ventilation
 - d) lighting
 - e) noise
 - f) salinity
 - g) oxygenation
 - h) pH
 - i) UV
- for the species and each individual animal.
- 2.2** Enclosure design must meet the physical and behavioural needs and the natural history of the animals. This must include appropriate space for the individual animal or social group and adequate resources to prevent undesirable competition or abnormal behavioural signs of stress.
- 2.3** Rotational outdoor or limited period access is not permitted except in the following circumstances:
- a) cleaning or maintenance
 - b) introductions of new animals
 - c) breeding events
 - d) extremes of weather
 - e) medical grounds and veterinary procedures
 - f) other reasonable periods where animals may be closed indoors for a temporary period for management reasons
 - g) ethically approved research
- 2.4** All animals must be provided with the opportunity for shelter and shade for protection against weather. This includes any weather event such as heat, cold, rain and wind.
- 2.5** Refuge areas must be provided to give animals the opportunity to avoid public view.

- 2.6** Enclosures must be designed to allow for an animal's normal defence reactions, allowing animals to remove themselves visually or physically from other individuals in the same or adjacent enclosure.
- 2.7** 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 (for example, sharp or rough edges, electrical hazards) which may present a risk of injury to an animal.
- 2.8** 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.
- 2.9** Any natural or non-natural materials must be assessed for toxicity prior to being introduced to the animals or animal enclosures.
- 2.10** 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.
- 2.11** 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.
- 2.12** Enclosures must be designed and maintained to deter entry by predators.
- 2.13** Where environmental quality and safety in an animal enclosure is dependent on external utilities, adequate backup facilities must be kept on site in case of failure.
- 2.14** All necessary equipment needed to address the servicing, maintenance, and uninterrupted operation of life support systems, along with related consumables (for example, fuel for a generator), must be kept on site.

Section 3: The need for a suitable diet

General provisions

- 3.1** Constant access to fresh, clean drinking water must be provided for the animals that require it.
- 3.2** All animals in the collection must be provided with a diet which 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 veterinary or nutritionist advice. For instance, this can include consulting published veterinary advice or husbandry guidelines, or direct consultation with a veterinary surgeon or zoo animal nutritionist. Sources of evidence must be retained and may be sought during inspections.
- 3.4** Feeding methods must be safe for all animals being fed and staff.
- 3.5** The presentation of food and drink must be appropriate for the species and the individual animals.
- 3.6** The number of receptacles or feeding points used to provide food and drink must be appropriate for the number of animals in the enclosure.
- 3.7** Food and drink must be provided in sufficient quantity to minimise negative interactions and resource guarding.
- 3.8** Receptacles or feeding points used for food and drink must be placed in such a way that they are accessible and available to all animals kept within an 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** The frequency and timing of feeds must be appropriate for the specific species.
- 3.11** Receptacles for food and drink must not be used for any other purposes than providing food and drink to animals.
- 3.12** Food and drink, and their receptacles when used, must be placed in positions which minimise contamination by animals or members of the public.

- 3.13** 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.
- 3.14** 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 food or water that is unfit for consumption.
- 3.15** Uneaten food must be removed from animal enclosures as appropriate to maintain hygiene.
- 3.16** A written record 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. Diets must be reviewed annually and documented.
- 3.17** The current written diet sheet for each species, or individual where applicable, must be maintained at the point of food preparation.
- 3.18** Where an animal or group deviates from the expected intake of diet provided, this must be documented and, where appropriate, the situation assessed, and the diet reviewed to make sure that adequate nutrition is maintained.
- 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** Preparation of food and, where appropriate, drink must be undertaken in a dedicated area suitably designed and constructed whilst separate from the storage area.
- 3.22** Supplies of food and drink must be protected against dampness, deterioration, mould, and contamination by pests.
- 3.23** There must be a procedure in place to avoid cross contamination between equipment, food preparation, utensils, and surfaces.
- 3.24** Meat and fish must be prepared either in separate areas from fruit and vegetables, or by methods of timed separation with thorough cleaning and disinfection between uses. Where timed separation is used, the licence holder must provide written evidence of the timed separation procedure and its implementation.
- 3.25** All staff must observe strict standards of personal hygiene and must conform to good hygiene practice in the preparation of all food types. Provision of information and facilities to support this must be provided.

- 3.26** 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 not be allowed.
- 3.27** Controlled feeding by members of the public must only occur on a selective basis with suitable food 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. Steps must be taken to minimise negative consequences of controlled feeding, such as anticipatory or begging behaviours in animals.
- 3.28** Live feeding of vertebrate prey must not occur.

Documentation required for inspection

This documentation must be available for inspection:

- animal nutrition based on veterinary or nutritionist advice (3.3)
- justification for less than daily cleaning of feeding and drinking utensils (3.13)
- a written record of all animal diets (3.16)
- current diet sheets for each species (3.17)
- procedure to avoid cross contamination (3.23)
- written evidence of a timed separation procedure (3.24)
- information for staff on hygiene (3.25)
- procedure for controlled feeding of animals by the public (3.27)

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 would impair the welfare of the individual animal or other animals either in the long term or short term (for example, predatory behaviours).
- 4.2** Housing and husbandry must take account of the natural habitat of the species and seek to provide sufficient complexity to meet the physiological, behavioural, and psychological needs of the animals.
- 4.3** Enclosures must be equipped in accordance with the needs of the animals with bedding material, branch work, burrows, nesting boxes, pools, substrates and vegetation and other enrichment materials designed to aid and encourage appropriate natural behaviours and prevent the development of abnormal behaviours. Facilities must take into account the growth of animals (individually and as a group) and must be capable of satisfactorily providing for their needs at all stages of their growth and development.
- 4.4** The licence holder must make provision (for example, time during work hours, course fees) for keepers' continuing professional development (CPD). Keepers must take steps to remain current in their knowledge of the natural behaviour, biology, ecology, and husbandry requirements of the species in their care, which must be demonstrated in their husbandry programmes. There must be records to show their continuing professional development.

Explanatory notes for standard 4.4

a) Examples of CPD include (but are not limited to):

- reading relevant journals or articles
- taking relevant accredited courses and further education
- training and shadowing
- attending conferences
- conducting research and participating in specialist interest groups

- 4.5** An active programme of enrichment, appropriate to each species, must be documented and provided to all animals. Enrichment must be changed on a regular basis to introduce novelty and maintain interest.

Explanatory notes for standard 4.5

- a) Enrichment refers to the planned provision of stimulation to an animal's environment. Enrichment encourages choice and change within an animals' enclosure and can be separated into 5 different categories:
- sensory (for example, olfactory to encourage the sense of smell)
 - food-based (for example, scatter feeds to encourage foraging)
 - structural (for example, alteration of climbing frames, ropes or perching)
 - cognitive (for example, puzzle feeders)
 - 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 allow a non-barren environment), even this will become repetitive without the provision of additional, ongoing, and varied enrichment.

Documentation required for inspection

This documentation must be available for inspection:

- records of keepers' continuing professional development (CPD) (4.4)
- programme of enrichment for each species (4.5)

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 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
 - c) to aid the conservation of the species (where this does not compromise the welfare of the individual animal)
 - d) to meet requirements on quarantine and disease management (for example, legislative)
 - e) ethically approved research
- 5.2** The isolation of social animals must be subject to ethical review and must not occur for longer than necessary.
- 5.3** 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.
- 5.4** Mixed species exhibits must be constructed based on available evidence for appropriate mixing. Consideration must be given to the compatibility of species being mixed.
- 5.5** In mixed species exhibits, care must be taken to make sure that the species held do not pose a disease risk to one another.
- 5.6** 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 to limit the potential spread of disease into and out of the collection.
- 5.7** Sufficient resources must be provided for each individual animal in any shared enclosure. All animals within a shared enclosure must be able to undertake similar activities at the same time, such as allowing birds to perch or feed at the same.
- 5.8** All new and immature animals must be given suitable and adequate opportunities to acclimatise to their new enclosure, social group, and surrounding environments.

Captive breeding

- 5.9** Suitable accommodation and relevant specialist knowledge must be available on the zoo premises before acquiring any new animals or breeding.
- 5.10** If hand-rearing or nursing of animals is necessary, there must be suitable facilities available for the species concerned.
- 5.11** Suitable enclosures must be provided for pregnant animals and animals with young, designed to minimise stress for the animals, provide the opportunity for seclusion 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.
- 5.12** Mammalian offspring must not be separated from the mother before they are fully weaned (defined as cessation of suckling), unless doing so is for the protection of the mother or the offspring. Temporary separation may be permitted for routine health checks, supplemental feeding, and veterinary care.
- 5.13** Steps must be taken to prevent the breeding of animals of different taxa (hybrids) unless this practice is part of an industry recognised managed conservation breeding programme (for example, European Association of Zoos and Aquaria Ex-Situ Programme) and will not compromise animal health or welfare.
- 5.14** 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 breeding with other animals, unless there is an industry recognised managed conservation breeding programme (for example, European Association of Zoos and Aquaria Ex-Situ Programme) in place that permits this.
- 5.15** The breeding of closely genetically related individuals of the same species (inbreeding) must be avoided unless this practice is a recommendation from a relevant and organised managed conservation breeding programme and will not compromise animal health or welfare.
- 5.16** The licence holder must document and implement a strategy to prevent overpopulation, which must be regularly reviewed. The strategy must be subject to ethical review and consideration must be given to animal welfare legislation. Permanent or temporary species-appropriate contraceptives must be utilised where necessary.

Documentation required for inspection

This documentation must be available for inspection:

- overpopulation strategy (5.16)

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

Preface

Whilst many of the requirements in this section must be delivered by the licence holders' veterinary surgeon or other contractors, it is the legal responsibility of the licence holder to make sure 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 twice daily, this must be justified, and alternative assessment regimes documented.

Explanatory notes for standard 6.2

- a) Daily checking may not be appropriate if checking an animal would negatively impact on its welfare, such as in the case of burrowing species or nursing animals.

- 6.3** Any animals that give cause for concern must be thoroughly assessed as to whether they are distressed, sick, or injured. If so, veterinary advice must be sought immediately.

- 6.4** Where abnormal behaviours or evidence of abnormal behaviours (for example, stereotypical behaviour, a restricted behavioural repertoire, self-injurious behaviour) are witnessed, they must be recorded, for example, in daily animal records, along with the steps taken to mitigate their development. Where abnormal behaviours are established, steps must be taken to identify and reduce the triggers for such behaviours.

Explanatory notes for standard 6.4

- a) Abnormal behaviours are often a coping mechanism and must not be restricted (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.

- 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, or other problems, and remedial actions taken.

Veterinary care

- 6.6** The licence holder must have a written and developed programme of preventive and curative veterinary care and nutrition, including a written summary of the healthcare provided. The programme must be delivered under the supervision of a veterinary surgeon who is familiar with current best practice in the care of zoo animals, particularly in the species maintained in the collection. That person must make arrangements to meet the ethical responsibilities of veterinary cover, set out in the [Royal College of Veterinary Surgeons' Code of Professional Conduct for Veterinary Surgeons](#).

Explanatory notes for standard 6.6

- a) Behavioural and psychological health must be considered alongside physical health to make sure that all aspects of good animal welfare are provided.
- 6.7** The programme of preventative and curative veterinary care must include routine visits by a veterinary surgeon to assess the health, condition, and welfare of the animals. Over a 12-month period, there must be a minimum of 4 evenly spread routine visits if the collection includes any vertebrates, or a minimum of 2 if the collection only includes invertebrates. The licence holder must be able to demonstrate through records that such visits have taken place.
- 6.8** The licence holder must be registered with at least 1 veterinary practice and if registered with more than 1, then must name a single veterinary practice as the collection's lead veterinary practice. The lead veterinary practice must take overall responsibility for the veterinary care of all the animals in the collection and this acceptance of responsibility must be documented. The licence holder must make sure that this lead veterinary practice is either:
- a) able to demonstrate specialised knowledge of preventative and curative veterinary care for all the species in the collection
 - b) has processes in place to obtain specialised knowledge of preventative and curative veterinary care for all the species in the collection by use of external specialist veterinary consultants or another veterinary practice
- 6.9** The licence holder must make sure that where external specialist veterinary consultants are used, the lead veterinary practice retains oversight and suitable records are kept regarding any treatment of animals in the collection.

- 6.10** Where the licence holder employs 2 or more veterinary practices or uses external specialist veterinary consultants, written procedures must be established to make sure that suitable and appropriate veterinary care can be provided as promptly as reasonably possible in emergency cases.
- 6.11** The lead veterinary practice must have overall responsibility for delivering the following routine activities:
- a) routine inspections of the collection
 - b) directing or carrying out treatment for all sick animals
 - c) administration of vaccines, parasite control, disease surveillance, contraception, and other aspects of preventative 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 procedures to be followed in the event of unintended accidents involving dangerous drugs
- 6.12** The lead veterinary practice must be consulted on, or be actively involved in, the following:
- a) enclosure and exhibit design
 - b) establishment of procedures for the import and export of animals
 - c) procedures for quarantine of animals and supervision of quarantine premises
 - d) the assessment and treatment of abnormal behaviours
 - e) training of zoo staff in zoonotic disease management, and personnel health and hygiene
 - f) animal nutrition and diet plans

Veterinary facilities

- 6.13** Facilities for routine and emergency examinations of animals must be available on the zoo premises, unless written confirmation has been provided by a Secretary of State zoo inspector confirming that this is not necessary for the collection (for example, because the collection houses mostly invertebrates or appropriate facilities at a local veterinary practice are close enough to be realistic).

- 6.14** Where the zoo is of such a size or type that a dedicated examination room is deemed unnecessary by a Secretary of State zoo inspector (see standard 6.13), then alternative arrangements that enable the routine and emergency examinations of animals in the collection must be established and documented.
- 6.15** All other zoos, except those exempt (see standard 6.13 and 6.14) must have a dedicated examination room on-site that is available at all times for the routine examination of animals. The room 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
- 6.16** Dedicated sufficient 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
- 6.17** Written procedures must be produced and implemented to prevent potential spread of disease or infection to, from or amongst isolated or quarantined animals.
- 6.18** Staff must use protective clothing and utensils in quarantine areas and such clothing and utensils must only be used, cleaned, and stored in that area.

Veterinary records

- 6.19** Comprehensive animal health care records must be kept at the zoo for a minimum of 6 years or for the duration of the life of the animal. 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 must be available at inspections and must, at minimum, cover the implementation of the following preventative medicine elements:
- a) clinical medicine and surgery of individuals or groups as appropriate
 - b) pathological findings from ante-mortem testing
 - c) results of post-mortem examination and testing
 - d) mortalities
 - e) veterinary intervention regarding behavioural or welfare issues identified, and remedial actions recommended
 - f) contributions of the veterinary surgeon to ethical decision-making

- 6.20** There must be systems in place for regular annual review by relevant veterinary and curatorial staff or staff of relevant expertise (for example, behaviourists) of clinical, behavioural, and pathological records and mortality. The licence holder must be able to demonstrate that husbandry and preventive medical practices have been reviewed where problems have been identified.
- 6.21** Where the licence holder employs 2 or more veterinary practices or uses external specialist veterinary consultants, the lead veterinary practice must make sure that all veterinary surgeons involved in the veterinary care of an animal in the collection are given access to the veterinary records of that animal.

Veterinary medicines

- 6.22** Medicinal products must only be administered under the direction of a veterinary surgeon. The lead veterinary practice 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).
- 6.23** Antidotes to potentially toxic veterinary products used at the zoo must be readily available and easily accessible in case of emergency. These antidotes must be available for use by authorised personnel only.
- 6.24** All animal drugs, vaccines and other veterinary products must be kept in accordance with manufacturer's instructions and kept in locked facilities, with restricted, named key access.
- 6.25** Regular inspection of drugs, vaccines and other veterinary products must be undertaken by a veterinary surgeon to ensure compliance with current veterinary medicine regulations. Out-of-date products and those that have exceeded broach dates must be removed. Full records of drug stock, usage, storage conditions, and disposal must be kept.
- 6.26** 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

- 6.27** 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 practice 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
- 6.28** A senior member of staff must be readily available at all times to make decisions regarding the euthanasia of sick animals. There must be effective, humane methods of euthanasia available on site, suitable for all species in the collection. The humane killing of an animal is considered justifiable under a number of circumstances, for example:
- a) if, in the opinion of the veterinary surgeon, an animal is suffering from an incurable disease or from severe pain or suffering which cannot be alleviated
 - b) if the animal poses a serious and unavoidable threat to human safety
 - c) if, after all feasible efforts have been made, an animal cannot be provided with captive conditions which satisfy its welfare needs
 - d) humane destruction of escaped animals on welfare grounds or for the prevention of the release into the wild of invasive alien species or those that may pose an ecological threat
- 6.29** Staff trained to carry out methods of euthanasia suitable for all species in the collection must be available to attend to the animals within a reasonable timeframe.
- 6.30** Where emergency euthanasia is carried out without the advice of a veterinary surgeon, there must be a written review process within 2 weeks. Any changes recommended by this review must be implemented and documented.
- 6.31** The chemical euthanasia of animals in the collection must only be carried out by either a veterinary surgeon or a person who has been:
- a) authorised by the zoo's lead veterinary practice
 - b) trained in the euthanasia of animals

Post-mortem examination

- 6.32** Animals that die at the zoo must be examined by a veterinary surgeon to make sure wherever possible that a full diagnosis and absence of significant or notifiable diseases can be confirmed. In the majority of cases, this will be by post-mortem.
- 6.33** 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.
- 6.34** Dead animals must be handled in a way that minimises the risk of transmission of infection.
- 6.35** Any retained samples must be stored in conditions advised by the veterinary surgeon and stored separately from animal feed.
- 6.36** If immediate post-mortem examinations are not always possible, then correctly labelled refrigerated facilities for the storage of carcasses must be available onsite. Carcasses must not be frozen unless at the direction of a veterinary surgeon.
- 6.37** A record detailing the cause of death of all animals in the collection must be kept at the zoo. These records must include post-mortem examination results and must form part of a written annual clinicopathological review.

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 be based on veterinary or specialist advice.
- 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. Such water must not run into animal accessed pools.
- 6.42** All excreta and soiled bedding for disposal must be stored and disposed of in a hygienic manner.
- 6.43** Cleaning and disinfecting must be undertaken in a way that does not create distress, suffering, or discomfort for the animals or impact on the safety of staff. This must include consideration of the cleaning products used, and the methods utilised to apply them.

- 6.44** Cleaning products must be used, stored, and disposed of in accordance with the manufacturer's instructions.
- 6.45** Where an infectious disease is identified, veterinary advice must be sought as soon as possible. Staff and equipment that have been in contact with contagious animals must not be granted access to other animal enclosures until advice has been obtained and equipment, clothing, and personal protective equipment (PPE) have been cleaned and disinfected.
- 6.46** Distance and barriers between animals and between enclosures and the public must be sufficient to minimise the transmission of disease or potential pathogens.
- 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 and effective procedure for the control and deterrence of pests, vermin and predators must be established, maintained, monitored, and recorded throughout the zoo premises.
- 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.

Documentation required for inspection

This documentation must be available for inspection:

- daily written records of health checks and abnormal behaviours (6.5)
- program of preventative and curative veterinary care and nutrition (6.6)
- evidence of annual veterinary visits (6.7)
- contract with lead veterinary practice (6.8)
- written confirmation regarding veterinary facilities (6.13)
- procedure regarding disease transmission for quarantined animals (6.17)
- animal health care records (6.19)
- annual review of veterinary records (6.20)
- records of drug stock, usage, storage, and disposal (6.25)
- euthanasia protocol (6.27)
- post-mortem records and written annual clinicopathological review (6.37)
- review of clinical pathological records (6.37)
- biosecurity and cleaning processes of enclosures (6.39)
- pest control records (6.48)
- clinical waste removal contracts (6.49)

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

Preface

In addition to the standards laid out in this section for the purposes of the Act, there are a number of other rules that are relevant to these topics.

Transport

The movement of zoo animals is governed by the:

- [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

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 as an economic activity.

Under this legislation, the zoo licence holder may be considered the 'organiser' for any animal journeys undertaken. Where the zoo 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 non-vertebrate animals. Non-vertebrates 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).

However, in England, WATEO provides a general duty of care to non-vertebrate animals, and animals involved in non-commercial movements, from injury or unnecessary suffering.

Transport of animals by air must also comply with the [International Air Transport Association \(IATA\), Live Animal Regulations \(LAR\)](#).

Acquisition and relinquishment

Zoos must comply with the requirements of the [Convention in 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.

For movements of Invasive Alien Species (IAS), zoos must comply with the [Invasive Alien Species \(Enforcement and Permitting\) Order 2019](#) and the restrictions placed on the transportation of listed species.

To sell animals as pets, zoos must 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
 - c) the keeping of any animals in sub-standard welfare conditions
 - d) the removal of animals from the wild illegally, unsustainably, or without proper consideration or reason
 - e) the movement of animals without compliance with relevant legal requirements

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

Transport of live animals

- 7.2** Suitable facilities for lifting, crating, and transporting all the types of animal in the zoo collection, to destinations both inside and outside the zoo premises, must be available.
- 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 directly to a veterinary practice or clinic under the advice of a veterinarian.
- 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.
- 7.6** The transport of animals must be carried out without delay to the place of the destination and the welfare of the animals must be regularly checked and appropriately maintained. Arrangements must be made to minimise journey lengths and meet the animals' needs during the journey.
- 7.7** 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 turn about freely, 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) provide access to the animals to allow them to be inspected and cared for as necessary
 - h) conform with International Air Transport Association guidelines (for transport by air)

- 7.8** Facilities for lifting, crating, and transporting any animals (including equipment for loading and unloading) must be cleaned and disinfected between uses.
- 7.9** 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.
- 7.10** Containers holding animals must always be kept upright so that jolting or shaking is minimised during transport. Containers must be secured to prevent displacement due to movement during transport.
- 7.11** Where animals are being transported to a veterinary surgeon for treatment, there must be barriers in between carriers to reduce the transmission of disease, and the vehicle and equipment must be appropriately disinfected following transportation.
- 7.12** Animals must be checked for signs of injury, illness, distress, or fear immediately before, during and after transport. An animal which has fallen ill or become injured during transport must receive prompt first aid or veterinary treatment.
- 7.13** Animals must not be sedated for the purposes of transport unless it is strictly necessary to ensure the welfare of the animals and only used under veterinary supervision.
- 7.14** Predator and prey species must not be kept within sight of each other during transport.
- 7.15** Animals must be kept in vehicles for the minimum amount of time necessary and never left unattended in a vehicle during the journey.
- 7.16** Animals must be provided with bedding or equivalent material appropriate to the species and the journey time. This material must make sure that 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.
- 7.17** Where animals in containers are placed on top of one another, the 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

7.18 The licence holder must not acquire animals (including live food) from the wild unless there is a justifiable reason for doing so. The acquisition decision must be subject to a cost benefit analysis and review by the zoo's ethics committee, which must sign off that the acquisition is clearly needed for conservation reasons and it is in line with the zoo's conservation policy. If removal of animals from the wild takes place, the licence holder must consider:

- a) the legality of the acquisition
- b) the justification for doing so
- 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

Records of these decisions must be kept and made available for inspection (this can include a documented ethical review process - see section 14).

7.19 When receiving animals from any source, either on 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 are met.

Relinquishment of animals from the zoo collection

7.20 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.

7.21 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

7.22 Animals destined for rehabilitation and release must not be on full unrestricted 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. Examples of restricted display include (but are not limited to) viewing animals by video camera, one-way screens, or spyholes.

7.23 A programme for the management of animals intended for release into the wild must be documented and implemented. The programme must cover all the following aspects and must make sure that:

- a) the animal's state of health and its behaviour (including suitable food acquisition skills) make it a suitable candidate for release
- b) the animal has gone through an appropriate pre-release program (such as rehabilitation, health, or screening)
- c) appropriate measures have been taken to mitigate the risks to public health, animal health or the environment
- d) appropriate measures have been taken to promote the animal's welfare prior to its release
- e) 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

7.24 Where the zoo rescues or temporarily houses native wildlife species in need of rehabilitation prior to release back into the wild, the licence holder must be able to demonstrate that these animals are clearly segregated from animals in the permanent collection.

Explanatory notes for standard 7.24

- a) The segregation must protect the welfare of the segregated animals and limit the potential spread of disease either from or to the segregated animals.

Documentation required for inspections

This documentation must be available for inspection:

- evidence of due diligence regarding transfers of animals (7.1)
- records and ethical review process for acquisitions from the wild (7.18)

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.

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 invasive non-native species (IAS). The Wildlife and Countryside Act 1981 makes it an offence to release or allow the escape of most non-native animals. 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 make sure that all members of staff are instructed in the obligations under current legislation on health and safety, and animal staff in invasive alien species and wildlife law, in relation to the operation of the zoo.

Preventing escapes

- 8.2** Steps must be taken to prevent the escape or unauthorised release of animals.

Explanatory notes for standard 8.2

- 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, either wild or domesticated, from a zoological collection outside of the zoo's perimeter.
- c) A 'near miss' is defined as the authorised or unauthorised release of an animal, either wild or domesticated, outside of the animal's normal enclosure or environment but still contained within the confines of the zoo perimeter.

- 8.3** All animals in the collection, apart from managed free ranging species, must be kept and contained in secure enclosures, other than when the animals are under the control of a trained and experienced member of staff authorised by the licence holder.

Explanatory notes for standard 8.3

- a) 'Managed free ranging species' in the collection are those that the licence holder chooses to maintain outside of enclosures but within the perimeter of the zoo because they are not considered to pose a risk to public safety. They must remain under the control of authorised staff at all times when they are outside enclosures.
- b) Category 1 and 2 listed hazardous animals and species of special concern (as listed in the [Invasive Alien Species \(Enforcement and Permitting\) Order 2019](#)) must not be free ranging on the zoo premises.

- 8.4** All animals in the collection must be kept in secure enclosures which are designed, constructed, and maintained to prevent escape.

- 8.5** All animal enclosures must be checked daily by members of staff to make sure that they are secure. These checks must be recorded, and the records made available for inspection. If structural deficiencies are identified, repairs must be carried out 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.

- 8.6** The structural integrity of enclosures containing category 1 listed animals must be checked annually by someone who is experienced to make a structural engineering assessment. These checks must be recorded, and the records made available for inspection.

Explanatory notes for standard 8.6

- a) Examples of experienced assessors include blacksmiths, builders, surveyors, and engineers, which can include experienced members of staff or contractors.
- 8.7** Enclosure fencing, barriers, and gates and doors must be made of a material which is suitable to securely contain the type of animal enclosed. Gates and doors must be designed and maintained to prevent animals from being able to manipulate them to escape. Viewing panels and walkways over enclosures must be able to withstand damage by the species contained within.
- 8.8** 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.
- 8.9** Trees within or near animal enclosures must be regularly inspected and lopped or felled as necessary to avoid animals being harmed by falling branches, toxicity, or trauma. Trees, vegetation, climbing structures, and other items within enclosures must be maintained and positioned in such a way as to prevent damage to enclosure barriers and escapes.
- 8.10** Enclosures containing animals which can dig or burrow must have appropriate infrastructure in place to avoid escape underneath fences or enclosure barriers.
- 8.11** Gates and doors to enclosures must be securely locked to prevent unauthorised opening.
- 8.12** Each exit from the 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 from the zoo premises in case of an emergency.
- 8.13** The perimeter boundary of the zoo premises, including access points, must be designed, constructed, and maintained to deter unauthorised entry by members of the public.
- 8.14** There must be systems in place to minimise the risks of theft, malicious damage, or release of animals in the collection.
- 8.15** A written assessment of the site perimeter for potential escape routes must be undertaken. Where potential problems are identified, the licence holder must be able to demonstrate that these have been resolved.

Reporting escapes

8.16 The licensing authority and the statutory nature conservation agency (Natural England, Natural Resources Wales and NatureScot) 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 1.6 for information about the different rules for Birds of Prey displays).

Explanatory notes for standard 8.16

- a) Any instances where animals escape from their enclosures but are demonstrably retained within the perimeter of the zoo ('near misses') do not need to be reported to the licensing authority unless the animal is category 1 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).

Recording escapes

8.17 All escapes of animals from their enclosures ('near misses') and from the zoo premises ('reportable escapes') must be recorded, and these records must be made available for inspection.

8.18 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 review of why any recovery failed and adapt their escape and recovery procedures accordingly. Written evidence of this review and any adjustments made must be made available for inspection.

8.19 A senior member of staff appointed by the licence holder must always be available to take decisions regarding the live capture and humane destruction of escaped animals.

8.20 There must be a documented contingency procedure to be followed in the event of escapes of animals from their enclosures; the zoo premises; and outreach activities, which must be available for inspection. 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
- e) ensuring the security of the zoo perimeter, involving the closure of all access points to and from the zoo premises
- f) equipment and expertise to capture, tranquillise or kill escaped animals
- g) a decision-making process for when to use firearms and darting equipment (where present) in different situations involving animals escaping
- h) processes for producing an incident report and contacting relevant authorities

The procedure must be reviewed within 7 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

8.21 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 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, solely fish and aquatic invertebrates only - see standard 8.22).

Explanatory notes for standard 8.21

- a) Animal escape drills can be undertaken either inside or outside opening hours. Animal escape drills can consist of:
- 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
 - testing of the staff response and implementation of the emergency escape procedures
 - testing of the emergency escape procedure and addressing any weaknesses in the policy
- b) Although the following processes are useful as part of escape management planning, animal escape drills do not include:
- tabletop reviews and scenario-based assessments
 - policy and documentation review by management or senior staff
 - an actual escape
- c) Consideration must be given to undertaking drills in the dark where the zoo hosts late night events.

8.22 Where a collection contains aquaria, 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 tanks (where applicable).

Hazardous animal management

8.23 The licensing authority must be notified in writing, at least 1 month in advance, of the proposed addition of any category 1 listed animal that is from a taxonomic family that has not previously been kept in the zoo.

8.24 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 1 listed animal.

Explanatory notes for standard 8.24

- 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.

8.25 Where an enclosure contains category 1 or 2 listed animals, there must be a documented Safe Operating Procedure (SOP) 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 SOP for that species. Staff responsible for working with hazardous animals must be trained in following the SOPs. Training events must be recorded, and the records made available for inspection.

Explanatory notes for standard 8.25

- a) Where an enclosure contains 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 the enclosure and exits the enclosure, and a procedure as part of the SOP with steps to be taken if there is a failure of notification within an expected time period.
- b) Risk assessments must consider situations where staff enter shared spaces with category 1 listed animals (for example, for veterinary or emergency reasons).
- c) Risk assessments must consider the need for overhangs where hazardous animals are kept in open-topped enclosures (see standard 8.27).

8.26 The following category 1 listed animals must not leave their enclosures for the purpose of activities involving the public, and the public must not be allowed access into their enclosures:

- carnivores
- elephants
- hoofed mammals
- primates
- cassowaries
- ostriches

In the case of other category 1 and 2 listed animals, risk assessments must be conducted to the satisfaction of the licensing authority prior to these activities taking place. Where concerns are identified, these must be addressed prior to the activities taking place and evidence of the steps taken to correct any concerns must be available for inspection.

Explanatory notes for standard 8.26

- a) Risk assessments must be able to show that public safety will not be significantly compromised by the activities and that any risks identified will be mitigated.

8.27 Where an open-topped enclosure contains any category 1 listed primate or carnivore, there must be an inward-facing overhang that is suitably designed and constructed to contain the animals. The overhang must be appropriate for the species kept in the enclosure. An overhang is not required if the licence holder produces a written justification stating why it is not necessary, which is approved by the licensing authority.

8.28 Electric fencing used for animal containment must be checked daily. 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. It must be fitted with an alarm system to notify operators of a fault. An electric fence must not be used as the sole means of containment for category 1 listed animals.

8.29 Where an enclosure contains any category 1 listed primate, carnivore, elephant or hoofed mammal, the keeper entrance must consist of a double air-lock type gate or door system. Procedures or mechanisms must be in place to make sure that only 1 of these doors is open at any time.

Explanatory notes for standard 8.29

- a) 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.
- b) 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 1 door before opening the next.
- c) The gate or door system must be covered with a roof. The gates or doors must open into the enclosure rather than out into the zoo.
- d) Infrequently used 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, must be secured and locked using different systems from the standard keeper entrances.
- e) Where electronic gates are used, there must be manual or automatic battery back-up systems that allow gates to be secured in the event of a power failure.
- f) Enclosures containing category 1 listed primates or carnivores must have an automatic closer (for example, self-closing hinges or weighted mechanisms) on at least 1 keeper gate.

8.30 Where an enclosure contains category 1 listed animals, and the enclosure barrier does not prevent direct physical contact between animals and the public, a stand-off barrier must surround the enclosure. Risk assessments must be conducted to determine the need for stand-off barriers for enclosures containing category 2 listed animals, where the enclosure barrier does not prevent direct physical contact between the animal and the public.

Explanatory notes for standard 8.30

- 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 direct physical contact with animals or enclosure barriers.

Drive-through enclosures

8.31 Each drive-through enclosure containing category 1 or 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.

8.32 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.

8.33 Where drive-through enclosures contain category 1 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:
 - always stay in the vehicle
 - keep all doors locked
 - keep windows and sunroofs closed
 - sound the horn or flash the hazard warning lights and await the arrival of a rescue vehicle if their vehicle breaks down

8.34 Where drive-through enclosures contain category 1 or 2 listed animals, the licence holder must make sure that each public vehicular entrance has an entry system which would prevent the escape of the animals, and that this is actively monitored by staff during opening hours.

Explanatory notes for standard 8.34

- 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. This does not apply to category 1 listed carnivores (see standard 8.35).
- c) Active monitoring by staff during opening hours includes physically manning a gate, local visual assessment from an observation tower with or without CCTV, or keeper patrol units within the enclosure areas.
- d) Where electronic gates are used, there must be manual or automatic battery back-up systems that allow gates to be secured in the event of a power failure.

8.35 Where category 1 listed carnivores are kept in drive-through enclosures, the licence holder must make sure that every public vehicular entrance has an electronic double-gated system which ensures that 1 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 be either manned or be supported by local visual assessment from an observation tower with or without CCTV.

8.36 Where category 1 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

- 8.37** Where a collection contains any category 1 listed primate, carnivore, 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 to kill escaped animals
 - b) suitable and sufficient darting equipment, appropriate for the species housed, are 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
 - c) ammunition for respective calibres is selected to ensure maximum effect and minimise risk to persons, animals and property when fired
 - d) information on appropriate calibre for use on each such species contained in the collection is available on the zoo premises

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

- 8.38** 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 and must be regularly assessed for accuracy. Documented evidence of firearms having been zeroed in to maintain accuracy must be available for inspection.
- 8.39** Where a collection contains any category 1 listed primate, carnivore, elephant, or hoofed mammal, at least 1 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 1 member of the firearms team is available on the zoo premises, there must be a clear hierarchy of responsibility.

Explanatory notes for standard 8.39

- a) There must be a rota to make sure that at least 1 member of the firearms team is available on the zoo premises at all times.
 - b) Operational hours include overnight accommodation and late-night events where the public are on the zoo premises.
- 8.40** Every person licensed to use a firearm (each member of the firearms team) must undergo formal training to assess and confirm competency. This training must be repeated on a quarterly basis (4 times per year) as a minimum. Evidence of training and maintenance of critical skills and continued professional development must be available for inspection.

- 8.41** Every person licensed to use a firearm (each member of the firearms team) must undergo monthly practice sessions for the purpose of familiarisation and safe usage of the weapon. 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. Practice sessions must be documented, and records of these sessions made available for inspection.
- 8.42** Where firearms are held on site, the firearms team must be deployed in emergency drills as outlined in standard 8.21, which must include the following scenarios:
- a) a complex scenario involving staff or the public
 - b) a scenario where an animal is to be humanely killed in an emergency
 - c) a scenario which involves the firearm team member using the decision-making process agreed by the zoo for situations involving escaped animals

All scenarios must be supervised by a member of the zoo management team to ensure compliance with existing standard operating procedures and to provide an opportunity to review, amend and improve safety protocols.

Health and safety

- 8.43** 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.
- 8.44** Areas to which the public are permitted access must have surfaces constructed of a material which minimises the risk of falling, slipping, or tripping.
- 8.45** 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.
- 8.46** 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.
- 8.47** Barbed, razor wire and electric fencing must be beyond the reasonable reach of the public. Safety signs giving warning of the hazard either by symbol or a combination of symbol and words must be provided on any electrified fence. Safety signs on any electrified section of perimeter fence must face both inwards and outwards.
- 8.48** The release of biological contaminants such as parasites, diseases, or non-native plants through wastewater must be prevented. Wastewater must be treated where risk has been noted to make sure this does not occur.

Public facilities

- 8.49** First aid equipment must be readily accessible on the premises along with clear instruction on use of equipment for approved members of staff. First aid points must be adequately signed.
- 8.50** 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 size of the zoo.
- 8.51** Properly equipped and maintained toilet facilities must be available for use by the public. Clean, hot water for hand washing must be provided along with soap and hand drying facilities.
- 8.52** Smoking 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 is and is not permitted on the zoo premises.

Documentation required for inspection

This documentation must be available for inspection:

- records of daily security checks of animal enclosures (8.5)
- evidence of annual structural inspections (8.6)
- written assessment of the site perimeter (8.15)
- records of reportable escapes and near misses (8.17)
- escape review process (8.18)
- contingency procedure for escapes (8.20)
- records of escape drills (8.21)
- records of emergency operational drills for aquaria (8.22)
- SOPs and risk assessments for category 1 and 2 animal enclosures (8.25)
- risk assessments to determine the need for stand-off barriers (8.30)
- information for the firearms team on appropriate calibre per species (8.37)
- evidence of firearms being zeroed in (8.38)
- firearms team rota (8.39)
- evidence of quarterly formal training for the firearms team (8.40)
- evidence of monthly training sessions for the firearms team (8.41)

Section 9: Animal Experiences

Preface

There are several pieces of legislation governing the exhibition of wild animals in England, including the:

- Dangerous Wild Animals Act 1976
- Animal Welfare (Licensing of Activities Involving Animals) Regulations 2018
- Wild Animals in Travelling Circuses Act 2019

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, S22(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) when animals are taken, for example, to schools for educational outreach.

An establishment licensed under the Zoo Licensing Act 1981 is exempt from requiring a licence to keep or train animals for exhibition under the 2018 Regulations.

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
- '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. Examples include animal handling demonstrations; live animal educational teaching aids; touch pool exhibits; diving pool exhibits; animal rides; direct animal feeding; 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. These activities may or may not be in animal engagement or animal contact areas

General provisions

- 9.1** Animal experiences must only take place during planned periods of time, under conditions consistent with animal welfare that will not lead to the animals' physical or psychological discomfort.
- 9.2** All types of animal experience must be subject to welfare assessment and ethical review before taking place.
- 9.3** All types of animal experience must be subject to risk assessment to the satisfaction of the licensing authority before taking place. Risk assessments must be reviewed regularly by an appropriate person. Any controls identified during the risk assessment must be implemented prior to the activity taking place. Animal experiences are not permitted in the case of category 1 listed animals (apart from free flying displays - see appendix 1.6).

Explanatory notes for standard 9.3

- a) Risk assessments must cover all risks (including zoonotic risks) to both human and animal safety.
- 9.4** Animals must be fit for the activities expected of them. They must not be used for performances or handling unless they are fit for the intended activity.
- 9.5** 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.
- 9.6** 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 the same environmental conditions are continuously maintained.
- 9.7** 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 managing the public, which is made available for inspection.
- 9.8** Where negative animal experiences occur that affect animal welfare, steps must be taken to make sure such negative interactions are prevented, and any steps taken recorded.
- 9.9** Specific records of animal use, illness, deaths and any incidents, injuries, and welfare problems that arise during animal experiences must be kept and be made available for inspection.

- 9.10** The public must be prohibited from eating food in animal contact areas. Pictorial signs must be displayed prohibiting the public from entering animal contact areas with food 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.
- 9.11** 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 working in animal contact areas.
- 9.12** Hand washing facilities must be suitably located near both animal engagement areas and animal contact areas. Clean, hot water for hand washing must be provided along with soap and hand drying facilities.

Walkthrough exhibits

- 9.13** All public walkthrough 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.
- 9.14** All public walkthrough enclosures where contact is permitted between animals and the public or where there are category 1 or 2 listed animals present must be supervised by an appropriate number of suitably trained and experienced staff when open to the public.
- 9.15** The following category 1 listed animals are not permitted in walk-through exhibits:
- carnivores
 - elephants
 - hoofed mammals
 - primates
 - cassowaries
 - ostriches

In the case of other category 1 and 2 listed animals in walkthrough exhibits, these must be risk assessed to the satisfaction of the licensing authority and supervised by an appropriate number of suitably trained and experienced staff when open to the public.

- 9.16** 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 to the satisfaction of the licensing authority.
- 9.17** Feeding of animals, where the public will not come into contact with the animals, does not need to be supervised but must be risk assessed and controlled (see standards 3.26 and 3.27).

- 9.18** Where a walk-through enclosure is not supervised by staff but is open to the public, there must be a clearly indicated means for the public to call for assistance if required.
- 9.19** The licence holder must make sure that there are written operating procedures and associated training for staff outlining the processes for intervention in defence of either members of the public or animals if required.

Touch pools

- 9.20** Touch pools must be phased out of all zoological collections by 31 December 2024. During the phasing out period, standards 9.21 to 9.26 must be met.
- 9.21** Touch pools must provide environments that are suitable to meet the welfare needs of the animals at all times and allow animals the choice to interact with the public or not.
- 9.22** The licence holder must make sure that touch pools are either:
- a) continually supervised by a suitably trained and experienced member of staff who is responsible for ensuring that any interactions with the public are appropriate and stopped if the animals show signs of fear, suffering or fatigue
 - b) 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)
- 9.23** Staff responsible for supervising touch pool exhibits must be properly trained in the:
- a) handling, care, and signs of fear, suffering and fatigue of the species held
 - b) management of the public around the touch pools
- 9.24** Unmanaged handling of aquatic invertebrates by members of the public must not occur.
- 9.25** Decapod crustaceans and cephalopods must not be kept in touch pools.
- 9.26** Any mutilation intended to make an animal less dangerous for the public must not take place (for example, removal of stings or barbs from rays), whilst having regard to procedures permitted under existing legislation on mutilations.

Diving pool exhibits

- 9.27** Where divers are permitted to have access to aquatic animal tanks and pools on the zoo premises, the diver must hold a relevant diving qualification prior to entering the tank or pool. Risk assessments and management of such dives must reflect the qualification of the diver. The public must not be permitted access to tanks containing category 1 listed carnivores.
- 9.28** 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

- 9.29** The welfare of animals must be maintained during shows and demonstrations. When abnormal behaviours or evidence of abnormal behaviour are witnessed, steps must be taken to mitigate their development. Where an animal displays repeated or increasing abnormal behaviour, they must not be used in shows or demonstrations. The use, frequency and any abnormal behaviours of animals used must be recorded, along with remedial actions taken.
- 9.30** Animals, when not participating in shows or demonstrations, must be provided with accommodation that meets the welfare, social and behavioural needs of the species (see standard 2.1).
- 9.31** Shows and demonstrations must have an educational and conservation component that justifies the performance undertaken.
- 9.32** Shows and demonstrations must only highlight natural species-typical behaviour of the animals used.
- 9.33** Animals must not be provoked for the benefit of the viewing public.

Training of animals

9.34 All training of animals must provide a net positive 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

9.35 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

9.36 Animal training must be based on positive reinforcement. Negative reinforcement and negative punishment must only be used as a last resort and not be common practice. Positive punishment must never be used unless it is to protect animal or human safety. Written protocols that outline the approved and non-approved methods must be established.

Explanatory notes for standard 9.36

- a) Positive reinforcement is defined as the rewarding of desired behaviour.
- b) Negative reinforcement is defined as the termination of an unpleasant state following a desired behaviour.
- c) Negative punishment is defined as the removal of a reward following undesirable behaviour.
- d) Positive punishment is defined as the application of an unpleasant stimulus following undesirable behaviour.

9.37 Training methods and equipment must not cause pain, suffering or injury to the animals. Training methods must be tailored to the natural behaviour of the individual animal and species.

9.38 The welfare of animals must be maintained during training activities. When abnormal behaviours or evidence of abnormal behaviour are witnessed, steps must be taken to mitigate their development. The use, frequency, and any abnormal behaviours of animals during training activities must be recorded, along with remedial actions taken.

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

Outreach activities

9.40 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:

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

The person responsible for handling the animals off-site must reserve the right to end any interactions if required to protect the welfare of the animal.

9.41 Animals taken outside of the zoo for activities such as school visits must only be those that have been trained specifically for that type of work.

9.42 The licence holder must make sure that continuous environmental parameters are maintained for animals with specialist welfare needs, including dedicated artificial environment management, from the point the animal leaves its normal enclosure to the point it is returned.

9.43 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.

9.44 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, performance, and rest periods

This documentation must be made available for inspection.

Documentation required for inspection

This documentation must be available for inspection:

- welfare assessments and documented ethical reviews (9.2)
- risk assessments (9.3, 9.15, 9.16, 9.17 and 9.27)
- procedure for managing the public around animal enclosures (9.7)
- records of animal use, illness, deaths, incidents, injuries, welfare problems (9.9, 9.29 and 9.38)
- training for staff on hand washing (9.11)
- operating procedures for walk-through exhibits (9.19)
- training plans (9.35)
- protocols for training methods (9.36)

Section 10: Conservation

Preface

Conservation, education, and research measures required of zoos are currently set in Section 1A of the Zoo Licensing Act 1981.

Subject to the Animal Welfare (Kept Animals) Bill being approved by Parliament, Defra aims to move conservation requirements expected of zoos to the Standards.

This section of the Standards will not come into effect until after the Animal Welfare (Kept Animals) Bill has been enacted, and the relevant sections of that Act brought into force.

Until then, the conservation measures for zoos contained in Section 1A of the Act must still be met. However, we still wish to receive interested parties' views on this proposed section.

Standards for zoos of different sizes

This section contains standards on conservation that are based on the size of the zoo, as determined by the calculator below.

- part 1 contains standards that apply to all zoos
- part 2 contains standards that apply to medium and large zoos
- part 3 contains standards that apply to large zoos only

To determine the size of a zoo, use the following sums:

- number of annual visitors (total headcount - including free tickets, guests, corporate groups, events) – multiply it by 0.2
- number of animal species at the zoo (not subspecies) – multiply it by 100
- number of full time equivalent (FTE) staff (all animal-related staff on the zoo's payroll) – multiply it by 10
- size of zoo area (in hectares) – multiply it by 100

Score

If the score is:

- 35,000 or below, you are a small zoo
- between 35,000 and 75,000, you are a medium zoo
- 75,000 or above, you are a large zoo

Part 1: Standards for all zoos

The following standards must be met by all zoos, regardless of size or type. Where an organisation owns and operates more than 1 site, these requirements apply to each site.

- 10.1** All zoos must have a written conservation policy and a documented strategy that outlines the zoo's conservation activities.
- 10.2** All zoos must contribute to the management and protection of free-living wild animals in their natural habitats. This can include activities on the zoo's premises and away from the zoo.
- 10.3** All zoos must contribute meaningfully to conservation projects situated away from the licensed zoo premises. This can include partnerships with other organisations and may include zoo volunteers. Financial contributions can also be provided in addition to, but not instead of, the involvement and support provided by zoo staff and volunteers.
- 10.4** All zoos must conduct and record conservation activities rigorously and clearly, so that this information is accessible to zoo inspectors. As a minimum, an annual conservation summary must be produced that includes the following details:
- the purpose and objectives of the projects
 - the species included in the projects
 - where the projects take place
 - stakeholders, including the lead organisation driving the projects
 - brief summary description of the projects, including works carried out and the specific contribution of the zoo to the projects
 - financial support provided by the zoo to the projects
 - estimated total staff time provided by the zoo (if any) for the projects

The annual conservation summary must be published online.

Explanatory notes for standard 10.4

- a) These records must provide some means for a zoo inspector to evaluate the zoo's contribution to conservation activities and the implementation of these activities.
- 10.5** All zoos must participate in species management programmes for relevant species or individual animals held by the zoo.

Explanatory notes for standard 10.5

- a) Meeting management programme requirements or meeting the needs of individual animals (for example, rehomed or confiscated animals) involves keeping animals in non-breeding settings unless these programmes and needs include breeding requirements.
- 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 or animals 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.

10.6 All zoos must have a sustainability policy which outlines how the zoo intends to promote environmentally responsible operations and mitigate its impact on, and positively contribute to, the environment.

10.7 All zoos must make a concerted effort to measure their carbon footprint. Records must be made available for inspection.

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

10.9 All zoos must make provision and support staff to participate in relevant professional groups, committees, or associations.

Explanatory notes for standard 10.9

- a) Examples include:
 - Taxon Advisory Groups (TAGs)
 - Taxon Working Groups (TWGs)
 - Species Management Committees (SMCs)
 - Association of British and Irish Wild Animal Keepers (ABWAK)
 - British Wildlife Rehabilitation Council (BWRC)
- b) There are many others, including local groups, which may also be applicable depending on the project or activity.

Part 2: Standards for medium and large zoos

In addition to meeting the standards set out in part 1 of this section, medium and large zoos (as defined above) must do the following:

- 10.10** All medium and large zoos must, where appropriate and as part of a recognised project, provide animals for reintroduction or repopulation of species into the wild. Such projects must follow appropriate guidelines such as the [IUCN Guidelines for Reintroductions](#) and other conservation translocations or local biodiversity action plans.
- 10.11** In relation to the activity of maintaining zoo populations, to reduce or eliminate the need for species to be removed from the wild, all medium and large zoos must, where appropriate and part of national or regional initiatives, participate in species breeding programmes.
- 10.12** All medium and large zoos must publish, or contribute to the publication of, results from conservation research projects. Contributing must exceed only providing data (for example, authorship or co-authorship of publications is required, as opposed to acknowledgements only).
- 10.13** All medium and large zoos must take a lead role in running or coordinating at least 1 studbook or species breeding management programme which provides justified conservation benefits (for example, but not exclusively, European Association of Zoos and Aquaria Ex-Situ programmes or national species recovery programmes).
- 10.14** All medium and large zoos must operate or coordinate at least 1 field conservation project where identified zoo staff with the appropriate skills dedicate a majority of their time and expertise. This must amount to at least half (0.5) a full time equivalent (FTE) staff member's time for medium zoos and 1 FTE staff member's time for large zoos.

Part 3: Standards for large zoos

In addition to meeting the standards set out in parts 1 and 2 of this section, large zoos (as defined above) must do the following:

- 10.15** All large zoos must have primary responsibility for operating or coordinating at least 1 field conservation project. In addition, all large zoos must collaborate as a key partner in at least 1 other field conservation project. In all cases, zoo staff must contribute their time and expertise. This can include partnerships with other zoos, conservation organisations and NGOs.
- 10.16** All large zoos must facilitate and operate conservation training and knowledge exchanges, such as project staff from the field visiting a zoo and specialists (for example, veterinarians) going out to a project field site.

Documentation required for inspection

This documentation must be available for inspection:

All zoos

- written conservation strategy and policy (10.1)
- annual conservation summaries (10.4)
- documentation evidencing conservation activities (10.4)
- evidence or acknowledgment of breeding programme participation (10.5)
- sustainability policy (10.6)
- documentation evidencing efforts to measure carbon footprint (10.7)
- information relating to staff participating in relevant groups, associations, or committees (10.9)

Medium and large zoos

- information regarding reintroduction and repopulation programmes (10.10)
- information regarding any sustainable breeding programmes (10.11)
- details of conservation research-related publications (10.12)

Large zoos

- information detailing the zoo's field conservation projects (10.15)
- details of conservation training (10.16)

Section 11: Education

Preface

Conservation, education, and research measures required of zoos are currently set in Section 1A of the Zoo Licensing Act 1981.

Subject to the Animal Welfare (Kept Animals) Bill being approved by Parliament, Defra aims to move education requirements expected of zoos to the Standards.

This section of the Standards will not come into effect until after the Animal Welfare (Kept Animals) Bill has been enacted, and the relevant sections of that Act brought into force.

Until then, the education measures for zoos contained in Section 1A of the Act must still be met. However, we still wish to receive interested parties' views on this proposed section.

Data protection

All educational activities must comply with The Data Protection Act 2018, which controls how personal information is used by organisations, businesses, or the government.

Ethical review

Zoos are encouraged to refer to ethical support documentation, such as the Code of Ethics and Conduct Guidelines from the British Psychological Society.

Standards for zoos of different sizes

This section contains standards on education that are based on the size of the zoo, as determined by the calculator below.

- part 1 contains standards that apply to all zoos
- part 2 contains standards that apply to medium and large zoos

To determine the size of a zoo, use the following sums:

- number of annual visitors (total headcount - including free tickets, guests, corporate groups, events) – multiply it by 0.2
- number of animal species at the zoo (not subspecies) – multiply it by 100
- number of full time equivalent (FTE) staff (all animal-related staff on the zoo's payroll) – multiply it by 10
- size of zoo area (in hectares) – multiply it by 100

Score

If the score is:

- 35,000 or below, you are a small zoo
- between 35,000 and 75,000, you are a medium zoo
- 75,000 or above, you are a large zoo

Part 1: Standards for all zoos

The following standards must be met by all zoos, regardless of size or type. Where an organisation owns and operates more than 1 site, these requirements apply to each site.

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

- a) the living collection, particularly the biological characteristics and natural behaviour of the animals at the zoo
- b) the conservation of biodiversity, by providing information about the species exhibited, 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 and public talks.

11.2 All zoos must have a written education statement and implementation plan 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 provides for and is tailored to meet the needs of all visitors. 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 make sure that any formal education resources (for example, aimed at schools or colleges) are linked to the appropriate National Curricula and Further Education learning outcomes (for example, A Level or Business and Technology Education Council (BTEC)).

11.6 All zoos must have suitable facilities, provisions, and appropriate numbers of suitably trained staff for any formal education sessions (for example, pre-booked sessions with school children or students), where these are provided by the zoo.

11.7 All zoos must keep a record of their educational activities and evaluate the effectiveness of these activities by collecting evidence (for example, feedback forms).

11.8 All zoos must make sure that education evaluation and human-based research are subject to ethical review either internally (ethics committee) or externally (university, college, or school level).

- 11.9** 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
 - c) some of its biological characteristics (for example, diet or weight)
 - d) details of its 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

Part 2: Standards for medium and large zoos

In addition to meeting the standards set out in part 1 of this section, medium and large zoos (as defined above) must do the following:

- 11.10** All medium and large zoos must run research projects to evaluate the effectiveness of the zoo's education program.
- 11.11** Staff focused on education in all medium and large zoos must contribute at least once per year to a national educational platform (for example, present at a conference, participate in an education network, contribute to a committee, journal publication or similar).

Documentation required for inspection

This documentation must be available for inspection:

All zoos

- education programme (11.1)
- education statement and implementation plan (11.2)
- records of education activities (11.7)
- evidence of the evaluation of education provision (11.7)

Medium and large zoos

- evidence of research projects to evaluate education provision (11.10)
- evidence of staff contributions to national educational platforms (11.11)

Section 12: Research

Preface

Conservation, education, and research measures required of zoos are currently set in Section 1A of the Zoo Licensing Act 1981.

Subject to the Animal Welfare (Kept Animals) Bill being approved by Parliament, Defra aims to move research requirements expected of zoos to the Standards.

This section of the Standards will not come into effect until after the Animal Welfare (Kept Animals) Bill has been enacted, and the relevant sections of that Act brought into force.

Until then, the research measure for zoos contained in Section 1A of the Act still applies. However, we still wish to receive interested parties' views on this proposed section.

Legislative requirements

All research conducted by zoo staff or visiting scientists must comply with relevant legislation, including The Animals (Scientific Procedures) Act 1986 (as amended 2013).

Data protection

All research that involves data collection on human participants must be compliant with The Data Protection Act 2018, and, where necessary, be subject to thorough ethical review either within the zoo or by an external partner (for example, university collaborator).

Standards for zoos of different sizes

This section contains standards for research that are based on the size of the zoo, as determined by the calculator below.

- part 1 contains standards that apply to all zoos
- part 2 contains standards that apply to medium and large zoos
- part 3 contains standards that apply to large zoos only

To determine the size of a zoo, use the following sums:

- number of annual visitors (total headcount - including free tickets, guests, corporate groups, events) – multiply it by 0.2
- number of animal species at the zoo (not subspecies) – multiply it by 100
- number of full time equivalent (FTE) staff (all animal-related staff on the zoo's payroll) – multiply it by 10
- size of zoo area (in hectares) – multiply by it 100

Score

If the score is:

- 35,000 or below, you are a small zoo
- between 35,000 and 75,000, you are a medium zoo
- 75,000 or above, you are a large zoo

Part 1: Standards for all zoos

The following standards must be met by all zoos, regardless of size or type. Where an organisation owns and operates more than 1 site, these requirements apply to each site.

- 12.1** All zoos must have a written research statement that outlines the aims for research within the collection and a list of topics of potential study available for researchers (for example, on the zoo's premises, website or similar).
- 12.2** All zoos must facilitate or conduct scientific research on, or directly involving, their living collection of animals. As a minimum, this means sharing information which the zoo has already collected and collated by itself, for the purpose of supporting further data analysis by interested parties upon reasonable request.

Explanatory notes for standard 12.2

- a) 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 conducted alongside of the living collection (for example, on a zoo-run nature reserve or on free-living animals outside of the collection) is supplementary to, and does not fully meet, the research requirement of studies on the zoo's living collection.
- 12.3** All zoos must keep a record of their research activities and be able to provide a list of the research conducted within the animal collection.
 - 12.4** All zoos must make sure that all research 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.
 - 12.5** All zoos must have an identified person who is the point of contact for research-related activities within the animal collection.

Part 2: Standards for medium and large zoos

In addition to meeting the standards set out in part 1 of this section, medium and large zoos (as defined above) must do the following:

- 12.6** All medium and large zoos must name which member of their research focused staff is responsible (either on a part-time or full-time basis) for leading on the administration and management of research and researchers.
- 12.7** All medium and large zoos must make sure that research-focused staff contribute to national and international research programmes and forums (for example, submit abstracts to research conferences for potential presentation, contribute to committees, journal publications or similar).

Part 3: Standards for large zoos

In addition to meeting the standards set out in parts 1 and 2 of this section, large zoos (as defined above) must do the following:

- 12.8** All large zoos must facilitate and operate research training and knowledge exchanges which must be documented. This can include (but is not limited to):
- working with small and medium zoos to collaborate on research projects
 - providing research resources to smaller zoos
 - sharing information and expertise on how to conduct research within the living collection (for example, jointly with other zoos, or in collaboration with the British and Irish Association of Zoos and Aquariums (BIAZA) or the European Association of Zoos and Aquaria (EAZA) where doing so would be more effective than individual efforts)

Documentation required for inspection

This documentation must be available for inspection:

All zoos

- research statement and available project list (12.1)
- records of research activities and list of projects (12.3)
- minutes of any ethical review meetings (12.4)

Medium and large zoos

- list of articles, reports, conference proceedings and any other research-related outputs (12.7)

Large zoos

- report documenting research collaborations, knowledge sharing and mentoring of smaller zoos (12.8)

Section 13: Stock Records

General provisions

13.1 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 previous locations, 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 of and dates of any 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 on the [International Union for Conservation of Nature \(IUCN\) Red List](#)

13.2 An Annual Stock Record of all animals must be maintained from 1 January to 31 December (for example, 1 January to 31 December 2022). A copy must be forwarded to the licensing authority no later than 1 April of the following year (for example, 1 April 2023). The Annual Stock Record must include the following information:

- a) total number of animals in the collection on 1 January
- b) common and scientific names of the species
- c) hazardous animal categorisation (see appendix 2)
- d) number of arrivals into the collection from all outside sources
- e) number of births or hatchings within the collection in the reporting year
- f) number of animals that died, including culls
- g) number of animals to depart the collection, including sales and breeding loans
- h) the sex of each animal, where known
- i) total number of animals remaining in the collection on 31 December of the reporting year
- j) the sex of each animal, where known - for example, 1.2.3 indicates 1 male, 2 females and 3 unsexed
- k) conservation status on the [International Union for Conservation of Nature \(IUCN\) Red List](#)

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

Table 1: Annual Stock Record Format

Common name	Scientific name	Group on 1 Jan 2022	Arrived	Born	Died	Departed	Group on 31 Dec 2022
White-naped crane	Antigone vipio	2.1.1	0.2.1	0.0.2	1.0.0	0.1.0	1.2.4

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

Explanatory notes for standard 13.3

- 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.

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

Explanatory notes for standard 13.4

- a) Annual Stock Record for individual animals - this must tally so that all the columns add up to the final count on 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 vertebrates.

13.5 Where a zoo includes a wildlife rehabilitation operation, a separate Animal Stock Record of all native, rescued, and rehabilitated wildlife must be kept by the licence holder. The Wildlife Annual Stock Record must include the same details required for the captive collection Annual Stock Record as outlined in 13.2 and must clearly separate the rescue or rehabilitation population from the permanent collection animals. A copy must be forwarded to the licensing authority no later than 1 April of the following year to which it pertains, along with the permanent collection Annual Stock Records.

Documentation required for inspection

This documentation must be available for inspection:

- animal records (13.1)
- annual stock record – individual counts (13.4(a))
- annual stock record – census or colony counts (13.4(b))
- annual stock record – wildlife rehabilitation (13.5)

Section 14: Ethical Review

General provisions

- 14.1** The licence holder must have a written policy and process 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.
- 14.2** The licence holder must have a committee that looks at all ethical issues related to the operation of a zoo, both human and animal. Examples include (but are not limited to):
- acquisition, transfer, and transition of animals, including with reference to their IUCN status
 - animal experiences
 - on-site events that may impact upon animal behaviours
 - husbandry practices
 - painful interventions
 - treatment of abnormal behaviours
 - animal training activities, including purpose and intent
 - hand-rearing of animals
 - shows and performances involving animals, including purpose and intent
 - euthanasia of animals (except those euthanised on veterinary advice)
 - isolation of individuals of social species
 - population management, including breeding and culling policy
 - research projects involving animals or human participants (in and ex situ)
 - collection, transfer, and storage of personal and biological data
- 14.3** The committee must have at least 1 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). Membership of the committee must be varied and rotate in accordance with the topics under consideration.
- 14.4** The ethical review process must always include the zoo's lead veterinary practice or a relevant veterinary advisor when issues of animal health and welfare are under discussion.
- 14.5** The ethical review process must operate a minimum of twice a year and as required as issues come up. The work of the committee must be carried out as transparently as possible. Ethical reviews must be documented, preferably as meeting minutes, highlighting the consideration of each issue and not just the outcomes. All documentation must be available for inspection.

14.6 The licence holder must make sure that any painful husbandry practices or invasive veterinary interventions are subject to ethical review prior to taking place and the justification documented. They must only be carried out by the lead veterinary practice.

Documentation required for inspection

This documentation must be available for inspection:

- written ethical review policy and process (14.1)
- documented ethical reviews (14.5)

Appendix 1: Specialist Exhibits

Preface

The Zoo Licensing Act 1981 applies to all animals kept in licensed zoos. These Standards therefore apply to a wide variety of species which have very different environmental and welfare requirements.

Whilst sections 1 to 14 contain general standards that are applicable to a wide range of zoos and zoo animals, standards on specific species are covered in the following appendices on:

- 1.1 Invertebrates
- 1.2 Public Aquariums
- 1.3 Reptiles and Amphibians
- 1.4 Venomous and Poisonous Species
- 1.5 Aquatic Birds
- 1.6 Birds of Prey
- 1.7 Marine Mammals
- 1.8 Elephants
- 1.9 Great Apes

These appendices must be reviewed by zoo licence holders and zoo operators and, where applicable, the standards adhered to.

Appendix 1.1: Invertebrates

General provisions

- 1.1.1 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.
- 1.1.2 For invertebrate collections, 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.
- 1.1.3 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.

Explanatory notes for standard 1.1.3

- a) For some species, births and deaths can be difficult to record. In these cases, census or colony counts may be required (see section 13 on Annual Stock Records).
- b) Invertebrate populations can exhibit mortality events and other large swings in population. Where these occur, they must be recorded.

The captive environment

- 1.1.4 Invertebrates must be kept within their preferred temperature range. Where doubts in the literature or current knowledge exists, a choice of habitats with different temperatures and relative humidity (and where appropriate, different substrates) must be provided.
- 1.1.5 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).
- 1.1.6 Invertebrates must be given the opportunity to exhibit natural behaviours, such as burrowing, foraging, and feeding, mating behaviours, ambulatory behaviours, and flight in some species. Enclosures must be of appropriate design, including height, substrate depth, humidity and temperature and light levels, to encourage natural behaviours. Stocking densities must be kept at appropriate levels for the taxa.

- 1.1.7** 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).
- 1.1.8** 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.
- 1.1.9** 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 2).

Feeding and nutrition

- 1.1.10** An appropriate diet and water source must be given, dependent on species or taxa, following the current knowledge base. Examples include provision of calcium sources for snails and sufficient suitable fresh browse for herbivorous species.

Invertebrates as live food

- 1.1.11** 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) 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) where invertebrates are sourced from the wild as a food source (see standard 7.18), the acquisition is subject to ethical review

Healthcare

- 1.1.12** The licence holder must consider suitable methods of euthanasia or culling of invertebrates by following the current best practice guidelines.
- 1.1.13** Health screening must be carried out upon arrival of new invertebrates (including ova) into the collection, particularly for wild-caught stock. Visual health assessments must be undertaken upon arrival into the collection, and before introduction to the general collection. A quarantine area or isolation facility must be provided.
- 1.1.14** Veterinary guidance on invertebrates is developing, but specialism in invertebrate medicine is not widespread. Staff responsible for invertebrate collections must seek suitable advice from a veterinary surgeon who has knowledge of managing and treating invertebrates.

Staff management

- 1.1.15** The licence holder must make sure that they have appropriately skilled and trained staff for managing invertebrates.

Documentation required for inspection

This documentation must be available for inspection:

- species record of all invertebrate taxa held (1.1.3)
- evidence of specialist husbandry advice sought (1.1.9)
- ethical review process for live feed or acquisitions from the wild (1.1.11)
- evidence of best practice guidelines consulted on euthanasia (1.1.12)
- evidence of veterinary advice sought on invertebrate medicine (1.1.14)

Appendix 1.2: Public Aquariums

Preface

Aquariums 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).

The captive environment

- 1.2.1** 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.
- 1.2.2** Enclosures must provide environments well adapted to meet the physical, psychological, and social needs of the species to which they belong.
- 1.2.3** There must be provision of a sufficient life support system to ensure the maintenance of water quality within set parameters to always meet species specific requirements.
- 1.2.4** The licence holder must produce and maintain a written Environmental Management Plan for each aquatic system. The Environmental Management Plan must clearly define the target ranges for environmental parameters that are appropriate for the species kept, as well as the reactive processes to be implemented where a parameter deviates outside the defined ranges. This must be to the satisfaction of the licensing authority and the zoo inspectorate.

Explanatory notes for standard 1.2.4

- a) Minimum water quality management parameters that must be included in the Environmental Management Plan are temperature, pH, salinity (where using a saltwater system), Oxidation Reduction Potential (ORP) where ozonation is used, oxygen saturation, ammonia, nitrite, nitrate, phosphate, and alkalinity.
- b) The Environmental Management Plan must include provision of appropriate lighting, considering individual species requirements.
- c) The environmental parameter ranges must be informed by field data or published literature from a peer reviewed source, where possible.
- d) The Environmental Management Plan 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 make sure that water quality testing is accurate and reflective of the actual values present.
- e) Processes and procedures must be in place to make sure 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.
- f) The Environmental Management Plan 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, pre-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.

1.2.5 Water quality test results must be recorded and maintained such that the pre-determined limits set out in the Environmental Management Plan are visible and any deviations from those 'normal' defined ranges have recorded actions and responses.

1.2.6 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 effects in the change of conditions.

1.2.7 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.

- 1.2.8** In the event of a power cut, emergency backup life support systems must be in place to include as a minimum emergency aeration.
- 1.2.9** There must be a written Power Cut Action plan that outlines the steps to be taken in the short, medium, and long term regarding maintaining critical environmental parameters until full power is restored.
- 1.2.10** Water quality testing of incoming water supplies must be carried out before introduction to animal aquaria to prevent significant fluctuations in water quality. The results must be recorded.

Explanatory notes for standard 1.2.10

- a) Values for nitrate, pH, ammonia, and alkalinity, which can vary in municipal water supplies over different seasons, must be tested and recorded.
- b) Incoming seawater supplies (if natural seawater is used) must be tested and recorded.
- c) Details of testing methods specific to incoming water must be included in the Environmental Management Plan.

Feeding and nutrition

- 1.2.11** Balanced diets which meet all the nutritional needs of animals (where known) must be provided and regularly reviewed against evidence-based guidelines.
- 1.2.12** All frozen food must be kept frozen until used and defrosted using established food preparation guidelines for frozen feed. Fresh and prepared dried foods must not be used past their expiry dates. Records must be maintained of maximum and minimum temperatures for food storage during freezing and refrigeration or defrosting.

Healthcare

- 1.2.13** The licence holder must be able to demonstrate that health monitoring of individual aquarium inhabitants takes into account the monitoring of water quality.
- 1.2.14** 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.

Explanatory notes for standard 1.2.14

- 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.
- b) In such cases, the justification must be recorded and be to the satisfaction of the licensing authority.

1.2.15 There must be a documented procedure in place for the capture and movement of aquatic animals.

1.2.16 Documented procedures must be established for the monitoring and treatment of wastewater where required (see standard 8.48). This must include written policies for the management of medicated wastewater.

1.2.17 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

1.2.18 Staff working with aquaria must be trained to an appropriate level to carry out their husbandry duties competently.

1.2.19 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 Environmental Management Plan, as well as the requirements for the species in their care.

Public safety

1.2.20 Where divers are permitted to have access to aquatic animal tanks and pools on the zoo premises (see section 9), the diver must hold a relevant diving qualification prior to entering the tank or pool.

1.2.21 Risk assessments and management of such dives must reflect the qualification of the diver. The public must not be permitted access to tanks containing category 1 listed carnivores.

1.2.22 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.

Documentation required for inspection

This documentation must be available for inspection:

- environmental management plan (1.2.4)
- water quality monitoring records (1.2.5)
- acclimation records (1.2.7)
- written power cut action plan (1.2.7)
- records of tests of incoming water supplies (1.2.10)
- records of food storage temperatures (1.2.12)
- procedure for catching and moving aquatic animals (1.2.15)
- procedure for the monitoring and treatment of wastewater (1.2.16)
- safety protocols (1.2.17)
- staff training and CPD records (1.2.19)
- risk assessments for any diving activities (1.2.21)

Appendix 1.3: 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 very difficult.

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 for survival in captivity.

The captive environment

1.3.1 The licence holder must keep animals in environmentally controlled vivaria, or in open enclosures inside a larger controlled climate space.

Explanatory notes for standard 1.3.1

- 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.
- b) Where outdoor housing is used, steps must be taken to prevent native wild reptiles and amphibians from interacting with captive animals, and to safeguard enclosure inhabitants from predators and pests.

1.3.2 The environments for all reptiles and amphibians must provide for all the animals' needs, including with regard to:

- space
- enrichment or furniture
- temperature (both on land and in water, where applicable)
- light and photoperiod
- ultraviolet light
- humidity
- ventilation
- access to water
- water quality
- shelter

1.3.3 The licence holder must maintain a documented Environmental Management Plan for each reptile and amphibian species in the collection. The Environmental Management Plan must clearly define target ranges for each environmental parameter and the processes to be implemented where monitored parameters deviate outside of the defined target ranges. This must be to the satisfaction of the licensing authority and the zoo inspectorate.

Explanatory notes for standard 1.3.3

- a) Field data or published literature from a peer reviewed source (where available) must inform environmental parameter ranges.
- b) All reptiles and amphibians must have the choice to select their microhabitat within a range of environmental gradients inside the vivaria.

1.3.4 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 the provision of multiple separate resources (where required).

Temperature

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

Explanatory notes for standard 1.3.5

- a) 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.
- b) The Environmental Management Plan must outline the justification of short term or permanent alterations to these variations.

1.3.6 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 images, or a data logger).

1.3.7 Safe local sources of intense heat (for example, heat pads and basking lamps) must be provided for the species that need them. Basking areas must be at least equal to the size of the animal in its natural basking position. If there are multiple animals, basking areas must be large enough to allow several animals to bask at the same time.

1.3.8 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.

1.3.9 Water temperature must be specific to the species requirements.

Lighting and photoperiod

1.3.10 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.

Explanatory notes for standard 1.3.10

- 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).

1.3.11 The licence holder must provide UV light (both UVA and biologically significant wavelengths of UVB) at species specific levels as dictated in the Environmental Management Plan. Biologically significant wavelengths of UVB must be provided (for example, 290 to 315 nm). UV radiation must be provided as a gradient. Where there is no evidence that UV light is essential for the welfare of the species, the decision not to provide UV light must be documented with justification in the Environmental Management Plan.

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

1.3.13 UV 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 Environmental Management Plan. Most glazing materials or meshes do not transmit natural UV light and must be positioned to ensure provision.

Humidity and ventilation

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

1.3.15 Ventilation must be appropriate for the species.

Explanatory notes for standard 1.3.15

- 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

- 1.3.16** 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 Environmental Management Plan.
- 1.3.17** 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.
- 1.3.18** All 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).
- 1.3.19** 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.
- 1.3.20** All amphibian waste water 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 efficacy of the disinfectant.

Environmental monitoring and recording

- 1.3.21** The Environmental Management Plan 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 as well as the mitigative action taken and the results of any such action.
- 1.3.22** 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. Faulty equipment must be replaced immediately.
- 1.3.23** Monitoring must be able to demonstrate that a variety of microhabitats and a range of environmental parameters are available, providing choice in all enclosures for all reptiles and amphibians.

1.3.24 Environmental parameters listed in the Environmental Management Plan must be monitored and recorded according to the schedule in the table below (as a minimum requirement). In addition, these environmental parameters must be measured and recorded when:

- 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 both planned and unplanned changes in environmental parameters (inclusive of seasonality)
- d) heating and lighting equipment is replenished or replaced (for example, lamp changes)

Table 1: Environmental Monitoring and Recording

Environmental parameter	Measuring method or apparatus	Frequency (routine monitoring)
Ambient room temperature	Thermometer (for example, digital or data logger)	Daily
Vivaria temperature (Basking zone and cool end)	Thermometer (for example, digital, data logger or thermal imaging camera)	Every 4 months (minimum, if not recorded following 5.3 x A-D within a 4-month timeframe)
UVI	UVI meter	Every 4 months (minimum, if not recorded following 5.3 x A-D within a 4-month timeframe)
Water parameters (temperature, ammonia, nitrite, nitrate, pH)	Dip strips, tablets, digital or photometer	Once every 2 weeks for aquatic and semi-aquatic species or life stages (minimum)

1.3.25 As a minimum, the licence holder must make sure that environmental parameters are documented and recorded as below:

Terrestrial parameters

- Bask zone expanse: 60cm x 20cm
- Bask zone temperature: 32.0 - 36.0°C
- Ambient temperature: day: 29.0°C; night: 27.0°C
- Minimum temperature: day: 27.9°C; night: 27.0°C
- UVI range across entire enclosure: 0 - 4
- UVI range within bask zone 2.0 - 4.0

Outcome

Parameters are suitable for this species and in line with the Environmental Management Plan for the species.

Aquatic parameters

- Temperature: 21.0°C
- Ammonia: 0.03mg/L
- Nitrite: 0.01mg/L
- Nitrate: 0.0 mg/L
- pH: 8.2

Outcome

Parameters are suitable for this species and in line with the Environmental Management Plan for the species.

1.3.26 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).

1.3.27 If events occur that result in excessive abnormal noise, the licence holder must be able to demonstrate that mitigative action has been taken to reduce the impact on the animals.

Furniture and substrates

- 1.3.28** Shelters must be provided throughout enclosures to ensure that animals do not have to choose between physiological needs and security.
- 1.3.29** Stocking densities and resource availability within enclosures must be considered. Each individual must be able to access all resources at the same time.
- 1.3.30** Rough surfaces to aid sloughing must be provided for the species that require them.
- 1.3.31** Enclosures must be spatially complex to facilitate three-dimensional use of the environment. This must include provision for climbing for all terrestrial species and must not be limited to arboreal species.
- 1.3.32** Substrates of the appropriate type and depth must be provided for burrowing and digging species.
- 1.3.33** All substrates and furnishings for amphibians must be treated as clinical waste due to the risk of pathogen spill over (for example, *Batrachochytrium dendrobatidis* or salamandriviruses and ranaviruses).

Enclosures and space requirements

- 1.3.34** Enclosures, tanks and vivaria must be individually marked with labels relevant to the species contained within. Labels must indicate the number of animals held and, with category 1 listed species, the potential hazard must be clearly marked.
- 1.3.35** The size of enclosures for reptiles and amphibians must be appropriate to the life stage, 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), the provision of the range of environmental parameters stipulated in the Environmental Management Plan, the number of individuals and the sex ratio.

Explanatory notes for standard 1.3.35

- a) Reptiles and amphibians will utilise large spaces if they are correctly allocated. The apparent inactivity of many captive reptiles and amphibians does not generally reflect wild behaviour patterns and is, in many instances, a consequence of inappropriate captive conditions rather than an inbuilt behavioural inertia.
- 1.3.36** Arboreal animals must be provided with enclosures of sufficient height to meet the needs of the species.

- 1.3.37** 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 quarantine.
- 1.3.38** Pool depth for crocodylians in permanent housing must be provided as a gradient where the deepest parts are at least twice the height of the highest inhabitant in a standing position on all fours.
- 1.3.39** Enclosures for frogs must be longer than the maximum length that the frog can jump.
- 1.3.40** Where animals have seasonal outdoor access, indoor housing must provide for all the animals' needs during the winter period if they are species that do not hibernate.
- 1.3.41** Viewing glass panels on enclosures and vivaria containing category 1 listed reptiles must be toughened or shatterproof for added safety.
- 1.3.42** The licence holder must demonstrate that provision for minimal contact has been considered in the design and management of enclosures for category 1 listed species.

Service areas

- 1.3.43** 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.
- 1.3.44** Service areas must be kept free of clutter and handling and catching equipment must be readily available close to enclosures.
- 1.3.45** Service areas must be designed to facilitate re-capture of animals in the event of escape, providing no refuge areas that would make re-capture unnecessarily difficult.
- 1.3.46** There must be hand washing facilities, including hot and cold or appropriately mixed running water, available for staff.
- 1.3.47** Emergency lighting, automatically activated in the event of power failure, must be installed in service areas.
- 1.3.48** On immediate entry to service areas containing category 1 listed reptiles and amphibians, there must be appropriate signage warning of the potential hazard.

Feeding and nutrition

1.3.49 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 of the food item for the animal being fed).

Explanatory notes for standard 1.3.49

- 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.

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

Explanatory notes for standard 1.3.50

- a) Some food items are very small (for example, new-born rodents, very small fish) and by the time they are defrosted in a fridge and brought up to room temperature, the food item may be unsuitable for use. These can be defrosted at ambient temperature.

1.3.51 Balanced diets which meet all the nutritional needs of animals (where known) must be provided and regularly reviewed against evidence-based guidelines.

1.3.52 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).

1.3.53 The nutritional quality of commercially bred invertebrates must be improved by gut loading.

1.3.54 Dusting is an established method for improving the nutritional quality of food. If used, dietary supplements must be stored as per the manufacturer's guidelines and must be dusted on food items immediately prior to feeding.

1.3.55 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.

Healthcare

- 1.3.56** Records must be kept of all individual animals (when individuals can be identified). In addition to the standard information in the Animal Records (see section 13), records must be kept of environmental parameters, feeding, sloughing, and egg-laying for reptiles and amphibians.
- 1.3.57** Husbandry management strategies must be able to demonstrate consideration and prevention of transmission of pathogens and other biological agents between enclosures and to and from native species.
- 1.3.58** Amphibian skin is incredibly sensitive. Powder free gloves must be worn when handling any amphibian.
- 1.3.59** Reptiles and amphibians must only be handled in environments that are within the desired range of optimal parameters as outlined in the Environmental Management Plan. Animals must only be held in an environment which is controllable. This includes transport to and from the area in which the animal is to be handled.
- 1.3.60** Where reptiles and amphibians 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

Explanatory notes for standard 1.3.60

- a) If animals are needlessly handled, moved too often or are 'over-used', a result could be unnecessary stress leading to illness of the animal, or even potential illness or injury to the public (for example, in the event a stressed animal bites or if the animal sheds Salmonella due to stress).
- 1.3.61** 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.
- 1.3.62** The physical condition of all reptiles and amphibians must be assessed and recorded by zoo staff at least every 6 months.

Explanatory notes for standard 1.3.62

- 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 recording weights or physical condition include assessment of the physical condition for some life stages and housing scenarios where it is not practically possible to do so (for example, group housed tadpoles) or some scenarios (for example, free ranging reptiles and amphibians in large biomes).

Behavioural management

1.3.63 A schedule of enrichment must be incorporated into husbandry routines for reptiles and adult life-stages of amphibians (see standard 4.5).

1.3.64 Efforts must be made to incorporate training plans in the routine management of reptiles (see standard 9.33).

Mixed species exhibits and group housing

1.3.65 The licence holder must be able to meet all the environmental needs stated in the Environmental Management Plan for each species and individual cohabiting in the same vivaria.

1.3.66 Cohabitants must be selected with due consideration to the natural history of the species. They must not harm or predate on one another.

Documentation required for inspection

This documentation must be available for inspection:

- environmental management plan (1.3.3)
- documented justification for non-use of UV light (1.3.12)
- records of environmental parameters (1.3.21, 1.3.24 and 1.3.25)
- healthcare records (1.3.56)
- health assessment records (1.3.62)

Appendix 1.4: 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.

Where a species is not listed in category 1 or 2 of the 'hazardous animal categorisation' list (see appendix 2) due to being new to captivity and is considered a medically significant venomous or poisonous species, then this section applies equally to said new species.

General provisions

- 1.4.1** Where the collection holds category 1 or 2 listed venomous or poisonous species, the licence holder must make sure that enough suitably trained staff are always available for routine and non-routine management.
- 1.4.2** 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.
- 1.4.3** Viewing glass panels on enclosures and vivaria must be toughened or shatterproof for added safety.
- 1.4.4** Enclosure design must facilitate a minimal contact approach for routine and non-routine management.
- 1.4.5** 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.
- 1.4.6** On immediate entry to service areas, there must be appropriate warning 'venomous' or 'poisonous' signage relevant to the species held.
- 1.4.7** Service areas must be escape proof and clutter free with good visibility on entering the area (for example, through a viewing window).
- 1.4.8** Service areas must be designed to facilitate re-capture if necessary and have no refuge areas that would make safe re-capture unnecessarily difficult.
- 1.4.9** Emergency lighting, automatically activated in the event of power failure, must be installed in service areas.
- 1.4.10** Service areas must be appropriately equipped in the immediate vicinity with handling or management equipment specific to the species held.

- 1.4.11** 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.
- 1.4.12** Access points to enclosures, tanks and vivaria 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
- 1.4.13** Enclosures must be kept individually locked and access made available only to authorised and trained staff.
- 1.4.14** 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 available. The licence holder is responsible for their own antivenom provision, which must be stored either at the zoo or at the nearest hospital. Antivenom must be stored in accordance with the manufacturer's instructions.
- 1.4.15** 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.
- 1.4.16** 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.
- 1.4.17** The licence holder must make sure that appropriate documented training is provided to all staff who work with venomous and poisonous species.
- 1.4.18** 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.

1.4.19 Written protocols for venomous and poisonous species must be available for the following:

- safe working practices, supported with risk assessments, with emphasis on a minimal contact approach
- actions to be taken in the event of an escape
- 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
- the safe transport of these animals whatever the purpose of the movement, whether within the collection, or to another site
- health care, safe euthanasia, and post-mortem examination protocols, specifically when dealing with venomous or poisonous anatomical body parts

Annual audits of written protocols must be undertaken, and evidence must be available for inspectors.

1.4.20 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.

1.4.21 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).

Documentation required for inspection

This documentation must be available for inspection:

- written protocols for security of service areas (1.4.11)
- documented training for staff (1.4.17, 1.4.18)
- written safety and escape protocols (1.4.19)
- review of operational protocols (1.4.20)
- documented emergency practice sessions (1.4.21)

Appendix 1.5: 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:

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

Guidelines for management can be found by searching for specific taxonomic groups on the [Avian Scientific Advisory Group](#) website and by contact with various Taxonomic Advisory Groups in the European Association of Zoos and Aquaria (EAZA).

Peer-reviewed publications on the measurement and assessment of the welfare of specific species of aquatic birds are also available in the scientific literature.

The captive environment

- 1.5.1** Where non-domesticated aquatic birds are given free access to outside enclosures overnight, the licence holder must make sure that predator-proof fencing (or similar to exclude predatory birds) is in place to deter or prevent predation by foxes, cats, mustelids, or other small mammals, as well as predatory birds.
- 1.5.2** Either the perimeter fence or enclosure fences must be at least 2m high with an additional overhang and buried to approximately 0.5m to make sure that a fox-proof perimeter is always provided.
- 1.5.3** There must be a pulsed electric fence to deter predators such as rats from attacking aviary mesh and foxes from entering open-topped enclosures when the zoo's perimeter fence is not predator-proof.
- 1.5.4** Netted enclosures must have the minimum number of uprights possible (based on the individual design and structural integrity of the aviary) to reduce the chances of bird strikes during flight and to aid in natural behaviour.

- 1.5.5** Enclosures must be designed to ensure access to water is provided in such a way that the available surface area and volume provide for the specific welfare needs of all individuals of the species. Allowing, where appropriate, swimming, diving, wading, and feeding or foraging according to species-specific behavioural and ecological needs.
- 1.5.6** 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 constructed. A shallower graduated easy exit from the pool must be provided for young penguins where drowning is a risk.
- 1.5.7** Macaroni and rockhopper penguins (*Eudyptes* sp.) must be provided with a launch position for exiting the water (for example, deep area with a steep side and suitable landing platform) to encourage swimming.
- 1.5.8** Water quality is important and must be assessed regularly and, as a minimum, at least once a week. Frequency and methodology of testing must be dependent on the requirements of the water flow or filtration system utilised and records must be kept for inspection.

Explanatory notes for standard 1.5.8

- a) Natural or unfiltered water ponds are acceptable (for example, for Anseriformes) but care must be taken to make sure pathogenic build up does not occur by regular testing of water quality (for example, testing twice a week depending on prevailing environmental conditions and stocking).
 - 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).
- 1.5.9** Water temperature must be managed where it is essential for the welfare of particular species (for example, for tropical species that roost in water) and must be maintained at temperatures that promote good health and wellbeing during cold weather.
- 1.5.10** When birds are housed indoors under artificial light, species-appropriate lighting must be provided, and choice of provision documented as correct lighting wavelength and strength is essential to maintenance of plumage quality and behaviour.
- 1.5.11** Where closed systems are used, water quality must be monitored on a minimum of once weekly schedule. The licence holder must be able to demonstrate an active water quality monitoring programme and records of monitoring and management of set parameters to defined criteria (see Appendix 1.7 for guidance on monitoring parameters in marine systems and their ranges).

- 1.5.12** Cold sensitive waterfowl species (for example, magpie geese, *Anseranas semipalmata* and whistling ducks, *Dendrocygna* sp.), must be provided with appropriate shelters in their enclosures. Vegetation or other suitable enclosure features must be used to provide shelter and shade, and to offer some protection to birds from chilling and frostbite (this must be reviewed and implemented on a species-by-species basis).
- 1.5.13** Tropical waterfowl must be provided with indoor and heated accommodation (especially for those species that are sensitive to frostbite).
- 1.5.14** Antarctic ice-dwelling penguin species (emperor, *Aptenodytes forsteri* and Adelie, *Pygoscelis adeliae*) need year-round cooling and must be provided with specialised closed environment exhibits with appropriately low temperatures, filtered air and high ventilation rates. The licence holder must be able to demonstrate that the species-specific requirements are defined, being monitored, and recorded including steps taken to correct the environmental changes when monitored parameters fall outside of the target ranges.
- 1.5.15** 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).
- 1.5.16** Hybridisation must be avoided by not mixing similar species in the same enclosure and by preventing access to the enclosure by wild birds of similar species to those housed (see standard 5.13).
- 1.5.17** 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.
- 1.5.18** The complexity of an exhibit must be suitable to provide protection and shelter for all species housed within and make sure that interspecific aggression can be controlled to prevent the development of health and welfare problems.
- 1.5.19** The mixing of species must be monitored at the point of mixing and during daily husbandry rounds. Steps must be taken to minimise aggression when needed (for example, placement of barriers, increasing resources in the enclosure, separation when needed). Records of daily checks and any steps taken to minimise aggression must be kept.

Feeding and nutrition

- 1.5.20** Areas of grass must be provided for the following species: geese (for example, *Branta* and *Anser* sp.), swans (*Cygnus* sp.), shelducks (*Tadorna* sp.), sheldgeese (*Chloephaga* sp.) and grazing ducks (for example, wigeon, *Mareca* sp.). 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.
- 1.5.21** For enclosures housing penguins, long, fibrous grasses in the immediate environment must be avoided as they can lead to intestinal impaction (except in the breeding season for species such as the gentoo penguin, *Pygoscelis papua*, that will incorporate vegetation into its nest).
- 1.5.22** Specially formulated waterfowl pellets must be used, where available, for all species to meet species specific requirements (including a change of diet in the breeding season if required). Flamingos must be provided with bespoke flamingo pellet to make sure that carotenoid-induced plumage pigmentation occurs.
- 1.5.23** Frozen fish or other frozen food maintained for marine bird species must be stored in freezers that are maintained at a maximum temperature of minus 18°C. Thawing temperatures on refrigeration must not go over 5°C and for a maximum of 24 hours to minimise bacterial overgrowth. Refrigerated thawing must be used to preserve nutrient content of the feeder fish.
- 1.5.24** The length of time food is stored, the method of storage, the thawing of frozen food, and the maintenance of thawed food must be done in way that minimises contamination and assures that the food keeps its nutritive value and wholesome quality until the time of feeding.
- 1.5.25** Where hand feeding of birds by the public is allowed, the amount fed to these birds must be recorded to make sure individuals are not over or under fed according to their expected daily ration of food. Timing of regular feeds (by the zoo) must not be unduly disrupted by public feeding (see standard 3.26 and 3.27).

Healthcare

- 1.5.26** 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 (see section 14).
- 1.5.27** Feather trimming of fully winged birds must be considered and implemented for large waterbirds with poor in-air manoeuvrability (for example, flamingos and pelicans) when first released into netted enclosures to promote good health and reduce injury associated with collisions.

- 1.5.28** Regular veterinary review of prophylaxis must be undertaken, and clear records maintained, for example for annual vaccinations (for example, anti-malarial treatment and clostridial disease in penguins and Duck Viral Enteritis (DVE) vaccination for susceptible waterfowl species). Evidence of annual review by the veterinary provider must be available for inspection.
- 1.5.29** Ground substrate, in both the enclosure and areas of water, must be selected and maintained to mitigate excessive poaching, the development of pododermatitis ('bumblefoot') and other common foot problems.
- 1.5.30** The licence holder must regularly assess and document foot health in their stock and take action to manage the environment and the welfare of the individual bird where problems are noted. Enclosure surfaces must be highly resistant to faecal degradation, especially when keeping marine waterfowl, as their droppings significantly affect substrates.
- 1.5.31** Wild waterfowl that visit the collection can present dangers such as diseases, contamination of water supplies or aggression towards captive birds. Health care programmes, stocking densities and enclosure design must demonstrate consideration of these risks.
- 1.5.32** Where large migratory populations may be present, the licence holder must have a policy whereby the risks of contamination are reasonably contained.
- 1.5.33** Where penguins susceptible to avian malaria are kept, veterinary advice on prophylaxis, treatment and prevention must be sought and recorded in medical records.

Health and safety

- 1.5.34** The licence holder must have a documented contingency and biosecurity plan which demonstrates how safe visitation of the animal collection is enabled (if permitted) during an avian influenza (AI) outbreak, including all details on biosecurity measures in place.

Explanatory notes for standard 1.5.34

- a) The written protocols must be available to inspectors on request, including if there is no nation-wide AI outbreak at the time, to demonstrate what actions are being or would be taken by the licence holder to protect animals and humans.
- 1.5.35** Where an inspection occurs during heightened AI biosecurity regulations for any enclosure where access is through a public walkway within the enclosure itself, suitable disinfectants appropriate to prevent Avian Influenza transmission must be provided in a sponge mat format at the entrances and exits.

1.5.36 The licence holder must comply with housing orders put in place by an Avian Influenza Prevention Zone. Where indoor housing would have severe negative impacts on bird health, they must be able to demonstrate this to officials. Due consideration must be given to all housing options. Risks to both housing and not housing birds must be considered. These considerations and decisions must be documented.

Documentation required for inspection

This documentation must be available for inspection:

- water quality monitoring and testing records (1.5.8)
- records of decision-making on use of any artificial lighting (1.5.10)
- water quality monitoring programme for closed systems (1.5.11)
- environmental records for Antarctic ice dwelling penguins (1.5.14)
- record of daily checks on mixed species exhibits (1.5.19)
- record of feed monitoring for any hand feeding by the public (1.5.25)
- ethical policy and code of practice for flight restraint (1.5.26)
- veterinary records (1.5.28)
- foot health records (1.5.30)
- policy to reduce risk of contamination by migratory populations of birds (1.5.32)
- veterinary advice on prophylaxis where penguins are susceptible to avian malaria (1.5.28)
- contingency and biosecurity plan (1.5.34)
- evidence of decision-making on housing options for IA outbreaks (1.5.36)

Appendix 1.6: 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:

- aviaries, where birds enjoy relative freedom of movement, and are kept for display and sometimes captive breeding
- demonstration birds, tethered or not, that are free flown regularly for the public
- permanently disabled wild birds that cannot be released and are instead retained for educational or captive breeding purposes
- sick or injured wild birds, kept for triage, treatment, rehabilitation, and 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

1.6.1 The licence holder must be able to demonstrate that best practice husbandry is employed for the particular management systems utilised for the bird of prey species in their care, including bird training where appropriate. Husbandry practices will vary according to the rationale and requirements for maintaining the species.

The captive environment

Aviaries

1.6.2 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.

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

1.6.4 Enclosure barriers must prevent access of birds between aviaries or contact between them, and must minimise cross contamination by soiling, faeces, or water drainage.

- 1.6.5** Each aviary must have a variety of perches, suitable for the species kept, that are varied in width and texture for foot health. Perches must be located to encourage effective use of space and maximise flight distance from one perch to another.
- 1.6.6** Perches must be maintained in a hygienic state, disinfected as necessary using approved disinfectants and changed when necessary.
- 1.6.7** Aviaries must include refuges with at least 1 solid or screened wall, and birds must have the opportunity to move away from the view of the public or animals in adjacent enclosures (see standard 2.5 about refuge areas).
- 1.6.8** Many raptors prefer to perch at height, looking down on the public. Aviaries must provide suitable high vantage points for the species contained.
- 1.6.9** 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.
- 1.6.10** The licence holder must be able to demonstrate that the welfare needs of both predator and prey species are met with regard to enclosure location and aspect.

Demonstration birds and their environment

- 1.6.11** Demonstration areas and their immediate vicinity must be free of hazards for birds.
- 1.6.12** Demonstration areas for free-flown birds of prey 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 show how risk from injury by, or to, other animals in the zoo is mitigated for free-flying birds of prey in demonstration must be followed and made available for inspection.
- 1.6.13** The selection of species and individuals for free-flight demonstrations must aim to avoid or minimise conflict when flying multiple birds.
- 1.6.14** Birds in free-flying demonstrations must wear functioning telemetry devices unless there is a specific biological or behavioural reason not to do so.
- 1.6.15** No invasive alien species (as listed in the [Invasive Alien Species \(Enforcement and Permitting\) Order 2019](#)) may be used in free flying demonstrations.
- 1.6.16** The use of category 1 listed birds in free flying demonstrations must be subject to risk assessment to the satisfaction of the licensing authority. Safe Operating Procedures (SOPs) 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 SOPs.

- 1.6.17** 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).
- 1.6.18** Transport distance and time to and from demonstration areas must be minimised. If a bird is to be held for more than 1 hour at a demonstration area, suitable accommodation must be provided.
- 1.6.19** Birds of prey must not be housed or shut away in boxes at night. Short periods where circumstances may threaten a bird's general welfare (for example, extreme weather, damage to normal accommodation), under documented veterinary direction, are permissible. A protocol outlining these circumstances must be approved by the visiting veterinarian and available for inspection.

Tethering

- 1.6.20** The tethering of birds of prey as a routine management practice must be phased out of all zoological collections by 31 December 2027. Following this date, all birds must be free lofted in suitable aviaries and must not be tethered for public display. Tethering may be permitted for temporary reasons, such as veterinary treatment or during repairs to a damaged aviary. During the phasing out period, standards 1.6.21 to 1.6.32 must be met.
- 1.6.21** Owls, kites and vultures must not be tethered. They must be free-lofted and flown from aviaries.
- 1.6.22** All tethered birds must have corresponding aviaries.
- 1.6.23** Birds must not be tethered permanently and for no longer than 6 months continuously.
- 1.6.24** Tethered birds must not be able to reach other tethered birds.
- 1.6.25** Tethered birds must be at a distance that is out of reach from the public and no less than 1.5m. There must be a barrier to discourage the public from approaching the bird.
- 1.6.26** Tethered birds must be flown at least 5 times a week, unless they are tethered under direct veterinary treatment and supervision. Reasons for not flying 5 times a week must be justified and recorded (for example, bad weather).
- 1.6.27** Tethered birds must have their weight and condition recorded daily. Written records must be kept.
- 1.6.28** Tethered birds must always be provided with appropriate protection from extremes of weather, for example by the provision of shade, refuge, or heat, or by documented practice (for example, the immediate removal to a place of safety whenever necessary).

1.6.29 Tethered birds must have effective supplementary heating during October to April or where temperatures are less than 5°C. If supplementary heating is unavailable, the birds must be free lofted in suitable housing instead.

1.6.30 Tethered birds must be moved to protected premises at night. The licence holder must be able to demonstrate that these premises:

- a) have a minimum width, depth and height that accommodates the wingspan of the individual species
- b) are well-protected from attack by predators, including other tethered birds, especially at night

1.6.31 Tethered birds must not be left shut indoors or kept away from natural sunlight any longer than necessary to ensure that they are protected from any inclement weather.

1.6.32 Tethered birds must not be kept in direct view of flying arenas with free-flying birds.

Feeding and nutrition

1.6.33 Diet sheets must demonstrate food variety and feeding schedules, appropriate to the size, species, life stage and lifestyle of the individual bird.

1.6.34 Where whole animal diets are not fed routinely or regularly, the licence holder must demonstrate appropriate dietary supplementation that meets all nutritional needs.

1.6.35 All birds must have access to clean drinking and bathing water.

Healthcare

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

1.6.37 Trained, free-lofted birds must have their weight and body condition checked regularly, at least weekly. There must be records of these checks.

1.6.38 Birds in aviaries for breeding and birds that are not in free-flight displays must have their weight and body condition checked regularly as part of a documented health management plan.

1.6.39 The licence holder must make sure 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.

Rehabilitation

- 1.6.40** Rehabilitating, sick or injured free-living birds must not form an integral part of any zoo or collection.
- 1.6.41** Any wild bird admitted to a zoo for rehabilitation must undergo a veterinary examination covering health and welfare aspects. The licence holder must have in place an ethical review committee that undertakes an ethical assessment (see section 14). If birds cannot be released back to the wild with a chance of survival at least equal to their wildlife counterparts, then alternatives must be considered, including euthanasia.
- 1.6.42** Zoos undertaking rehabilitation and release of wild birds must have dedicated facilities that cater for the specific needs of wildlife casualties. Birds destined for release into the wild must be kept in conditions where they can keep their plumage and escape behaviour, gain confidence and fitness in flight, and behave naturally.
- 1.6.43** Recovering wild birds must be maintained completely separate from captive collection animals, with documented biosecurity protocols in place demonstrating clear segregation. This includes biosecurity protocols for the staff caring for them, and equipment (see standard 7.24).
- 1.6.44** Recovering wild birds must not be put on general display but screened from the public gaze. Very nervous birds must be kept off-show. An ethical assessment must be undertaken that considers the specific welfare needs of recovering wild birds.
- 1.6.45** Nothing may occur to an injured wild bird intended for release, by action or lack of action, which is likely to prevent or delay the bird's release (for example, feather damage, bumblefoot or imprinting). Releases must be legally compliant and reflect current best practice.
- 1.6.46** Rehabilitated, permanently disabled birds that are unsuitable for release must only enter a collection for education or breeding purposes if they are temperamentally suited to do so. Their welfare and quality of life must be considered at all stages of this decision-making process and beyond.
- 1.6.47** Permanently disabled birds must not be tethered. 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.
- 1.6.48** Where permanently disabled birds are co-housed with uninjured birds, compatibility and aggression levels must be monitored daily to make sure that the welfare needs of all birds in the aviary are met. Aviary signage must inform the public about the special circumstances of animals in these enclosures.

Staff management

- 1.6.49** The licence holder must be able to demonstrate that there is sufficient specialist knowledge and experience to meet the welfare needs of all bird of prey species in the zoo, particularly species that are challenging to house and manage (for example, species from the genus *Accipiter*).
- 1.6.50** 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.
- 1.6.51** The licence holder must ensure that keepers and flying operators 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

- 1.6.52** The licence holder must ensure that all birds used for flying displays are trained and flown by experienced handlers.
- 1.6.53** 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 (see section 8).

Explanatory notes for standard 1.6.53

- a) Regarding the escapes of birds in free flying displays or similar controlled flying exercises, it is recognised that birds sometimes fly off or 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.
- 1.6.54** Where bird of prey handling experiences with the public take place, risk assessments and records of the experiences must be available for inspection.

Documentation required for inspection

This documentation must be available for inspection:

- protocols to manage risks of injury (1.6.12)
- risk assessments and SOPS for displays with category 1 listed birds (1.6.16)
- protocols for housing birds (1.6.19)
- records for the management of tethered birds (1.6.20)
- records of weight and body condition (1.6.36, 1.6.37 and 1.6.38)
- health management plan (1.6.38)
- ethical assessments for rehabilitation birds (1.6.41)
- documented biosecurity protocols (1.6.43)
- ethical assessments for recovering wild birds (1.6.44)
- risk assessments and records of handling experiences (1.6.54)

Appendix 1.7: Marine Mammals

Preface

Marine mammals belong to the families Odobenidae, Phocidae, Mustelidae and the order Cetacea and are kept in zoos in a variety of ways and for a variety of reasons, including:

- enclosures, where marine mammals enjoy relative freedom of movement and are kept for display and possibly 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

Zoo licence holders and operators are encouraged to refer to relevant management guidelines produced by the European Association of Zoos and Aquariums (EAZA) and the European Association for Aquatic Marine Mammals (EAAM) for marine mammals.

The captive environment

Enclosures

- 1.7.1** All marine mammal species are primarily aquatic and must be provided with the maximum practicable water space, both in length and in depth, appropriate to the species.
- 1.7.2** All species 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.
- 1.7.3** The risk of drowning in young pinniped pups, particularly sea lions and fur seals (which cannot swim at birth), must be taken into consideration regarding the design of the pool edge.
- 1.7.4** Provision must be made for separate accommodation for mothers and their pups required in breeding pinniped groups.
- 1.7.5** Where practical, all land areas must be designed to allow waste and excess water to drain away from the pool to prevent contamination.
- 1.7.6** Pool and land surfaces must be designed to prevent injury and 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.

Explanatory notes for standard 1.7.6

- a) Land surfaces with sand, pebbles or vegetation are acceptable, provided appropriate cleaning is practically possible and appropriate drainage is in place.

1.7.7 High 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 colour.

Environmental parameters

1.7.8 The licence holder must maintain a documented Environmental Management Plan for each marine mammal species in the collection. The Environmental Management Plan must clearly define target ranges for environmental temperatures and each water quality parameter to be measured as well as the processes to be implemented where monitored parameters deviate outside of the defined target ranges. This must be to the satisfaction of the licensing authority and the zoo inspectorate.

Explanatory notes for standard 1.7.8

- a) The environmental parameter ranges must be informed by field data or published literature from a peer reviewed source, where available.
- b) Environmental temperatures must be appropriate for the species.
- c) Wind chill factors must be taken into account when considering environmental temperatures of outdoor enclosures.
- d) Minimum expected water quality management parameters that must be included in the Environmental Management Plan 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

- 1.7.9** 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.
- 1.7.10** 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, to the satisfaction of the licensing authority and zoo inspectors, that welfare is enhanced with a net positive benefit for the marine mammals where they are maintained in a fresh water or natural lake system.
- 1.7.11** 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.
- 1.7.12** All chemicals used must be non-toxic and non-irritant at concentrations applied and water levels of each must be assessed routinely.
- 1.7.13** Where water is not supplied from the mains, incoming water must be regularly assessed to demonstrate baseline water quality parameters.
- 1.7.14** Where automatic on-line measurement systems are installed, the accuracy must be regularly checked and calibrated against manual systems.
- 1.7.15** Coliform counts must be used to review the quality and efficacy of filtration systems. The concentration of bacteria must be tested in marine mammal pool water as an indicator of disinfection capacity.
- 1.7.16** Separate pools or accommodation with an isolated stand-alone water system must be available for quarantine in case of illness or animal translocation.
- 1.7.17** 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.
- 1.7.18** Sea otters must not be kept in chlorinated water for more than 10 consecutive days.

Feeding and nutrition

- 1.7.19** Food for marine mammals must be wholesome, palatable, and free from contamination. Food must be of sufficient quantity and nutritive value to maintain the animals in good health. Diets must be prepared with consideration for factors such as age, species, condition, and body size of the animal being fed.
- 1.7.20** Frozen food must be stored in freezers that are maintained below minus 18°C (0°F). To minimise bacterial growth, refrigerated thawing temperatures must not exceed 5°C, and thawing time must not exceed 24 hours.
- 1.7.21** Frozen fish must be defrosted in a refrigerator, and never in running or still water.
- 1.7.22** Thawed, or partially thawed food must not be refrozen.
- 1.7.23** Once thawed, unused fish must be discarded the same day.
- 1.7.24** A diet sheet must stipulate food preparation, including the length of time food is stored, the method of storage, the thawing process, and the maintenance of thawed food in such a way that bacterial contamination is minimised, and the nutritional value and quality of foodstuffs is optimal at the time of feeding.
- 1.7.25** Vitamin supplementation and other medication prescribed by the supervising veterinary surgeon must be individualised for each species and individual, where appropriate, and their use must be documented.

Healthcare

- 1.7.26** There must be adequate facilities for handling and isolating animals safely when required.
- 1.7.27** The licence holder must be able to demonstrate to the inspectors their knowledge, competency and that appropriate facilities are available for restraint and anaesthesia for marine mammals, as these differ significantly from those for terrestrial species.

Rehabilitation

- 1.7.28** The licence holder must have a written triage policy to allow assessment of wild marine mammal species intended for rehabilitation. This must include a veterinary assessment, ethical review, and the consideration processes for euthanasia (if the individual animal is incapable of being released back to the wild with a chance of survival at least equal to their wildlife counterparts).

1.7.29 Rehabilitated, permanently injured animals unsuitable for release may enter a collection for educational purposes or for a captive breeding programme. In these cases, the licence holder must maintain written records of origin, legal acquisition and permits (as may be required) and written veterinary and ethical review assessments.

Explanatory notes for standard 1.7.29

- a) The veterinary and ethical review assessments must confirm that it is in the best interest of the animal to be taken into captivity permanently and that welfare and quality of life has been considered at all stages of this decision-making process.

1.7.30 Where rescued native species are held for short-term treatment and eventual release, strict biosecurity must be maintained between them and any marine mammals held as part of the zoo's permanent collection. Written protocols must be in place.

1.7.31 When permanently disabled animals are co-housed with un-injured marine mammals, compatibility and aggression levels must be monitored to ensure the welfare of all animals in the exhibit.

Staff management

1.7.32 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

1.7.33 Barriers around pools and land areas must be designed and positioned in such a way to prevent direct contact between the public and animals, especially if barriers are not solid, and bearing in mind that sealions and fur seals can both climb and leap out of the water.

1.7.34 Appropriate warning signage must be in place specifying the hazardous nature of the animal.

1.7.35 Safe working practices must be in place regarding staff, contractors, and the public in respect of daily husbandry routines, animal handling and animal safety in the event of an emergency (for example, fire, electrical or water hazards, chemical leakage or over dosage, plant failure or water loss).

1.7.36 Safe working practices 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).

1.7.37 Safe working practices and risk assessments must be in place where marine mammal animal contact experiences are offered (see section 9). These must include:

- a) marine mammal bite injury
- 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

Documentation required for inspection

This documentation must be available for inspection:

- evidence of pool design considerations (1.7.7)
- environmental management plans (1.7.8)
- water quality records (1.7.11)
- records of wastewater assessments (1.7.17)
- diet sheets (1.7.24)
- documented use of any vitamin supplementation (1.7.25)
- written triage policy on rehabilitation of wild animals (1.7.28)
- documentation supporting rehabilitation of wild animals (1.7.29)
- written biosecurity protocols (1.7.30)
- training records (1.7.32)
- safe working practices (1.7.35, 1.7.36 and 1.7.38)
- risk assessments for animal experiences (1.7.37)

Appendix 1.8: Elephants

Preface

This is an updated and amended version of Appendix 8 of the Secretary of State's Standards of Modern Zoo Practice (2012). 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. The [EWG Welfare Monitoring Toolkit](#) is available on the BIAZA website as well as guidance on how to implement it
- tools include behaviour monitoring, body condition scoring, locomotion, and foot health

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)).

Elephant facilities will normally be inspected by at least 1 nominated Defra-appointed elephant inspector.

If only 1 elephant inspector is present, the elephant inspectors may confer on elephant-related aspects of individual zoo inspection reports, including any recommendations or conditions, to ensure consistency of inspections.

Institutions will be expected to provide evidence to support achieving these standards.

The licence holder is ultimately responsible for ensuring these standards are met.

General provisions

1.8.1 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 30 years.

The LTMP must cover:

- 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) any breeding plans (if applicable):
 - i. where breeding is planned, the licence holder must have evidence that breeding occurs within stable multi-generational herds which include an adult bull or must document how they aim to achieve this in a practicable timeframe. If a collection wishes to breed, it must have an adult bull present to do this
 - ii. bulls must have the opportunity for social interaction with other elephants throughout their lives. If artificial insemination (AI) is considered necessary, then this must be subject to ethical review
- d) for breeding collections, the plan must document that there is sufficient capacity to house offspring, especially young bulls
- 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 chooses to no longer hold elephants

1.8.2 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 (see standard 1.8.45)
- b) diet plan (see standard 1.8.38)
- c) training programme (see standard 1.8.55)
- d) health and welfare monitoring data using the tools developed by the EWG (see the preface)
- e) behaviour profile (see standard 1.8.39)
- f) enrichment plan (see standard 1.8.40)
- g) details of any behavioural issues and mitigation plan (see standard 1.8.39)
- h) exercise plan (see standard 1.8.45)

The captive environment

Social grouping

1.8.3 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. This information must be available for inspection.

1.8.4 Young animals must not be transferred until over 4 years of age and dependant calves must be transferred with mothers.

1.8.5 The licence holder must make sure that any breeding that occurs is within stable multigenerational herds which aim for an age graded kin structure. If a collection wishes to breed, it must have an adult bull present in order to do this. If AI is considered necessary, then this must be subject to documented ethical review.

1.8.6 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.

1.8.7 Where there are unstable herds, a clear timeline must be put in place in the LTMP to achieve a stable herd. Evidence and review demonstrating efforts to achieve this (or that this has already been achieved) must be made available to inspectors.

1.8.8 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.

1.8.9 When cows are transferred, dependent offspring must be transferred with their mothers.

1.8.10 Bulls must stay with the maternal herd until puberty or maternal rejection.

1.8.11 Elephants (both bulls and cows) must have an unrestricted opportunity for physical contact with other members of the herd at all times but must also have the opportunity to get away from other elephants if desired and with due consideration given to compatibility and safety of all elephants.

1.8.12 Bulls must have the opportunity for social interaction with other elephants throughout their lives.

1.8.13 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. This must be supported by a documented assessment of behaviour indicating that this is necessary.

1.8.14 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, which must be available for inspection.

Explanatory notes for standard 1.8.14

a) Where compatibility issues are identified, these must be assessed and described in the LTMP for the herd along with plans to resolve them.

1.8.15 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.

1.8.16 Where evidenced compatibility problems arise, 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. Such records must be made available to zoo inspectors upon request.

1.8.17 African and Asian elephants must never be mixed in the same social grouping.

Enclosures

1.8.18 The licence holder must provide indoor and outdoor accommodation for all elephants and, other than in exceptional weather conditions or under veterinary instruction, must provide all elephants with access to both over a 24 hour period throughout the year with the ability to choose where they spend their time.

1.8.19 The licence holder must provide indoor and outdoor facilities and must make sure that both 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.

- 1.8.20** All indoor herd facilities must provide at least 600 square metres for 4, or fewer, animals and increase by at least 100 square metres for each additional animal over 2 years old. Indoor bull facilities, if separate, must be at least 320 square metres in area for each bull. In the 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 2030.
- 1.8.21** Indoor areas must be large enough to accommodate any future changes to group size, as outlined in LTMP, because of breeding or acquisition.
- 1.8.22** The licence holder must evaluate whether the facilities provided to the elephants are being used and, if not, demonstrate plans to mitigate this. The overall space requirement must be accessible to all animals and provide areas for individuals to choose to be together or apart.
- 1.8.23** Concrete flooring for indoor enclosures can cause foot and joint problems for elephants. Enclosures must use alternative substrates and minimise or eliminate use of concrete.
- 1.8.24** 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 comprise the entirety of the sleeping area to encourage natural behaviours important for good welfare, such as recumbent sleep.

Explanatory notes for standard 1.8.24

- a) Hard unyielding substrates can cause foot and joint problems. Deep sand encourages natural behaviours important for good welfare, such as recumbent sleep.
- 1.8.25** Flooring must be quick-drying, well-drained and able to be readily cleaned and disinfected. It must be relatively smooth but not slippery and with a degree of 'give' so that elephants can lie down comfortably.
- 1.8.26** Concrete, rubber and tile must only be used for a small, designated treatment or training area, if at all.
- 1.8.27** Outdoor areas for bulls and cows must provide all animals with a minimum shared space of 20,000 square metres (2 hectares) for 5 or fewer group living adults throughout the year. All collections must meet these minimum requirements by 1 January 2030.
- 1.8.28** Outdoor areas for bulls and cows must be as complex as possible and must encourage walking, exploration, grazing, foraging, social interaction, and maintenance behaviours (for example, dustbathing).
- 1.8.29** 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.

- 1.8.30** 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.
- 1.8.31** Outside substrates must be primarily natural (for example, soil, sand, or grass) with good drainage. Provision for all weather outdoor access must be available.
- 1.8.32** Elephants must be provided with the opportunity to bathe and each enclosure must contain at least 1 pool. Pools must be deep enough for elephants to fully submerge, have multiple entry and exit points that have gentle slopes and non-slip surfaces and be heated if necessary, to encourage use.
- 1.8.33** 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.
- 1.8.34** Elephants must be provided with opportunities to have dust baths and mud wallows, unless not feasible because of extreme weather conditions.

Feeding and nutrition

- 1.8.35** 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.
- 1.8.36** 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.
- 1.8.37** All forage must be of appropriate quality and analysed annually by appropriate laboratories to make sure it remains within nutritional guidelines. Such analysis must be made available to inspectors on request. 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.
- 1.8.38** Individual diet plans must be detailed in the IWP and be tailored to individual needs based on body condition score (BCS) (this is evaluated using the EWG's tool) and weight, based on veterinary 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

- 1.8.39** 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. There must be a written plan to address any behavioural issues identified in the EBWAT, and this evidence must be available to inspectors.
- 1.8.40** 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 5 enrichment categories (see standard 4.5).
- 1.8.41** Food presentation must be varied, time-consuming and induce intellectual challenge (for example, puzzle feeders).
- 1.8.42** 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.
- 1.8.43** 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

- 1.8.44** General health must be assessed regularly and must form part of the daily management routine. This must be documented, and evidence made available to inspectors.
- 1.8.45** 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.
- 1.8.46** 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 must be provided for inspectors.

Use of physical restraint

- 1.8.47** Elephants must not be physically restrained save for exceptional circumstances. Zoos must demonstrate steps 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 and made available for inspection, including the total time restrained.
- 1.8.48** 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 and made available to inspectors.
- 1.8.49** 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.
- 1.8.50** Elephant keepers must be adequately trained in the use of restraint equipment and procedures, and safety aspects followed. Evidence of training must be demonstrated to inspectors.

Public safety

- 1.8.51** Barriers must prevent escapes and direct contact with the public and must ensure the safety and wellbeing of both the elephants and staff.
- 1.8.52** Barriers and gates must not have horizontal bars 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.
- 1.8.53** Gates must be robust, and any hydraulic system must have manual back-up and an alternative power source. 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.
- 1.8.54** 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

1.8.55 Each institution must have an elephant training programme (documented in the LTMP) and individual tailored goals for each animal (documented in the IWP).

Management systems

1.8.56 All zoological collections must phase out the use of free contact management by 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.

Explanatory notes for standard 1.8.56

a) There are 2 recognised elephant management systems:

- Free Contact: the direct handling of an elephant when the keeper and the elephants share the same unrestricted space (without any solid elephant-proof barrier in between them). This includes direct contact with an elephant on restraints (referred to as 'Restricted Contact').
- Protected Contact: the elephant and the keeper never share the same unrestricted space. Management of the animal or contact is undertaken through a protective barrier.

1.8.57 All zoological institutions must phase out the use of ankuses by 1 January 2030. Collections using ankuses must be able to demonstrate that they are making the required changes to enable the shift by 1 January 2030. Justification for ankus use and evidence of ongoing staff training in the ankus use must be available to inspectors on request.

Explanatory notes for standard 1.8.57

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.

1.8.58 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, reviewed by management and be made available to inspectors on request.

1.8.59 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.

- 1.8.60** 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.
- 1.8.61** Goads may be used only by staff that have had appropriate training.
- 1.8.62** The licence holder must have a written policy on electric goad use which is approved by senior management and made available to inspectors. This must include named persons and parameters of use.
- 1.8.63** 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 and be made available to inspectors. Discussion must occur surrounding how use could be avoided in the future.

Documentation to be made available for inspection

This documentation must be available for inspection:

- long-term management plan (LTMP) (1.8.1)
- individual welfare plans (IWPs) (1.8.2)
- documented ethical reviews for transfers (1.8.3)
- documented ethical reviews for use of artificial insemination (AI) (1.8.5)
- timeline and review process to achieve stable herds (1.8.7)
- behaviour assessments for separations (1.8.13 and 1.8.14)
- plans to encourage elephants to utilise more enclosure space (1.8.22)
- diet plans (1.8.38)
- behaviour profile (1.8.39)
- plans to address any behavioural issues identified in the EBWAT (1.8.39)
- enrichment plan (1.8.40)
- records of daily health checks (1.8.44)
- healthcare plan (1.8.45)
- operant conditioning programmes and written protocols (1.8.46)
- written parameters of exceptional restraint (1.8.47)
- records of any uses of restraint for periods of 1 hour or over (1.8.48)
- documented training of keepers in the use of restraint equipment (1.8.50)
- training programme (1.8.55)
- records of any injuries caused by ankus use (1.8.58)
- written policy and reports on any electric goad use (1.8.62)

Appendix 1.9: Great Apes

Preface

All species of great ape (the family Hominidae which includes genus 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.

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.

Housing facilities and husbandry practices must reflect the differing needs of individuals of all ages.

General provisions

- 1.9.1** Enclosures must offer complexity that is both physically and mentally demanding, considering the social nature, high intelligence, longevity and varied and complex natural habitat of great apes.
- 1.9.2** Each species must be managed separately according to their specific biological needs. All individuals must be included in a long-term management plan that covers at least the next 10 years of their expected lifespan. The plan must be revisited frequently 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 include:
 - a) management structure of the collection (for example, breeding group, bachelor group, harem group, retirement facility) and expected changes throughout the planned tenure for holding the group (for example, introductions, group demographics, changes to the collection plan), and must be subject to internal ethical review
 - b) enclosure design incorporating flexibility to allow for changes in social groupings (for example, introductions, males excluded from breeding or bachelor groups)
 - c) enclosure review every 5 years to make sure that enclosures meet the management and welfare needs of the animals and that their needs will continue to be met
 - d) a designated team of primate keepers
 - e) staff training and a continuing professional development (CPD) programme, including awareness of current relevant research
 - f) updating and ensuring the safety and security of facilities

- 1.9.3** The licence holder must be able to demonstrate evidence-based practice. Evidence-based practice could be demonstrated through peer-reviewed research and best practice documentation.

The captive environment

- 1.9.4** 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: fission fusion 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 fission fusion access to other female-offspring units and males. Sexually mature (flanged) male orangutans must not be physically housed together or in sight
- 1.9.5** The licence holder must provide defined spaces within enclosures that allow individual choice over social groupings. Groups must include a variety of ages, where possible.
- 1.9.6** Breeding collections must have, or demonstrate 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 procedure must be undertaken, with the final decision signed off by the zoo's ethics committee (see section 14).
- 1.9.7** Prolonged separation of great apes from conspecifics must be avoided except where an individual's health or welfare is compromised, or for periods of time when introducing new animals, or for 'retired' male orangutans who are no longer required for breeding and may need to be kept solitary. Options for alternative suitable housing in non-breeding situations must be considered.
- 1.9.8** 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

1.9.9 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 (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) include vertical complexity

Where any of the above are not present, the licence holder must be able to justify why such measures are not in place and detail any substitution method of management.

1.9.10 Enclosures for great apes must have:

- a) three-dimensional indoor and outdoor spaces that allow arboreal behaviour
- b) dynamic multilevel structures that facilitate locomotion on top of, and hanging below, supports (for example, ropes, webbing, cargo nets, and branches)
- c) several vertical and horizontal climbing supports (ridged or flexible, for example, a rope attached at the top and bottom)
- d) Orangutans must also have provision for moving horizontally on flexible arboreal supports

The use of such enclosure furnishings must encourage musculoskeletal health.

1.9.11 Arboreal supports must vary in diameter, flexibility, connectedness, and orientation to reflect the functional complexity of forest canopy.

1.9.12 Incentives must be provided to encourage the use of all available vertical space (for example, resting places, enrichment devices and viewpoints).

1.9.13 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). Natural planting must be provided in outdoor enclosures to provide natural foraging opportunities, privacy, and shade.

1.9.14 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.

- 1.9.15** Opportunities and materials (including natural 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 various heights throughout the enclosure.
- 1.9.16** 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).
- 1.9.17** Enclosure design must allow for animal training goals (where appropriate) such as hand injection, auscultation, and conscious blood draw.

Environmental parameters

- 1.9.18** Great apes must be provided with the opportunity to experience a range of temperatures between 18 to 30°C daily. Prolonged enforced exposure to cold and hot temperatures must be avoided.
- 1.9.19** Humidity in indoor accommodation must be kept to a minimum of 50% for all species and monitored and recorded daily. Suitable ventilation must be provided.
- 1.9.20** 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. Consideration must also be given to UV light levels.

Feeding and nutrition

- 1.9.21** Great apes must be provided with diets similar in nutrient composition and processing complexity to that in the wild to meet the psychological and physical needs of the species. A substantial proportion of the animals' daily diet must include Neutral Detergent Fibre. Fruit must only be used in small quantities (including fruit fed for training).
- 1.9.22** 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.
- 1.9.23** Multiple feeds must be provided daily to allow extensive foraging and feeding. Opportunities to continue foraging and browsing after zoo closing hours must be provided (for example, end of day browse or forage provision).

1.9.24 The timing and provision of food must consider the group's dominance hierarchy to ensure all group members have the opportunity to access balanced diets. If this requires separation of individuals to give them time to eat separate diets or rations, the time they are separated must be kept to a minimum.

Public safety

1.9.25 Barriers must prevent escapes and direct contact with the public and must ensure the safety and wellbeing of both great apes and staff. Daily visual checks of barriers must take place and must be recorded, and evidence of routine detailed inspection must be available.

1.9.26 Stand-off areas must be designed to prevent close contact between great apes and public. Any potential of zoonotic disease transfer from public to great apes must be considered and mitigated against. Great apes' ability to use items such as sticks and branches to gain extra reach beyond their leg and arm length must be considered.

1.9.27 Gates must be robust, and any hydraulic or electric system must have manual back-up or an alternative power source. Hydraulic or electric gates must be capable of being operated remotely by staff outside animal reach and must be able to be opened and closed quickly with a stop facility to make sure that animals are not injured. The safe operation of any manual gates must be able to be demonstrated to inspectors, including safe systems of work.

1.9.28 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.

Written plans

1.9.29 The following written plans must be kept in accordance with the long-term management plan:

Welfare and behaviour monitoring plan (including management of social structure)

This must include behavioural, physical, physiological, or psychological measures of positive and negative welfare.

The licence holder must be able to demonstrate the steps they are taking to identify and eliminate the underlying causes of poor welfare and to promote positive welfare.

Husbandry plan

This must include an environmental enrichment plan which provides a net welfare benefit and considers all types of enrichment (see standard 4.5), using appropriate evaluation methods (for example, behavioural observations).

Husbandry and enrichment must offer great apes with choice and control over their environment.

Training plan

Training must be based on the principle of positive reinforcement (see section 9 for more details) and must ensure staff safety and promote good animal welfare.

All training must have a defined purpose related to veterinary and husbandry procedures. Efficacy of training must be evaluated against defined training aims and needs.

Programme of preventive and curative veterinary care and nutrition

For great apes, the programme must include preventative medical care, disease surveillance, body condition monitoring, faecal testing for pathogenic bacteria and parasites and, where applicable, geriatric care and management of chronic conditions. See standards 6.6 and 6.7 for further details on what the programme must cover.

Nutrition plan

This must include diet plans that tailor nutritional requirements to individual needs based on age, body condition, health status, and weight. 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.

These plans must be made available to zoo inspectors upon request, including evidence of their implementation.

Documentation required for inspection

This documentation must be available for inspection:

- long-term management plan (1.9.2)
- demonstration of evidence-based practice (1.9.3)
- written justification and ethical review process for group structure (1.9.6)
- humidity records (1.9.19)
- records of daily checks of enclosure barriers (1.9.25)
- safe systems of work (1.9.27)
- welfare and behaviour monitoring plans (1.9.29)
- husbandry plans (1.9.29)
- training plans (1.9.29)
- programme of preventive and curative veterinary care and nutrition (1.9.29)
- nutrition plans (1.9.29)

Appendix 2: Hazardous Animal Categorisation

This appendix provides a classification of animals based on their relative danger to members of the public in zoos and aquariums.

Zoo animals are categorised into 3 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 1 (greater risk)

- 1.1 Contact between the public and 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)

- 2.1 Contact between the public and 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.
- 2.2 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)

- 3.1 All animals not listed in 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.
- 3.2 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

The following information aims to help zoo inspectors, local authorities, and zoo operators to interpret the risk categorisations and the listings.

Using the list

1. 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.
2. 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.
3. This list does not take account of animal welfare.

Safety measures

4. 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.
5. It should also aid zoo licence holders and operators in carrying out risk assessments on barrier types from a public safety perspective.
6. 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.

Injuries caused by animals

7. 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.
8. 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

9. 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.

10. 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.
11. Birds defending eggs and hatchlings 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

12. 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).
13. 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. Because of their very small size, young of many hazardous invertebrate species require more stringent security than the larger adults.

Category 1 hazardous animals

14. Unless otherwise stated in the list below, the age, size, sex, or surgical or chemical sterilisation of a specimen of a category 1 listed species cannot be used to justify treating it as a lower category of risk, except with the prior approval of the licensing authority.
15. In any event, licence holders and operators are reminded to carry out risk assessments if treating any individuals differently from the category to which they are assigned in this list.

Hybrid animals

16. Hybrid animals must be placed in the same category as the more hazardous of the parent or grandparent species.
17. Any hybrid with great grandparents or higher listed as category 1 or 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

18. 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

19. 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.

Birds in risk category 2

20. In the case of bird species listed in category 2 (Less Risk), attention is drawn to the hazard of injury from beaks and talons, in particular in the case of birds which are tethered in mews, such as birds of prey.
21. Such birds must, when unsupervised, be separated by a non-touch barrier from members of the public.

Zoonotic infections

22. Attention is drawn to the hazard of all zoonotic infections, but with particular emphasis on the possible higher risks of humans contracting chlamydia infection from some birds, including parrots and related species. As well as salmonellosis and similar infections from some reptiles, including tortoises, if they are closely handled.
23. Zoo licence holders must have written zoonoses identification and mitigation protocols in place with documented evidence of training of relevant staff, which must include implementation and demonstration of specific surveillance programmes, where required.

Zoonotic diseases in primates

24. It is also stressed that primates are more closely related to humans and are therefore more likely to be carriers of zoonotic diseases.
25. The risk of serious disease being carried in this manner is greater in imported animals than in long-established groups. There is also the risk of primates acting as intermediaries in the transfer of disease from one human to another.
26. Evidence of consideration of zoonotic disease in operational policies regarding any primate walkthrough must be demonstrated to the licensing authority by the zoo.

Rabies

27. Attention is drawn to the possible risk of humans contracting rabies from many mammalian species, should the disease become indigenous. The risk from newly imported animals is controlled under quarantine regulations and is outside the scope of these provisions.

Assessing the risk

28. 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 1 and 2).
29. Any variation in classification and nomenclature may not be taken to imply that the categorisation of a species has changed.

30. The barrier for any taxa not listed in either category 1 or 2 must be determined by the zoo licence holder or operator based on risk assessments.

Categorisations and listings

Any species not listed is in risk category 3. Species have been broken into individual tables by their order.

In the listings below, the following abbreviations apply:

- Special Electric Risk (E)
- Special Kicking Risk (K)
- Special Pecking Risk (P)
- Special Venom Risk (V)

Mammals

Table 1: Monotremata

Family	Genus	Common Name	Risk category
Ornithorhynchidae	Ornithorhynchus	Platypus - males	2V
Didelphidae	Chironectes	Yapok or water opossum	2
Didelphidae	Didelphis	Large opossum	2
Didelphidae	Lutreolina	Thick-tailed opossum	2
Didelphidae	Metachirops	Philanders or four-eyed opossum	2
Didelphidae	Metachirus	Brown four-eyed opossum	2
Dasyuridae	Dasyurus	Quoll and native cat	2
Dasyuridae	Sarcophilus	Tasmanian devil	2
Phascolarctidae	Phascolarctos	Koala	2
Vombatidae	Lasiorhinus	Hairy-nosed wombat	2
Vombatidae	Vombatus	Common wombat	2
Phalangeridae	Trichosurus	Brush-tailed possum	2
Macropodidae	Macropus antilopinus	Antelope kangaroo	2K
Macropodidae	Macropus fuliginosus	Western grey kangaroo	2K
Macropodidae	Macropus giganteus	Great grey kangaroo	1K
Macropodidae	Macropus robustus	Wallaroo or euro	2K
Macropodidae	Macropus rufus	Red kangaroo	1K
Orycteropidae	Orycteropus	Aardvark	2

Table 2: Hyracoidea

Family	Genus	Common Name	Risk category
Procaviidae	Dendrohyrax	Tree hyrax	2
Procaviidae	Heterohyrax	Bush hyrax	2
Procaviidae	Procavia	Rock hyrax	2

Table 3: Proboscidea

Family	Genus	Common Name	Risk category
Elephantidae	Elephas	Asian elephant	1
Elephantidae	Loxodonta	African elephant	1

Table 4: Cingulata

Family	Genus	Common name	Risk category
Dasypodidae	Priodontes	Giant armadillo	2

Table 5: Pilosa

Family	Genus	Common name	Risk category
Bradypodidae	Bradypus	Three-toed sloth	2
Bradypodidae	Choloepus	Two-toed sloth	2
Myrmecophagidae	Myrmecophaga	Giant ant-eater	1
Myrmecophagidae	Tamandua	Tamandua	2

Table 6: Primates

Family	Genus	Common name	Risk category
Lorisidae	Nycticebus	Slow loris - all species	2
Lemuridae	Eulemur	Lemur	2
Lemuridae	Haplemur	Bamboo lemur	2
Lemuridae	Lemur	Lemur	2
Lemuridae	Prolemur	Greater bamboo lemur	2
Lemuridae	Varecia	Ruffed lemur	2
Lepilemuridae	Lepilemur	Weasel and sportive lemur	2
Indriidae	Avahi	Woolly indri	2
Indriidae	Indri	Indri	2
Indriidae	Propithecus	Sifaka	2
Daubentoniidae	Daubentonia	Aye-aye	2
Callitrichidae	Callimico	Goeldi's monkey	2
Callitrichidae	Callithrix	Marmoset (all species in the genus)	2

Family	Genus	Common name	Risk category
Callitrichidae	Cebuella	Pygmy marmoset	2
Callitrichidae	Leontopithecus	Lion-tamarin (all species in the genus)	2
Callitrichidae	Saguinus	Tamarin (all species in the genus)	2
Cebidae	Cebus	Capuchin monkey	1
Cebidae	Saimiri	Squirrel monkey	2
Aotidae	Aotus	Douroucouli	2
Pitheciidae	Cacajao	Uakari	2
Pitheciidae	Callicebus	Titis	2
Pitheciidae	Chiropotes	Bearded saki	2
Pitheciidae	Pithecia	Saki	2
Atelidae	Alouatta	Howler monkey	1
Atelidae	Ateles	Spider monkey	1
Atelidae	Brachyteles	Woolly spider monkey	1
Atelidae	Lagothrix	Woolly monkey	1
Cercopithecidae	Allenopithecus	Allen's monkey	1
Cercopithecidae	Cercocebus	Mangabey	1
Cercopithecidae	Cercopithecus	Guenons	1
Cercopithecidae	Chlorocebus	Vervet monkey	1
Cercopithecidae	Erythrocebus	Patas monkey	1
Cercopithecidae	Macaca	Macaque	1
Cercopithecidae	Mandrillus	Mandrill	1
Cercopithecidae	Miopithecus	Talapoin monkey	2
Cercopithecidae	Papio	Baboon	1
Cercopithecidae	Theropithecus	Gelada	1
Cercopithecidae	Colobus	Colobus monkey	1

Family	Genus	Common name	Risk category
Cercopithecidae	Nasalis	Proboscis monkey	1
Cercopithecidae	Presbytis	Surili	1
Cercopithecidae	Procolobus	Red and olive colobus monkey	1
Cercopithecidae	Pygathrix	Snub-nosed and douc monkey	1
Cercopithecidae	Semnopithecus	Langur and leaf monkey	1
Hylobatidae	Hoolock (bunopithecus)	Hoolock gibbon	1
Hylobatidae	Hylobates	Gibbon	1
Hylobatidae	Nomascus	Gibbon	1
Hylobatidae	Symphalangus	Siamang	1
Hominidae	Gorilla	Gorilla	1
Hominidae	Pan	Chimpanzee and bonobo	1
Hominidae	Pongo	Orangutan	1

Table 7: Erinaceomorpha (commonly included in Insectivora)

Family	Genus	Common name	Risk category
Erinaceidae	Echinosorex	Moonrat	2
Erinaceidae	Hylomys	Lesser moonrat	2
Erinaceidae	Neohylomys	Hainan moonrat	2
Erinaceidae	Podogymnura	Mindanao moonrat	2

Table 8: Sirocomorpha (commonly included in Insectivora)

Family	Genus	Common name	Risk category
Solenodontidae	Solenodon	Solenodon	2

Table 9: Chiroptera

Family	Genus	Common name	Risk category
Pteropodidae	Pteropus	Fruit bat	2
Phyllostomidae	Desmodus	Vampire bat (all species in genus)	1
Phyllostomidae	Diaemus	White-winged vampire bat	1
Phyllostomidae	Diphylla	Hairy-legged vampire bat	1

Table 10: Carnivora

Family	Genus	Common name	Risk category
Felidae	Acinonyx	Cheetah	1
Felidae	Caracal	Caracal	2
Felidae	Felis	Wild cat (non-domesticated)	2
Felidae	Herpailurus	Jaguarundi	2
Felidae	Leopardus	Ocelot and other wild cats	2
Felidae	Leptailurus	Serval	2
Felidae	Lynx	Lynxes	1
Felidae	Otocolobus (Felis)	Pallas's cat	2
Felidae	Profelis (Caracal)	African golden cat	2
Felidae	Prionailurus	Medium wild cats	2
iFelidae	Puma	Cougar	1
Felidae	Other felinae	Less common species not listed	2
Felidae	Neofelis	Clouded leopard	1
Felidae	Panthera	Lion, tiger, leopards and jaguar	1
Felidae	Uncia	Snow leopard	1
Viverridae	Arctictis	Binturong	2
Viverridae	Arctogalidia	Small-toothed palm civet	2
Viverridae	Macrogalidia	Sulawesi palm civet	2
Viverridae	Paguma	Masked palm civet	2
Viverridae	Paradoxurus	Palm civets	2

Family	Genus	Common name	Risk category
Viverridae	Chrotogale	Owston's palm civet	2
Viverridae	Cynogale	Otter civet	2
Viverridae	Diplogale	Hose's palm civet	2
Viverridae	Hemigalus	Banded palm civet	2
Viverridae	Prionodon	Asiatic linsang	2
Viverridae	Civettictis	African civet	2
Viverridae	Genetta	Genet	2
Viverridae	Poiana	Linsang	2
Viverridae	Viverra	Civets	2
Viverridae	Viverricula	Small Indian civet	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
Nandiniidae	Nandinia	African palm civet	2
Herpestidae	Atilax	Marsh mongoose	2
Herpestidae	Bdeogale	Mongoose	2
Herpestidae	Crossarchus	Kusimanse	2
Herpestidae	Cynictis	Yellow mongoose	2
Herpestidae	Dologale	Pousargue's 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
Herpestidae	Paracynictis	Selous's mongoose	2
Herpestidae	Rhynchogale	Meller's mongoose	2
Herpestidae	Suricata	Meerkat	2
Hyaenidae	Crocuta	Spotted hyaena	1
Hyaenidae	Hyaena	Hyaena	1
Hyaenidae	Proteles	Aardwolf	2
Canidae	Alopex	Arctic fox	2

Table 11: Canis (wild species only)

Family	Genus	Common name	Risk category
Canidae	C. Lupus	Wolf	1
Canidae	C. Species	Coyote and jackal	2
Canidae	Chrysocyon	Maned wolf	2
Canidae	Cuon	Dhole	1
Canidae	Dusicyon	South American fox	2
Canidae	Lycaon	Hunting dog	1
Canidae	Nyctereutes	Raccoon dog	2
Canidae	Speothos	Bush dog	2
Canidae	Vulpes	Common fox	2
Canidae	Otocyon	Bat-eared fox	2
Ursidae	Ailuropoda	Giant panda	1
Ursidae	Helarctos	Sun bear	1
Ursidae	Melursus	Sloth bear	1
Ursidae	Selenarctos	Asiatic black bear	1
Ursidae	Thalarctos	Polar bear	1
Ursidae	Tremarctos	Spectacled bear	1
Ursidae	Ursus	Brown and American black bear	1
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
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

Family	Genus	Common name	Risk category
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
Mustelidae	Aonyx	Small-clawed otter	2
Mustelidae	Arctonyx	Hog badger	2
Mustelidae	Conepatus	Hog-nosed and South American skunks	2
Mustelidae	Eira	Tayra	2
Mustelidae	Enhydra	Sea otter	1
Mustelidae	Galictis	Grison	2
Mustelidae	Gulo	Wolverine or glutton	1
Mustelidae	Ictonyx	Zorilla	2
Mustelidae	Lontra	North American river, southern river, neotropical and marine otter	1
Mustelidae	Lutrogale	Smooth-coated otter	1
Mustelidae	Lutra	Eurasian and hairy-nosed 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	Mephitis	Skunk	2
Mustelidae	Mustela	Mink, stoat and weasel	2
Mustelidae	Mydaus	Malay badger	2
Mustelidae	Poecilictis	Libyan weasel	2
Mustelidae	Poecilogale	White-naped weasel	2
Mustelidae	Pteronura	Giant otter	1
Mustelidae	Spilogale	Spotted skunk	2
Mustelidae	Taxidea	American badger	2
Mustelidae	Vormela	Marbled polecat	2

Family	Genus	Common name	Risk category
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
Ailuridae	Ailurus	Red panda	2

Table 12: 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	1
Rhinocerotidae	Dicerorhinus	Sumatran rhinoceros	1
Rhinocerotidae	Diceros	Black rhinoceros	1
Rhinocerotidae	Rhinoceros	Asiatic rhinoceros	1

Table 13: Artiodactyla

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	Chaco peccary	1
Tayassuidae	Tayassu	Peccary	1
Hippopotamidae	Choeropsis	Pygmy hippopotamus	1
Hippopotamidae	Hippopotamus	Hippopotamus	1
Camelidae	Camelus	Camel	1
Camelidae	L. Guanicoe	Guanaco	2
Camelidae	Vicugna	Vicuna	2

Family	Genus	Common name	Risk category
Cervidae	Alces	Moose and European elk	1
Cervidae	Blastocerus	Marsh deer	2
Cervidae	Capreolus	Roe deer - adult males	1
Cervidae	Capreolus	Roe deer - females and young	2
Cervidae	Cervus (larger species)	Red deer and wapiti	1
Cervidae	Cervus (other species)	Fallow deer and sika deer - adult males	1
Cervidae	Cervus (other species)	Fallow deer and sika 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	Guemal	2
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	Panolia	Brow-antlered deer - adult males	1
Cervidae	Panolia	Brow-antlered deer - females and young	2
Cervidae	Rangifer	Caribou and reindeer - adult males	1
Cervidae	Rangifer	Caribou and reindeer - female and young	1
Giraffidae	Giraffa	Giraffe	1
Giraffidae	Okapia	Okapi	2
Antilocapridae	Antilocapra	Pronghorn antelope	2
Bovidae	All	Any species, hand-reared male	1

Family	Genus	Common name	Risk category
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	1
Bovidae	Bos	Ankole, banteng, gaur, yak and kouprey (wild and larger exotic domesticated species)	1
Bovidae	Other	Others	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

Family	Genus	Common name	Risk category
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 vardonii	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
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	1
Bovidae	Taurotragus	Eland and giant eland	1
Bovidae	Tetracerus	Four-horned antelope	2
Bovidae	Tragelaphus	Nyala, bushbuck, sitatunga, kudu and bongo - adult males	1

Family	Genus	Common name	Risk category
Bovidae	Tragelaphus	Nyala, bushbuck, sitatunga, kudu and bongo - female and young	2

Table 14: Cetacea

Family	Genus	Common name	Risk category
Delphinidae	Feresa	Pygmy killer whale	1
Delphinidae	Globicephala	Pilot whales	1
Delphinidae	Grampus	Risso's dolphin	2
Delphinidae	Orcinus	Killer whale	1
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

Table 15: Rodentia

Family	Genus	Common name	Risk category
Sciuridae	Ratufa	Giant squirrel	2
Castoridae	Castor	Beaver	2
Hystricidae	Atherurus	Brush-tailed porcupine	2
Hystricidae	Hystrix	Crested porcupine	2
Hystricidae	Thecurus	Indonesian porcupine	2
Hystricidae	Trichys	Long-tailed porcupine	2
Erethizontidae	Chaetomys	Thin-spined porcupine	2
Erethizontidae	Coendou	Tree porcupine	2

Family	Genus	Common name	Risk category
Erethizontidae	Echinoprocta	Amazon porcupine	2
Erethizontidae	Erethizon	North American porcupine	2
Dinomyidae	Dinomys	Pacarana	2
Caviidae	Hydrochoerus	Capybara	2
Cuniculidae	Cuniculus	Paca	2
Myocastoridae	Myocastor	Coypu	2
Capromyidae	Capromys	Hutia	2
Capromyidae	Plagiodontia	Hispaniola hutia	2

Birds

Table 16: Struthioniformes

Family	Genus	Common name	Risk category
Struthionidae	Struthio	Ostrich	1K
Rheidae	Pterocnemia	Darwin's rhea	2K
Rheidae	Rhea	Common rhea	2K
Casuariidae	Casuaris	Cassowary	1K
Casuariidae	Dromaius	Emu	2K

Table 17: Galliformes

Family	Genus	Common name	Risk category
Phasianidae	Pavo spp.	Blue and green peafowl	2K

Table 18: Anseriformes

Family	Genus	Common name	Risk category
Anhimidae	All	Screamer	2
Anatidae	Branta	Geese, swan and duck	2
Anatidae	Plectopterus	Spurwinged goose	2

Table 19: Caprimulgiformes

Family	Genus	Common name	Risk category
Steatornithidae	Steatornis	Oilbird	2
Podargidae	All	Frogmouth	2
Caprimulgidae	All	Nightjar	2
Aegotheidae	Aegotheles	Owlet nightjar	2

Table 20: Otidiformes

Family	Genus	Common name	Risk category
Otididae	Ardeotis	Kori and large bustard	2
Otididae	Chlamydotis	Houbara bustard	2

Table 21: Gruiformes

Family	Genus	Common name	Risk category
Gruidae	Anthropoides	Blue and demoiselle crane	2P
Gruidae	Balearica	Crowned crane	2P
Gruidae	Grus	Crane	2P

Table 22: Charadriiformes

Family	Genus	Common name	Risk category
Stercorariidae	Stercorarius	Skua	2

Table 23: Sphenisciformes

Family	Genus	Common name	Risk category
Family	Spheniscidae	Penguin	2

Table 24: 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 25: 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	Large 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 26: 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	Sarcorhamphus	King vulture	2
Cathartidae	Vultur	Andean condor	1

Table 27: Accipitriformes

Family	Genus	Common name	Risk category
Sagittariidae	Sagittarius	Secretary bird	2
Pandionidae	Pandion	Osprey	2
Accipitridae	Chelictinia	Scissor-tailed kite	2
Accipitridae	Elanus	Kite	2
Accipitridae	Gampsonyx	Pearl kite	2
Accipitridae	Aviceda	Cuckoo falcon and lizard hawk	2

Family	Genus	Common name	Risk category
Accipitridae	Chondrohierax	Hook-billed kite	2
Accipitridae	Elanoides	Swallow-tailed kite	2
Accipitridae	Eutriorchis	Madagascar serpent eagle	2
Accipitridae	Hamirostra	Black-breasted buzzard	2
Accipitridae	Henicopernis	Long-tail and black honey buzzard	2
Accipitridae	Leptodon	Gray-headed kite	2
Accipitridae	Lophoictinia	Square-tailed kite	2
Accipitridae	Pernis	Honey buzzard	2
Accipitridae	Gypaetus	Bearded vulture	2
Accipitridae	Gypohierax	Palm-nut vulture	2
Accipitridae	Neophron	Egyptian vulture	2
Accipitridae	Polyboroides	African harrier hawk	2
Accipitridae	Circaetus	Snake eagle	2
Accipitridae	Dryotriorchis	Congo snake eagle	2
Accipitridae	Pithecophaga	Philippine eagle	1
Accipitridae	Spilornis	Serpent eagle	2
Accipitridae	Terathopius	Bateleur	2
Accipitridae	Aegyptius	European black vulture	2
Accipitridae	Gyps	Vulture and Griffon vulture	2
Accipitridae	Necrosyrtes	Hooded vulture	2
Accipitridae	Sarcogyps	Red-headed vulture	2
Accipitridae	Torgos	Lappet-faced vulture	2
Accipitridae	Trigonoceps	White-headed vulture	2
Accipitridae	Accipiter	Hawk, sparrow hawk and goshawk	2
Accipitridae	Aquila	Eagle	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	Circus	Harrier	2

Family	Genus	Common name	Risk category
Accipitridae	Erythrotriorchis	Red goshawk	2
Accipitridae	Geranoaetus	Black-chested buzzard-eagle	2
Accipitridae	Geranospiza	Crane hawk	2
Accipitridae	Haliaeetus	Bald, sea and fish eagle	2
Accipitridae	Haliastur	Brahminy and whistling kite	2
Accipitridae	Harpagus	Kites	2
Accipitridae	Harpia	Harpy eagle	1
Accipitridae	Harpyopsis	New guinea harpy eagle	1
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	Leucopternis	Hawk	2
Accipitridae	Lophaetus	Long-crested eagle	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	Parabuteo	Harris' hawk	2
Accipitridae	Polemaetus	Martial eagle	1
Accipitridae	Rostrhamus	Kite	2
Accipitridae	Spizaetus	Hawk-eagle	2
Accipitridae	Stephanoaetus	Crowned eagle	1
Accipitridae	Urotriorchis	African long-tailed hawk	2

Table 28: Strigiformes

Family	Genus	Common name	Risk category
Strigidae	Ninox	Boobok	2
Strigidae	Uroglaux	Papuan boobok	2
Strigidae	Aegolius	Whet-owl	2
Strigidae	Athene	Little and burrowing owl	2
Strigidae	Micrathene	Elf owl	2
Strigidae	Surnia	Hawk-owl	2
Strigidae	Asio	Short-eared 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	Nesasio	Fearful owl	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
Tytonidae	Phodilus	Bay owl	2
Tytonidae	Tyto	Barn owl	2

Table 29: Coraciiformes

Family	Genus	Common name	Risk category
Bucerotidae	Aceros	Hornbill	2
Bucerotidae	Anorrhinus	Bushy-crested hornbill	2
Bucerotidae	Anthracoseros	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

Family	Genus	Common name	Risk category
Bucerotidae	Rhinoplax	Helmeted hornbill	2
Bucerotidae	Tockus	Hornbill	2

Table 30: Falconiformes

Family	Genus	Common name	Risk category
Falconidae	Daptrius	Caracara	2P
Falconidae	Falco	Kestrel and falcon	2
Falconidae	Herpetotheres	Laughing falcon	2
Falconidae	Micrastur	Forest falcon	2
Falconidae	Microhierax	Falconet	2
Falconidae	Milvago	Milvago caracara	2P
Falconidae	Caracara	Caracara	2P
Falconidae	Phalcoboenus	Caracara	2P
Falconidae	Polyborus	Crested caracara	2P
Falconidae	Spiziapteryx	Spot-winged falconet	2

Table 31: 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

Family	Genus	Common name	Risk category
Psittacidae	Ara	Macaw	2
Psittacidae	Coracopsis	Vasa parrot	2
Psittacidae	Cyanopsitta	Little blue macaw	2
Psittacidae	Psittacus	African grey parrot	2

Table 32: Passeriformes

Family	Genus	Common name	Risk category
Corvidae	C. albicollis	African white-necked raven	2
Corvidae	C. corax	Raven	2
Corvidae	C. coronoides	Australian raven	2
Corvidae	C. crassirostris	Thick-billed raven	2
Corvidae	C. cryptoleucus	White-necked raven	2
Corvidae	C. mellori	South Australian raven	2
Corvidae	C. rhipidurus	Fan-tailed raven	2
Corvidae	C. ruficollis	Brown-necked raven	2

Reptiles

Table 33: Chelonia and testudinata

Family	Genus	Common name	Risk category
Chelidae	Batrachemys	Snake-necked Turtle	2
Chelidae	Eseya	Australian snapping turtle	2
Chelydriidae	Chelydra	Snapping turtle	1
Chelydriidae	Macroclemys	Alligator snapping turtle	1
Testudinidae	T. elephantopus	Galapagos giant tortoise	2
Testudinidae	T. gigantia	Aldabra giant tortoise	2
Testudinidae	T.spp.	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 turtle	2
Cheloniidae	Carettochelys	Pitted-shell turtle	2
Trionychidae	Chitra	River softshell turtle	2
Trionychidae	Cyclanorbis	Nubian and Senegal softshell turtle	2
Trionychidae	Cycloderma	Aubrey's and bridled softshell turtle	2
Trionychidae	Dogania	Softshell turtle	2
Trionychidae	Erymnochelys	Madagascan big-headed turtle	2
Trionychidae	Lissemys	Soft terrapin	2
Trionychidae	Nilssonina	Softshell turtle	2
Trionychidae	Pelochelys	Softshell turtle	2
Trionychidae	Podocnemis	Giant side neck turtle	2
Trionychidae	Trionyx	Softshell turtle	2

Table 34: Squamata

Family	Genus	Common name	Risk category
Helodermatidae	Heloderma	Gila monster and bearded lizard	1V
Varanidae	Varanus species	All specimens more than 0.6m snout to vent	1

Family	Genus	Common name	Risk category
Varanidae	Varanus species	All specimens less than 0.6m snout to vent	2
Teiidae	Tupinambinae	All specimens more than 0.6m snout to vent	1
Teiidae	Tupinambinae	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 35: Crocodylia

Family	Genus	Common name	Risk category
Crocodylidae	All	All specimens less than 0.6m snout to vent	1
Crocodylidae	All	All specimens more than 0.6m snout to vent	2

Amphibians

Table 36: 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
Amphiumidae	Salamandridae	True salamander and newt	2V

Table 37: Anura

Family	Genus	Common name	Risk category
Dendrobatidae	Dendrobatinae	Poison arrow frog (wild caught)	1V
Aromobatidae	Hyloxalus	Cryptic poison frog (wild caught)	1V
Bufonidae	Dendrophryniscus	True toad	2V

Fish

Table 38: Anguilliformes

Family	Genus	Common name	Risk category
Congridae	Conger	Conger eel	2
Muraenidae	All	Moray eel	2

Table 39: Esociformes

Family	Genus	Common name	Risk category
Esocidae	Esox	Pike	2

Table 40: Cypriniformes

Family	Genus	Common name	Risk category
Serrasalmodae	Serrasalmus spp.	Piranha	2
Serrasalmodae	Variety spp.	Pacu	2
Electrophoridae	Electrophorus	Electric eel	1E

Table 41: Siluriformes

Family	Genus	Common name	Risk category
Malapteruridae	Ictalurus	Electric cat fish	1E
Malapteruridae	Ariidae	Sea cat fish	2V

Table 42: Batrachoidiformes

Family	Genus	Common name	Risk category
Batrachoididae	Batrachoididae	Toad fish	1V

Table 43: Scorpaeniformes

Family	Genus	Common name	Risk category
Scorpaenidae	Pterois	Lion fish and scorpion fish	2V
Scorpaenidae	Synanceidae	Stone fish	2V

Table 44: Perciformes

Family	Genus	Common name	Risk category
Sphyraenidae	Sphyraena	Barracuda	2
Trachinidae	Trachinus	Weever fish	2V
Uranoscopidae	Astroscopus	Star-Gazer	1V
Siganidae	Siganus	Rabbit fish (teleost)	2V

Table 45: Tetraodontiformes

Family	Genus	Common name	Risk category
Balistidae	Melichthys	Trigger Fish (larger specimens only)	2

Table 46: Lamniformes

Family	Genus	Common name	Risk category
All	All sharks more than 1.5m	All sharks more than 1.5m	1
Alopiidae	Alopias	Thresher shark	1
Carcharhinidae	Carcharhinus amblyrhynchos	Grey reef shark	1
Carcharhinidae	Carcharhinus limbatus	Atlantic black tip shark	1
Carcharhinidae	Carcharhinus melanopterus	Black tip reef shark	1
Carcharhinidae	Carcharhinus plumbeus	Sand bar shark and brown shark	1
Carcharhinidae	Carcharias taurus	Sand tiger shark	1
Carcharhinidae	Galeocerdo cuvier	Tiger shark	1
Carcharhinidae	Negaprion brevirostris	Lemon shark	1
Carcharhinidae	Triacanthodon obesus	White tip reef shark	1
Hexanchidae	Hexanchus	Comb-toothed shark	1
Lamnidae	Lamna	Porbeagle	1
Odontaspidae	Carcharias	Sand shark	1
Orectolobidae	Ginglymostoma	Carpet shark and nurse shark	2
Squatinae	Squatina	Wobegong shark and angel shark	1
Sphyrnidae	Sphyrna	Hammerhead shark	1

Table 47: Chimaeriformes

Family	Genus	Common name	Risk category
Chimaeridae	Hydrolagus	Rat fish	2

Table 48: Lopiformes

Family	Genus	Common name	Risk category
Lophiidae	Lophius	Monkfish	2

Table 49: Myliobatiformes

Family	Genus	Common name	Risk category
Myliobatida	Aetobatus	Cownose, eagle and bat ray	2V
Potamotrygonidae	Potamotrygon Potamotrygonidae	Freshwater sting ray	2V
Torpedinidae	Torpedo	Electric ray	1E

Arthropods

Table 50: Araneae

Family	Genus	Common name	Risk category
Theridiidae	Latrodectus spp.	Black widow or redback spider	1V
Sicariidae	Loxosceles	Brown recluse or violin spider	1V
Sicariidae	Scicarius spp.	Sand spider	1V
Hexathelidae	Atrax	Australian funnel-web spider	1V
Ctenidae	Phoneutria spp.	Wandering spider	1V
Theraphosidae	Grammostola	New world bird-eating spider or tarantula	2
Theraphosidae	Pelinobius	Old world bird-eating spider or tarantula	2V

Table 51: 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 52: Thelyphonida

Family	Genus	Common name	Risk category
Thelyphonidae	Thelyphonida	Vinegaroon or whip scorpion	2

Table 53: Scolopendromorpha

Family	Genus	Common name	Risk category
Scolopendridae	Scolopendra spp	Giant centipede	2V

Table 54: Spirobolida

Family	Genus	Common name	Risk category
Pachybolidae	Aphistogoniulus coralipes	Malagasy fire millipede	2
Rhinocricidae	Adenobolus monilicornis	Bumblebee millipede	2

Table 55: Spirostreptida

Family	Genus	Common name	Risk category
Spirostreptidae	Archispirostreptus spp.	Giant African millipede	2
Spirostreptidae	Ophistreptus spp.	Giant African millipede	2
Spirostreptidae	Spirostreptus spp.	Giant African millipede	2
Spirostreptidae	Telodeinopus spp.	Giant African millipede	2

Table 56: Phasmida

Family	Genus	Common name	Risk category
Pseudophasmatidae	Anisomorpha spp.	Walking stick insect	2
Pseudophasmatidae	Neophasma spp.	Walking stick insect	2
Pseudophasmatidae	Peruphasma spp.	Walking stick insect	2
Pseudophasmatidae	Pseudophasma spp.	Walking stick insect	2

Family	Genus	Common name	Risk category
Phasmatidae	Eurycantha calcarata	Spiny stick insect - mature males	2

Table 57: Hemiptera

Family	Genus	Common name	Risk category
Belostomatidae	Abedus spp.	Water bug	2
Belostomatidae	Belostoma spp.	Water bug	2
Belostomatidae	Lethocercus spp.	Water bug	2
Belostomatidae	Family reduviidae	Assassin bug	2

Table 58: Stomatopoda

Family	Genus	Common name	Risk category
Odontodactylidae	Squilla	Mantis shrimp	2

Table 59: Decapoda

Family	Genus	Common name	Risk category
Nephropidae	Homarus	Lobster (large specimens)	2
Coenobitiae	Cancer	Robber crab	2

Table 60: Echinodermata

Family	Genus	Common name	Risk category
Diadematidae	Diadema	Long-spined sea urchin	2

Table 61: Mollusca

Family	Genus	Common name	Risk category
Octopodidae	Enteroctopus spp.	Giant octopus	1V
Octopodidae	Hapalochlaena	Blue-ringed octopus	1V

Family	Genus	Common name	Risk category
Octopodidae	Octopus vulgaris	Common octopus	2V
Sepiidae	Sepia officinalis	Common cuttlefish	2V
Sepiidae	Metasepia pfefferi	Flamboyant cuttlefish	1V
Sepiidae	Sepia bandensis	Dwarf cuttlefish	1V
Sepiidae	Metasepia pfefferi	Flamboyant cuttlefish	1V
Sepiidae	Sepia bandensis	Dwarf cuttlefish	1V
Sepiidae	Sepia officinalis	Common cuttlefish	2V

Table 62: Gasteropoda

Family	Genus	Common name	Risk category
Conidae	Conus	Cone shell (some species)	1V

Table 63: Anthoathecatae

Family	Genus	Common name	Risk category
Milleporidae	Millepora spp.	Fire coral	2

Table 64: Zoantharia

Family	Genus	Common name	Risk category
Zoanthids	Zoanthus	Palytoxin producing zoanthids	1

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