**European Professional Zookeeper Qualification Framework (EPZQF)**

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This document version of the framework was created on 18 October 2018. The EPZQF is a living document, written collaboratively over time and subject to change. The most up to date version of the framework can always be found online at [zookeepers.eu](https://www.zookeepers.eu/).

**Area 1: Transversal skills**

Transversal knowledge, skills and competencies are relevant to a broad range of occupations and sectors. They are often referred to as core skills, soft skills and the cornerstones for the professional development of a person. Upgrading the transversal skills of zoo staff will enable them to be adaptable and flexible in current and future roles, to manage themselves suitably and to be able to work professionally with other people, representing both themselves and their organisation appropriately. Within this area there are four topics:

* [**1.1 Self-Management**](https://www.zookeepers.eu/framework/area-1-transversal-skills/1-1-self-management/)
* [**1.2 Working with Others**](https://www.zookeepers.eu/framework/area-1-transversal-skills/1-2-working-with-others/)
* [**1.3 Management**](https://www.zookeepers.eu/framework/area-1-transversal-skills/1-3-management/)
* [**1.4 Communication Skills**](https://www.zookeepers.eu/framework/area-1-transversal-skills/1-4-communication-skills/)

**1.1 Self-Management**

In order to work as effective employees and uphold the professional reputation of the sector it is important that zookeepers are able to manage themselves and their resources (in particular, skills, knowledge and time) effectively. In particular, they should develop competencies in the following areas:

* Time Management: zookeepers can manage their own time effectively, following and devising schedules that are efficient and lead to better productivity.
* Professional Development: zookeepers understand personal career motivations and develop appropriate strategies to develop the skills, competencies and experience for career development.
* Professional Conduct: zookeepers understand the importance of and demonstrate appropriate appearance and behaviours in different work situations.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **1.1.1 Time Management** | **Describe** why it is important to organise time effectively**Follow** the routines for their section, that meet the needs of the animals in their care and colleagues**Demonstrate** effective use of time**Describe** which activities might require them to deviate from planned routines | **Prioritise**and**identify** more critical and less critical activities and tasks**Identify**and**describe**possible improvements to how own time is used**Create**appropriate daily schedules that prioritise the most important tasks | **Create** appropriate weekly or monthly schedules, making sure that high-priority work is accomplished within required timelines**Coordinate** own and others’ schedules to avoid conflicts |
| **1.1.2 Professional Development** | **Describe** any gaps between the requirements of own work role and own current knowledge, understanding and skills**Seek** feedback from a range of sources (peers, managers, colleagues) on personal performance and **use** it to identify improvements**Discuss** and agree on a personal development plan with their line manager (as appropriate) | **Demonstrate** a proactive approach to personal development through engagement with relevant networks**Describe** where up-to-date information relevant to their work can be found | **Contribute** to the professional development of others through sharing of knowledge and skills |
| **1.1.3 Professional Conduct** | **Describe** why wearing appropriate dress, such as a uniform, is important for upholding the professional image of the zoo**Dress** appropriately for daily work situations following relevant organisational guidelines**Demonstrate** appropriate workplace behaviours, including respect for others and politeness**Name** and **comply with** the policies, practices and values from their organisation that guide staff conduct | **Dress** appropriately for a range of working situations**Explain** why it is important to behave appropriately in professional situations**Explain** how the policies and values of their institution are relevant to their working practice | **Explain** how they contribute to a professional working environment within their team and within the wider organisation |

**Resources**

* Organisation Vision and Values statement
* Management Standards – [**MSC Management Standards Centre**](http://www.management-standards.org/)
* Organisation level policies on appearance, uniform standards and similar
* Organisation level policies relevant to behaviour

**Paths to fulfilment**

* Zookeepers working at level 1 – UK NVQ/SVQ level 2 Management
* Zookeepers working at level 2 – UK NVQ/SVQ level 3 Management
* Zookeepers working at level 3 – UK NVQ/SVQ level 4 Management

**1.2 Working with Others**

Like most employees, zookeepers work as part of teams and alongside teams of people from a variety of different disciplines. Furthermore, through their breeding programmes, co-operation on European standards and under a variety of directives, zoos are part of a wider community and zookeepers need to be able to collaborate effectively in this context. In particular, they should develop competencies in the following areas:

* Professional Networks: zookeepers identify and develop networks appropriate to their role and know how to develop and contribute to networks at an organisational, national and European levels.
* Working Relationships: zookeepers develop working relationships with colleagues that are productive in terms of supporting and delivering their work and that of their organisation.
* Communicating with Others: zookeepers understand their role within a team and how they can influence others.

See also 1.4 Communication Skills for specific skills relating to giving of presentations, language and using technology.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **1.2.1 Professional Networks** | **Participate** in professional networks at an institutional level (e.g. by attending and contributing to meetings relevant to their work) | **Identify** key stakeholders for their area of work, including departments and individuals within their organisation, regional, national and international associations as appropriate**Contribute** to regional and national professional networks | **Explain** how they identify and network with key stakeholders**Create** opportunities for networking, through organising meetings and/or proactively being involved in committees and working groups |
| **1.2.2 Working Relationships** | **Establish** working relationships with all colleagues who are relevant to the work being carried out**Understand** difficult situations and issues from their colleague’s perspective and provide support, where necessary, to move things forward**Exchange** information and resources with colleagues to make sure that all parties can work effectively | **Describe** how to select and successfully apply different methods for communicating with people across their area of responsibility | **Describe** the benefits of developing productive working relationships with colleagues and stakeholders**Explain** the principles of effective communication and how to apply them to communicate effectively with colleagues and stakeholders**Demonstrate** that they can identify and meet the information needs of colleagues and stakeholders, including what information is appropriate to provide to colleagues and stakeholders and the factors that need to be taken into consideration**Demonstrate** that they can take account of diversity and inclusion issues when developing working relationships with colleagues and stakeholders |
| **1.2.3 Communicating with Others** | **Explain** how they influence others within their own team**Present** information clearly, concisely, accurately and in ways that promote understanding – verbally as well as in writing | **Respond** to feedback about their communication with others and **describe** how they have adapted their communication style to meet the needs of others | **Demonstrate** how to get and make effective use of feedback on the effectiveness of working relationships from colleagues and stakeholders**Demonstrate** how they manage the expectations of colleagues and stakeholders |

**Resources**

* Management Standards – [**MSC Management Standards Centre**](http://www.management-standards.org/)

**Paths to fulfilment**

* Zookeepers working at level 1 – UK NVQ/SVQ level 2 Management
* Zookeepers working at level 2 – UK NVQ/SVQ level 3 Management
* Zookeepers working at level 3 – UK NVQ/SVQ level 4 Management

**1.3 Management**

As zookeepers progress through their careers they may be required to recruit and then manage small teams. It is essential for the effective operation of their organisations that they do this effectively and that they can make the most of their team’s performance. In particular, they should develop competencies in the following areas:

* Recruitment: zookeepers recruit, select and keep colleagues to support the performance of their organisation (level 2 and 3 only).
* Team Management: zookeepers manage the performance of a small team of people.
* Setting and Achieving Objectives: zookeepers understand how their work fits within their organisation’s plan and develop appropriate objectives to meet strategic goals (including mission and masterplan).

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **1.3.1 Recruitment** | n/a | **Participate** in the recruitment and selection process, as agreed, making sure that the process is fair, consistent and effective (e.g. by giving input for job descriptions or person specifications, reviewing applications, providing feedback on applicants at assessments, etc.)**Deliver** appropriate, pre-developed induction and support programmes for new colleagues**Demonstrate** awareness of their institution’s HR legislation and/or recruitment policies | **Review**, on a regular basis, the work required in their area of responsibility, identifying any shortfall in the number of colleagues and/or the pool of skills knowledge, understanding and experience**Consult** with others to discuss and agree stages in the recruitment and selection process for identified vacancies, the methods that will be used, the associated timings and who is going to be involved**Make sure** that applicants who are offered positions are likely to be able to perform effectively and work with their new colleagues**Evaluate** the success of any recent recruitments**Plan** and **develop** appropriate induction and support programmes for new colleagues |
| **1.3.2 Team Management** | **Describe** the different roles within their team and the contribution they make to the team, also differentiating between, staff, students and volunteers as members of the team | **Explain** how to select and successfully apply different methods for encouraging, motivating and supporting people and recognising achievement**Explain** why it is important that individuals and/or teams are briefed on allocated work and the standard or level of expected performance and how to do so effectively**Describe** how they monitor team performance, how they provide prompt and constructive feedback to individuals and/or teams and the actions they would take to manage underperformance | **Demonstrate** that they constantly seek to improve team performance and **reflect**regularly on their own and others’ experiences, and **use**these to inform future action**Explain** different leadership styles and when they are most effective |
| **1.3.3 Setting and Achieving Objectives** | **Describe** the vision and values of the organisation**Collaborate** with more senior staff to set personal objectives and/or objectives for the team | **Understand** how to identify and take due account of health and safety plus equality of opportunity in the planning, allocation and monitoring of work**Describe** how to produce a plan of work for their area of responsibility, including how to identify any priorities or critical activities and the available resources**Explain** how to set objectives within their area of responsibility and how to communicate that to their team | **Describe** Describe the principles and methods of short to medium term planning**Demonstrate** the development of SMART (Specific, Measurable, Assignable, Realistic and Time-Related) objectives and how they have been assigned**Describe** how to plan for and manage risks**Contribute** appropriately, when asked, to the development of organisational plans |

**Resources**

* Organisation Vision and Values statement
* Management Standards – [**MSC Management Standards Centre**](http://www.management-standards.org/)

**Paths to fulfilment**

* Zookeepers working at level 1 – UK NVQ/SVQ level 2 Management
* Zookeepers working at level 2 – UK NVQ/SVQ level 3 Management
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**1.4 Communication Skills**

Zookeepers are required to communicate with a wide range of stakeholders and audiences in order to promote their work, that of their organisations and of the zoo sector more broadly. In order to do this, they need to be confident public speakers and be able to use relevant technologies to communicate in a variety of situations. In addition, due to the international nature of zoo work and in many cases the presence of international tourists within their audience base, zookeepers should be able to communicate in the English language. Specifically, zookeepers need to develop communication skills in the following areas:

* Presentation and Public Speaking: zookeepers present their ideas effectively to internal and external audiences.
* Language Proficiency: zookeepers can communicate effectively with their colleagues, converse with international colleagues, understand sector publications.
* Using Technology: zookeepers can use a variety of communications technologies suitable for written and verbal communication.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **1.4.1 Presentation and Public Speaking** | **Present** a small number of simple ideas and opinions in written and verbal formats in a way that is understood and received by those they communicate with**Adapt** their communication style to their audience**Take part** in exchanges of information and ideas with colleagues and members of the public | **Sequence** and **link** information and ideas appropriately to create short talks for peer or public groups**Collate** visual aids and/or props to support a verbal presentation appropriate to the audience | **Present** complex information to a variety of different audiences**Explain** the importance of non-verbal communication and **demonstrate** how body language and other forms can influence how communication is received |
| **1.4.2 Language Proficiency** | **Communicate** easily in the working language of their institution using a wide range of professional vocabulary in a variety of situations, including:– Describing their work to visitors– Talking at team or institution wide meetings and events– Answering emails– Talking on the telephone/radio([**CEFR Level B2**](https://www.coe.int/en/web/common-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale)) | **Convey** simple concepts in English, such as:– Answering visitor questions– Informal conversations with professional international visitors**Read** and **demonstrate comprehension** of simple texts, such as emails from international colleagues, husbandry guidelines and recommendations([**CEFR Level A2**](https://www.coe.int/en/web/common-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale)) | **Communicate** easily in English using a wide range of professional vocabulary in a variety of situations, including:– Describing their work to visitors– Giving presentations at conferences/seminars– Answering emails– Talking on the telephone**Read** and **demonstrate comprehension** of academic and sector publications in English([**CEFR Level B2**](https://www.coe.int/en/web/common-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale)) |
| **1.4.3 Using Technology** | **Use** computers to create simple written reports and send and respond to emails, using standard software packages**Retrieve** information from prescribed databases or Internet platforms using simple searches | Competently**use** the technologies provided by their institution for the delivery of talks – this may include microphones, audio visual equipment and slide decks/slide-producing software**Use** a range of ICT systems relevant to zookeeping, such as ZIMS, SPARKS, PMX, following instruction to retrieve data or update information**Identify** and **follow** procedures designed to keep data secure | **Use** a wide range of communication technologies for presentations, including creating slideshow presentations and setting up AV equipment**Evaluate** which communication technologies are best for particular tasks and environments**Develop** their own systems and processes for storing and conveying information to colleagues**Explain** why certain data should be kept securely and how to achieve this using technology |

**Resources**

* Communication Core Skills – [**SQA**](http://www.sqa.org.uk/files_ccc/CommunicationCoreSkillsFrameworkV1.pdf)
* Information and Communication Technology Core Skills – [**SQA**](http://www.sqa.org.uk/files_ccc/ICTCoreSkillsFrameworkV1.pdf)

**Area 2: Animal management**

Animal management knowledge, skills and competencies are a core part of the zookeeper role. Although the zookeeper role extends beyond simple animal management, this is the set of skills and competencies that are most frequently associated with the role. It is essential for zookeepers to demonstrate competence in a range of areas when managing the taxa they are assigned to work with. Within this area there are nine topics:

* [**2.1 Taxon-Specific Knowledge**](https://www.zookeepers.eu/framework/area-2-animal-management/2-1-taxon-specific-knowledge/)
* [**2.2 Animal Behaviour**](https://www.zookeepers.eu/framework/area-2-animal-management/2-2-animal-behaviour/)
* [**2.3 Reproduction**](https://www.zookeepers.eu/framework/area-2-animal-management/2-3-reproduction/)
* [**2.4 Feeding**](https://www.zookeepers.eu/framework/area-2-animal-management/2-4-feeding/)
* [**2.5 Nutrition**](https://www.zookeepers.eu/framework/area-2-animal-management/2-5-nutrition/)
* [**2.6 Handling and Transport**](https://www.zookeepers.eu/framework/area-2-animal-management/2-6-handling-and-transport/)
* [**2.7 Training**](https://www.zookeepers.eu/framework/area-2-animal-management/2-7-training/)
* [**2.8 Record Keeping**](https://www.zookeepers.eu/framework/area-2-animal-management/2-8-record-keeping/)
* [**2.9 Animal Health**](https://www.zookeepers.eu/framework/area-2-animal-management/2-9-animal-health/)
* [**2.10 Animal Welfare**](https://www.zookeepers.eu/framework/area-2-animal-management/2-10-animal-welfare/)

**2.1 Taxon-Specific Knowledge**

The subject focuses on the knowledge of taxonomy and binominal nomenclature of specific taxa, to gain information from reliable resources, to gain skills in taxon-specific research and to be able to apply research to ensure appropriate husbandry and management. The specific knowledge will also be useful to educate visitors. Gaining this knowledge will invoke, on a certain level, on the intrinsic motivation of the zookeeper to educate himself to the level needed.

* Systematics and Taxonomy: zookeepers know about the classification and nomenclature of the animal kingdom.
* Characteristics of the Animal Kingdom: zookeepers can distinguish and recall several characteristics of groups and subgroups of the animals kept in zoos.
* Evolution vs. Domestication: zookeepers know about the origin of species through (micro-)evolution and the origin of domesticated breeds as a result of selective breeding.
* Hybridisation and Kinship: zookeepers understand the impoprtance of preventing hybridisation of related taxa.
* Ecology: zookeepers have knowledge of the ecological niches of the taxa they are working with and can respond to the needs of the animal (biotical and abiotical factors, housing, feeding, appropriate care).

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **2.1.1 Systematics and Taxonomy** | **State** the classification of animals within a taxonomic system**Describe** the concept of scientific nomenclature**List** the common names and scientific names of species they work with most frequently | **Describe** the classification of taxa within the animal kingdom**Compile** information from reliable sources using scientific nomenclature of taxa | **Analyse** new and revised information about systematics of taxa and **implement** this knowledge within their own department |
| **2.1.2 Characteristics of the Animal Kingdom** | **Name** groups and subgroups of animals kept in zoos | **Educate** visitors and colleagues about the characteristics of and differences between groups of animals using existing materials (see 4.3.3) | **Develop** educational resources like zookeeper talks or demonstrations regarding characteristics of the groups of animals and specific characteristics of animal species (see 4.3.3) |
| **2.1.3 Evolution vs. Domestication** | **State** the differences in the origin of wild species of animals and domesticated breeds of animals**Explain** the differences of evolution vs. domestication to visitors | **Describe** the ways that zoos play a significant role in *ex situ*population management of wild species, not their domesticated counterparts (incl. mutations, such as white tigers) | **Analyse** if a specimen belongs to an original (wild) species or a domesticated breed and **evaluate** its importance to biodiversity and conservation |
| **2.1.4 Hybridisation and Kinship** | **Define** the concepts of kinship and hybridisation within the (*ex situ*) population | **Describe** what information kinship provides about genetic adaptations within related families, clades, orders and genera in the animal kingdom**Discuss** the consequences of hybridisation | **Identify** which (sub)species a specimen belongs to, using morphology and other resources (e.g. genetic information from ZIMS) |
| **2.1.5 Ecology** | **Describe** and **give examples** of the ecological niche of the species under their care and **recognise**the adaptions of the species to ecosystems | **Describe** the surrounding environments for the species under their care and **discuss** if they suit the ecological needs of the species | **Coordinate** and **evaluate** suitable surrounding environments for the species under their care and **evaluate** how it is adapted to its ecological requirements and **assess** its effectiveness in meeting the species’ ecological needs |

**Resources**

* L.A. Urry et al., *Campbell Biology,* 11th edition, 2016
* C.P. Hickman Jr et al., *Integrated Principles of Zoology*, 16th edition, 2014
* OneZoom Life Explorer – [**OneZoom**](http://www.onezoom.org/)

**Paths to fulfilment**

* Distributed European School of Taxonomy – [**Taxonomy Training**](http://taxonomytraining.eu/)
* Wildlife conservation and ecology courses – [**Animal Biology and Care Education**](https://www.animalbiologyandcare.co.uk/)
* Vertebrate zoology course – [**ACS Distance Education**](https://www.acsedu.co.uk/Courses/Environmental/VERTEBRATE-ZOOLOGY-BEN104-528.aspx)

**2.2 Animal Behaviour**

Animals kept in EAZA collections should be encouraged to perform as much of their natural behavioural repertoire as possible. Whenever possible, unnatural and/or abnormal behaviours that are detrimental to the welfare or dignity of the animals should be prevented or actively discouraged. Important elements in behavioural management are enclosure design, environmental and behavioural enrichment, and feeding regimes.

* Behaviour Basics: zookeepers know about the basics of behaviour, stimuli of behaviour and the response to it. Zookeepers can distinguish between classical and critical anthropomorphism and are able to develop objective observations.
* Innate and Learned Behaviour: zookeepers know about innate behaviour, such as reflexes and instinctive behaviour patterns (social, territorial behaviour, communication) and cyclic behaviour such as hibernation and migration. Zookeeper know about the animal’s imprinting phase, ability to learn through trial and error, conditioning and insight.
* Observing and Data Sampling: zookeepers can observe the animal’s behaviour objectively, using data sampling (ad-libitum, all occurrences, scan data, focal animal data sampling, one/zero data sampling).
* Unnatural and Abnormal Behaviour: zookeepers can understand what abnormal behaviour is and can identify and understand natural, normal, unnatural and abnormal behaviours.
* Behavioural Enrichment: zookeepers know about the benefits of behaviour enrichment and can use this in favour of the animal’s welfare.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **2.2.1 Behaviour Basics** | **Describe** the most important stimuli and responses of the animal, and avoid anthropomorphism | **Describe** stimuli and behavioural responses and repertoire (excluding anthropomorphism) to guests and colleagues | **Interpret** behaviour and **discuss** how the enclosure design can impact on behaviour |
| **2.2.2 Innate and Learned Behaviour** | **Distinguish** whether behaviour is innate or learned to the species | **Interpret** the (innate or learned) behaviour and **discuss** how this relates to the animal’s needs and **report** to the supervisor | **Evaluate** the observed behaviour and **devise** an appropriate husbandry and/or training programme to extend behaviour and welfare |
| **2.2.3 Observing and Data Sampling** | **Identify** individual animals in a group and **observe** the animal’s behaviour**Report** observations to their supervisor or other appropriate staff | **Interpret** the observed behaviour and **report** this interpretation to the supervisor | **Modify** the environment to the needs of the animal and **monitor** the effectiveness of the modifications**Anticipate** in response to the observed behaviour |
| **2.2.4 Unnatural and Abnormal Behaviour** | **Classify** abnormal behaviour of the animal and **report** this to a supervisor in their team | **Interpret** abnormal behaviour and **respond** to it in consultation of a supervisor | **Analyse** abnormal behaviour and **plan** structural adjustments to the environment and daily care, to reform the behaviour**Monitor** the effectiveness of these adjustments |
| **2.2.5 Behavioural Enrichment** | **Prepare** and **produce** enrichment items from an approved list for nominated species/enclosure | **Develop** and **implement** appropriate enrichment items in accordance with enclosure design and species-specific needs | **Create** a species- and enclosure-specific enrichment plan**Monitor** and **evaluate** the effectiveness of the designed enrichment elements and plans, and **make adjustments** as needed |

**Resources**

* L.A. Urry et. al., *Campbell Biology,* 11th edition, 2016
* EAZA Standards for the Accommodation and Care of Animals in Zoos and Aquaria – [**EAZA**](http://www.eaza.net/assets/Uploads/Standards-and-policies/Standards-for-the-Accommodation-and-Care-of-Animals-2014.pdf)
* EU Zoos Directive Good Practices Document (chapter 2.4) –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)
* Association for the Study of Animal Behaviour – [**ASAB**](http://www.asab.org/)
* Animal Behaviour & Ethology group – [**Facebook group**](https://www.facebook.com/groups/animbeh)
* Student Environmental Enrichment Course – [**Facebook page**](https://www.facebook.com/pg/StudentEnvironmetalEnrichmentCourse)
* IAATE Monthly Enrichment Challenge – [**Facebook page**](https://www.facebook.com/IAATEMonthlyEnrichmentChallenge)
* Enrichment Challenges Archives – [**Facebook group**](https://www.facebook.com/groups/144483179063468)
* Zoo Enrichment – [**Facebook page**](https://www.facebook.com/zooenrichment)

**Paths to fulfilment**

* Association for the Study of Animal Behaviour, education and courses – [**ASAB**](http://www.asab.org/education)
* EAZA Animal Training course: Understanding and Managing Animal Behaviour – [**EAZA**](http://www.eaza.net/academy/courses)

**2.3 Reproduction**

The process by which animals reproduce is both varied and sometimes individually complicated and so requires a good zookeeper to be very well informed. In addition, discoveries that change the management of breeding process are frequent and important to recognise and apply. Zookeepers need to utilise knowledge and experience to manage and improve conservation breeding work in line with recommendations from Breeding programmes whilst ensuring that ethical and welfare needs are not compromised. It is expected that records will be consistent with EAZA Best Practice Guidelines where they have been developed.

This topic links to 4.2.5 Conservation: Breeding Programmes

* The Biology of Reproduction:  zookeepers can demonstrate understanding of the biological principles of reproduction in a range of species.
* Selection of Stock for Breeding Programmes: zookeepers can participate in and evaluate a breeding programme.
* Care of Breeding Animals and Young: zookeepers can provide suitable and appropriate care for breeding and neonate animals.
* Population Management: zookeepers can explain the principles that underpin population management in nominated species.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **2.3.1 The Biology of Reproduction** | **Describe** the structure and function of a range of taxa’s reproductive anatomy, physiology and the biological systems involved**Identify** the sex of an individual in species they work with where sex determination is possible using visual indicators**Calculate** gestation/incubation periods accurately and provide suitable data for the practical management of breeding animals | **Describe** how to determine the sex of an individual in species they work with where sex determination is only possible using other indicators (e.g. internal examination, DNA) | **Discuss** current research and understanding of the biology of species linking this with practical care considerations |
| **2.3.2 Selection of Stock for Breeding Programmes** | **State** the factors to consider when choosing stock to breed and also not breed and assist in ensuring formal recommendations are carried out | **Advise** on suitability of individual animals and plan for introductions and practical set up for successful breeding programmes | **Assist** with co-ordinating stud books and the breeding recommendations for a single species population.**Conduct checks** on processes of selection and implementation of the programme recommendations |
| **2.3.3 Care of Breeding Animals and Young** | n/a | **Provide** experienced advice and describe alterations/modification to husbandry of animals in breeding programmes to meet changing circumstances.**Provide** correct care and husbandry of breeding animals, pregnant/gravid/incubating animals, during parturition, after birth and neonates (including potential need for hand rearing) | **Coordinate** suitable systems of care within a breeding programme and guide team members to evaluate such a programme through effective use of information gathered |
| **2.3.4 Population Management** | **Assist** in ensuring that the population of species in a collection is managed to achieve either breeding or non-breeding status in tandem with ethical and welfare considerations (under supervision) | **Describe** which population controls (e.g. same gender groups, breed and cull, and contraception) are available and monitor their effectiveness, suggesting improvements as necessary | **Liaise** with other agents such as programme co-ordinators veterinary staff, to jointly construct clear guidelines for contraception and population management in collections and within other regional Associations |

**Resources**

* Husbandry Guidelines for relevant species
* TAG and EEP reports
* EAZA Group on Zoo Animal Contraception – [**EGZAC**](http://www.egzac.org/)

**Paths to fulfilment**

* DMZAA Unit 6: Conservation Breeding – [**Sparsholt College**](https://ledge.sparsholt.ac.uk/course/view.php?id=628)
* EAZA Academy courses on Population Management and Studbooks – [**EAZA**](http://www.eaza.net/academy/courses)

**2.4 Feeding**

Animal feeding is an important husbandry for both zookeepers and animals. Providing the correct type and amount of feed is an essential part of meeting animal welfare standards under the European Zoos Directive (EC Directive 199/22/EC).  Provision of food and water is one of the designated five freedoms as set out by the farm Animal Welfare Council and also incorporated into the Secretary of States Standards for Modern Zoo Practice within the UK.

Both food and water are basic needs. The method of food presentation, the frequency of feeds and the nutritional balance must be taken into account. Food should be presented in a manner and frequency commensurate with the natural behaviour of the species, as well as its nutritional requirements, which may vary according to season. Zookeepers will have skills and knowledge in feed recognition, preparation and presentation so that animals in their care are fed in line with best practice and at appropriate time intervals and frequencies.

* Feed Recognition: zookeepers can identify and describe a range of feeds commonly used in zoos.
* Feed Preparation: zookeepers are able to demonstrate safe and effective feed preparation.
* Feed Presentation: zookeepers can describe and demonstrate how feed is given to animals and how it can affect selection.
* Feed Utilisation: zookeepers are able to monitor how the diet in captivity is accepted by animals and the impact diet has on faecal consistency.
* Waste Food Disposal: zookeepers are able to demonstrate effective methods of waste feed disposal in a sustainable way.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **2.4.1 Feed Recognition** | **Identify** feeding items of suitable quality from different groups on a diet sheet and for each item **list** the animals that they are suitable for feeding to | **Describe** what the feeding quality and general composition of nutrients of a range of feeds is and **discuss** the impact of feeding each feed to a nominated species | **Recommend** feedstuff substitutions and alternatives where problems of supply occur so that the overall balance and nutrient supply of the diet is unaffected |
| **2.4.2 Feed Preparation** | **Select** and **weigh** appropriate dietary ingredients to make a daily diet for a nominated species under supervision and according to recognised safety procedures and approved but simple diet sheets | **Prepare** daily diets from more complex diet sheets with precision in accordance with safety procedures and **describe** how variation in diets can occur due to seasonality and availability and how this can be accommodated | **Discuss** how and why diets can be modified to meet an animal’s needs during different life stages and seasonal changes (in consultation with Nutritionists/Advisors as required) |
| **2.4.3 Feed Presentation** | Routinely **deliver** and **mix** feed items which meet the biological needs of the species to enclosures and **transfer** diets to devices or locations from which they can be eaten, ensuring an expected level of hygiene and cleanlinessRoutinely **provide access** to potable water in a species-appropriate presentation | **Describe** the feeding process thoroughly (e.g. chopping, sprouting) and the impact this has on foraging time and feed selection and **create** an enrichment plan**Present** feed in a manner which presents species-specific natural behaviours, also taking into account individual needs (e.g. geriatric, disabled, etc.) | **Supervise** and **evaluate** the feeding process and**Create** enrichment devices and food presentation strategies for nominated species, to promote natural behaviours |
| **2.4.4 Feed Utilisation** | **Report** on how much of the diet is eaten on a daily basis and **comment** on the faecal consistency the diet produces | **Propose** modifications to the daily diet to minimise the amount of uneaten food and contingent wastage and **use** a scoring chart to categorise faecal consistency | **Record** and **plan** feed acquisition for nominated species in consultation with other zoo professionals to ensure acceptable faecal consistency is achieved |
| **2.4.5 Waste Food Disposal** | **Remove** uneaten feed and dispose of it appropriately and sustainably under supervision | **Identify** potential for re-use or recycling of uneaten feed in accordance with Zoo standard operating procedures | **Monitor** trends in uneaten and waste food and discuss strategies to minimise excessive waste with colleagues |

**Resources**

* Diet sheets
* EAZA Best Practice guidelines – [**EAZA**](http://eaza.net/conservation/programmes)
* The use of plants in zoos and aquaria – [**ZooPlants.Net**](http://www.zooplants.net/)

**Paths to fulfilment**

* DMZAA Unit 8: Animal Nutrition – [**Sparsholt College**](https://ledge.sparsholt.ac.uk/course/view.php?id=442)

**2.5 Nutrition**

Feeding and nutrition are fundamental to animal health and welfare and constitute one of the obligations of keeping animals in captivity. Keepers need to have underpinning knowledge of the principles of fed utilisation and the impact of diet on animal condition so that diets can be modified appropriately. A knowledge of the nutrition and feeding sections of relevant husbandry guidelines for appropriate taxa is recommended as these are an integral part of EAZA standards.

* Digestion of Food: zookeepers can demonstrate knowledge of food acquisition and its breakdown in the alimentary tract.
* Ration Design and Formulation: zookeepers can describe how a balanced diet is produced
* Diet Supplementation: zookeepers can discuss situations where dietary supplementation is required and what is appropriate.
* Animal Condition Scoring: zookeepers can describe how body condition scoring can assist with successful zoo animal management.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **2.5.1 Digestion of Food** | **Describe** how species in their care physically (e.g. chewing) and chemically (e.g. digestive enzymes) break down food within the digestive system | **Describe** how species in their care achieve digestion of feed and how this can be disrupted or modified by internal or external factors | **Discuss** how a wide range of different taxa process ingested food and how dietary change affects faecal consistency |
| **2.5.2 Ration Design and Formulation** | **Identify** the essential components of a diet relevant to a species under their care and how the diet is presented | **Discuss** how diets can be modified across different life stages to ensure nutrient requirements continue to be met | **Assist** nutritionists in re-formulating diets, substituting components when required and interpret diet sheets according to developments in knowledge |
| **2.5.3 Diet Supplementation** | **Identify** situations where short or long term dietary supplementation is required | **Identify** which supplements are suitable for (and the appropriate rate for) inclusion to the diet of animals in their care | **Assist** nutritionists in providing guidance to other team members on effective supplementation for a range of species and plan their seasonal use |
| **2.5.4 Animal Condition Scoring** | **Use** body condition scoring (BCS) sheets to assess a range of animals in their care in a consistent manner | **Assist** other team members in the use of body condition scoring systems for species in their care | **Discuss** suitable modifications to existing BCS systems or **design** novel body condition score recording systems across a range of species**Modify** diets to change BCS as recommended |

**Resources**

* Husbandry Guidelines and care manuals
* A. Fidgett et al. (eds.), *Zoo Animal Nutrition,* Volumes 1 – 4
* L. Case, L. Daristotle, M. Hayek and M. Foess Raasch, *Canine and Feline Nutrition: A Resource for Companion Animal Professionals*, 2010

**Paths to fulfilment**

* DMZAA Unit 8: Nutrition – [**Sparsholt College**](https://ledge.sparsholt.ac.uk/course/resources.php?id=442)
* EAZA Academy courses – [**EAZA**](http://www.eaza.net/academy/courses/)

**2.6 Handling and Transport**

Animal handling within an animal collection facilitates a huge proportion of good husbandry practises, and is thus an essential element of zookeeper competency. Many training, medical, enrichment and movement procedures require good practical animal handling skills. In order to assist breeding programs and best care, animal transporting is often necessary and zookeepers are integral in these activities. Zookeepers need to to handle animals in a way that minimises risk to both themselves and their animals, and the modern zookeeper should possess a full range of skills, attitudes and knowledge to ensure handling and transport procedures are appropriate, effective and in line with relevant legislation.

This unit links with 2.7 Animal Training, 2.9 Animal Health, and 4.6 Legislation.

* Methods of Approach and Loading: zookeepers can describe the important considerations for animal preparation, approach and loading for transportation.
* Equipment Used in Handling: zookeepers can identify appropriate equipment for restraint and safely demonstrate its use.
* Transportation Systems and Procedures: zookeepers can prepare animals for transport in accordance with Best Practice.
* Relevant Legislation for Handling and Transport: zookeepers can demonstrate compliance with current transport legislation.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **2.6.1 Methods of Approach and Loading** | Appropriately and safely **approach** and **handle** a range of taxa under supervision (including the use of appropriate animal training) | **Differentiate** which methods of approach and loading are best**Plan** for and make informed choices to facilitate this | **Coordinate** the team in planning and implementing handling and loading in the transportation process |
| **2.6.2 Equipment Used in Handling a Range of Taxa** | **Demonstrate** correct and safe use of a range of handling equipment as directed for a range of taxa in their care | Accurately **select** appropriate equipment for handling a range of taxa in their care | **Coordinate** safe and correct use of equipment for a range of procedures**Adapt** and **update** equipment inventory regularly or as required |
| **2.6.3 Transportation Systems and Procedures** | **Assist** in preparing animals for transportation in line with best practise guidance from their team and informs supervisors of unexpected situations | **Differentiate** the best systems for correct transport procedures, taking animal welfare considerations into account | **Coordinate** the appropriate preparation of preparing animals appropriately for transportation and **adapt** systems in place as necessary |
| **2.6.4 Relevant Legislation for Handling and Transport** | **Demonstrate** compliance with relevant legislative requirements for the movement of animals under supervision | **Review** legislative compliance via checks and adaptations during planning and transportation activities | **Coordinate** and **establish** best practise within a team for legislative compliance – maintaining current training and information-sharing |

**Resources**

* EAZA Best Practice Guidelines – [**EAZA**](http://eaza.net/conservation/programmes)
* *International Zoo Yearbook* – [**Zoological Society of London**](https://www.zsl.org/science/publications/scientific-publications/international-zoo-yearbook)
* G. Hosey, V. Melfi and S. Pankhurst, *Zoo Animals – Behaviour, Management, and Welfare*, 2nd edn., 2013
* D.G. Kleiman, K.V. Thompson and C. Kirk Baer (eds.), *Wild Mammals in Captivity: Principles and Techniques for Zoo Management*, , 2nd edn., 2010
* P.A. Rees, *An Introduction to Zoo Biology and Management*
* Journals such as *JZAR* ([**EAZA**](http://www.jzar.org/jzar)), *Zooquaria* ([**EAZA**](http://www.eaza.net/about-us/communications/)), *Ratel* ([**ABWAK**](https://abwak.org/ratel_journal)), *Zoo Biology*, etc.
* Convention on International Trade in Species of Wild Flora and Fauna – [**CITES**](https://www.cites.org/)
* The International Air Transport Association’s Live Animals Regulations – [**IATA**](http://www.iata.org/whatwedo/cargo/live-animals/Pages/index.aspx)
* Local government websites for relevant legislation applying to country of work or study

**Paths to fulfilment**

* DMZAA Unit 5 – Enclosure Design and Maintenance in Zoos and Aquariums in relation to Health & Safety Legislation and adaption of enclosures for handling/training purposes
* DMZAA Unit 7 – Animal Records and Transportation in Zoos and Aquariums
* DMZAA 2nd Year Units 12-30 as taxon-specific systems of handling and restraint

**2.7 Training**

Animal training is an important part of the daily routine and management of zoo animals and can have several goals, and a positive impact on an animal’s welfare. Animals can be trained for husbandry issues like blood sampling, for enrichment or for educational demonstrations. It is important for zookeepers to know the basic principles of training and the purpose it serves in zoos. In all cases the trainer knows the basics and the do’s and don’ts of training.

* Training Basics: zookeepers are aware of the do’s and don’ts and the basics of animal training and can use the universal terms in a professional way while avoiding anthropomorphism. Zookeeper are aware of their important role as a zookeeper and trainer.
* Training Methods and Techniques: zookeepers can describe and use different methods and techniques such as operant and classical conditioning, positive reinforcement, bridging stimulus, shaping.
* Training Programme: zookeepers can work according to the training programme.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **2.7.1 Training Basics** | **Summarise** the importance of training**Define** the basic principles of training**State** what to do and what not to do in their daily routine, to minimize the impact on the training progress of the animal | **Summarise** the importance of training regarding to animal welfare and **apply** the basics of training in their daily routine | **Monitor** the progress of the training and **adjust** the training programme where needed**Provide** guidance to other colleagues and team members |
| **2.7.2 Training Methods and Techniques** | **Describe** several simple training methods**Explain** why positive reinforcement should be the standard in every zoo**Describe** the consequences of incorrect training | **Train** animals using tried and tested positive reinforcement-based techniques in simple situations (e.g. target training with a single animal) | **Use** a variety of suitable training methods and techniques in more challenging situations (e.g. dealing with challenging individuals, training in a group situation, training behaviour sequences)**Select** the appropriate method or technique to solve an identified training need |
| **2.7.3 Training Programme** | **Describe** the importance of training according to agreed protocols | **Demonstrate** appropriate use of the training programme for the species under their care and **give feedback** to the responsible supervisor | **Design** a training programme for a specific animal or a group of animals adjusted to the natural behaviour of the animal**Receive** and **interpret** feedback on training according to the latest standards and specific purposes of training |

**Resources**

* K. Ramirez, *Animal Training: Successful Animal Management Through Positive Reinforcement*
* K. Pryor, *Don’t Shoot the Dog!: The New Art of Teaching and Training*
* K. Pryor, *Getting Started: Clicker Training for Dogs*
* P. Tillman, *Clicking With Your Dog: Step-By-Step in Pictures*
* J.A. Zeligs, *Animal Training 101: The Complete and Practical Guide to the Art and Science of Behavior Modification*
* G. Stafford, *Zoomility: Keeper Tales of Training with Positive Reinforcement*

**Paths to fulfilment**

* EAZA Academy Course ‘Animal Training: Understanding and Managing Animal Behaviour’ – [**EAZA**](http://www.eaza.net/academy/courses/)

**2.8 Record Keeping**

This topic requires zookeepers to demonstrate competence in keeping a range of records for species within their care to ensure that accurate and consistent data is entered on record keeping systems such as ZIMS. The range of records will include those relevant to husbandry and management across various life stages and could include personal, section and institutional recording systems. It is expected that records will be consistent with EAZA Best Practice Guidelines where they have been developed.

This unit relates to units 2.2 Animal Behaviour and 2.7 Animal Training.

* Recording Systems:  zookeepers can demonstrate effective data and record collection in a required format and approved guidelines.
* Husbandry Records: zookeepers can gather and record husbandry, feeding and health records.
* Breeding & Behaviour: zookeepers can differentiate and record a normal range of breeding and non-breeding behaviours.
* Training Records: zookeepers can summarise and record developmental behaviours expected in a training routine.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **2.8.1 Recording Systems** | **Gather** and **record** essential information in a basic format (e.g. diary, tick sheet & white boards) | **Facilitate** data collection and accurate recording through their own work and by supporting others | **Coordinate** team members in the practice of data collection**Ensure** compliance with legislation and **validate** for formal reporting (e.g. ZIMS & PMx) |
| **2.8.2 Husbandry Records** | **Gather** and **record** consistently accurate data for feeding, cleaning and health for species in their care | **Describe** the records which need to be kept and collated for feeding, cleaning & health.**Monitor** section records of species in their care | **Review** and **modify** husbandry record keeping practices to ensure relevance and suitability for purpose and **provide guidance** to other colleagues**Supervise** other team members’ record keeping |
| **2.8.3 Breeding & Behaviour Records** | **Gather** and **record** data/information on routine and specific breeding behaviour e.g. courtship, mating, gestation, incubation and pre- and post-birth as applicable to species in their care | **Describe** the records which need to be kept and collated for routine and specific breeding behaviour.**Monitor** section records of species in their care | **Review** and **modify** routine and specific breeding behaviour record keeping practices to ensure relevance and suitability for purpose**Interpret** records/observations and **ensure** appropriate action is taken**Supervise** other team members’ record keeping |
| **2.8.4 Training Records** | **Gather** and **record** data on maintenance of a behavioural repertoire based on an existing training plan for species in their care | **Gather** and **record** data on developing new behaviour(s) ensuring consistency in recording progress for species in their care | **Supervise** data recorded and **evaluate** effectiveness and clarity of reports before and after review with team members |

**Resources**

* EU Zoos Directive Good Practices Document (chapter 2.6) –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)
* EAZA Standards for the Accommodation and Care of Animals in Zoos and Aquaria – [**EAZA**](http://www.eaza.net/about-us/eazadocuments/)
* EAZA Best Practice Guidelines – [**EAZA**](http://eaza.net/conservation/programmes)
* The International Air Transport Association’s Live Animals Regulations – [**IATA**](http://www.iata.org/whatwedo/cargo/live-animals/Pages/index.aspx)
* EAZA Guidelines for Creating and Sharing Animal and Collection Records – [**AZA**](https://www.aza.org/assets/2332/guidelines_for_creating_and_sharing_animal_and_collection_records_final.pdf)
* UK Secretary of State’s standards of modern zoo practice – [**GOV.UK**](https://www.gov.uk/government/publications/secretary-of-state-s-standards-of-modern-zoo-practice)

**Paths to fulfilment**

* ZIMS training documents, webinars and interactive help – [**Species360**](https://www.species360.org/products-services/training/)
* EAZA Academy Courses – [**EAZA**](http://www.eaza.net/academy/courses/)
* DMZAA Unit 7: Animal Records & Transportation – [**Sparsholt College**](https://ledge.sparsholt.ac.uk/course/view.php?id=630)

**2.9 Animal Health**

Zoos have an ethical and legal obligation to manage the health of animals in their care. Diagnosis and treatment of health problems should always be led by a qualified veterinarian, however zookeepers also have an important role to play in ensuring the health of zoo animals. Much of a zookeeper’s role in animal health is preventative and covered in other topics in Area 2 and 3: providing species appropriate exhibits, social groups, nutrition and enrichment will all help zoo animals remain physically and mentally healthy. Even with a high level of care animals may still become ill or injured, and require short or long-term additional care. In these circumstances, zookeepers play a vital role in communicating with veterinarians and zookeepers are expected to demonstrate competence in the following areas:

* Health Observations: zookeepers know the animals they work with, and can take appropriate action when they identify health concerns (relates to topics 2.1 and 2.2).
* Administering Treatments: zookeepers can assist veterinary staff in administering a range of treatments in different circumstances.
* Medical Procedures: zookeepers may attend and be able to assist during medical procedures carried out by vets.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **2.9.1 Health Observations** | **Perform** frequent daily observations of animals they are working with**Identify** visual signs of poor health (can be physical: e.g. feather loss, visible wounds or behavioural: e.g. lethargy, reduced feeding)**Monitor** waste output and report any unusual changes (e.g. loose faeces)**Report** any signs of poor health to a supervisor, giving a detailed description of their observations**List** common indicators of poor health in species they work with | **Monitor** changes in health of individuals with pre-identified health issues and report their findings to a supervisor or veterinarian**Assess** the severity of a health problem and share their assessment with a supervisor or veterinarian in a timely manner | **Compile** records of observations over time and across individuals**Evaluate** observation data and identify trends in health observations**Collaborate** with colleagues to **plan effective solutions** if trends in poor health are identified |
| **2.9.2 Administering Treatments** | **Assist** in administering simple and routine treatments as part of preventative care or management of chronic health issues (e.g. adding medication to food or water)**Comply** with any recommended husbandry changes required for treatment (e.g. provision of dust free bedding)**Record** details of any treatment administered | **Assist** in administering more complex treatment after appropriate training from a veterinarian (e.g. direct administration of medication to an individual) | **Collaborate** with veterinarians to **develop**a treatment plan**Support** team members in implementing a treatment plan |
| **2.9.3 Medical Procedures** | **Comply** with instructions from veterinary staff | **Attend** and **observe** medical procedures carried out on their animals (if invited by veterinary staff)**Follow** agreed procedure to minimise risks to animal or human health (relates to topic 3.2) | **Assist** in medical procedures by monitoring vital signs (e.g. temperature, heart rate)**Assist** in medical procedures by managing animals using appropriate techniques (relates to topic 2.6) |

**2.10 Animal Welfare**

Animal welfare can be defined as the state of the animal as perceived by the animal itself, with regards to its attempts to cope with its environment (Broom, 1986). It is the animal’s own experience and interpretation of its own situation which is important, not our perception of their state or ethical opinion. Promoting positive animal welfare and minimising negative animal welfare experiences is the foundation of good animal husbandry and consequently is fundamental to modern zoo and aquarium research, education and conservation. The use of scientific research to assess and understand animal welfare is rapidly growing and evidence-based animal welfare is increasingly being recognised as integral to best-practice zoo animal management; alongside our ethical responsibility and Duty of Care to promote positive welfare for the animals in our care.
Zoo keepers should strive to progress in the following areas:

* Theoretical Animal Welfare: zookeepers understand the theory of animal welfare science.
* Applied Animal Welfare: zookeepers can apply evidence-based animal welfare practice.
* Animal Welfare Assessment: zookeepers can progress animal welfare best-practice through utilising animal welfare assessments.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **2.10.1 Theoretical Animal Welfare** | **Summarise** what animal welfare is and why it is important**Explain** the difference between welfare and ethics**Explain** how animal welfare is impacted within zoo animal management including **demonstrating** an understanding of adopting a holistic approach to animal welfare | **Describe** different animal welfare models**Engage** with animal welfare resources and explain significant of outcomes**Explain** the impact of animal welfare on conservation, education and research within zoos and aquariums | **Analyse** different animal welfare models**Demonstrate** an understanding of animal welfare indicators and a range of welfare parameters**Demonstrate** an understanding of evidence-based animal welfare research and an ability to extract valid research outcomes**Engage** with continued professional development (CPD) opportunities |
| **2.10.2 Applied Animal Welfare** | **Identify** welfare considerations in daily husbandry procedures and actions to improve welfare**Demonstrate** application of positive animal welfare in daily husbandry**Suggest** ways in which animal welfare can be improved**Conduct** oneself appropriately when in the vicinity of animals, including adopting appropriate handing and moving of animals | **Define** the importance of evidence-based animal welfare**Explain** how to access evidence-based resources**Demonstrate** application of evidence-based animal welfare within a zoo setting and husbandry practices**Evidence** record keeping to monitor animal welfare**Demonstrate** information sharing within their institution | **Develop** and **implement** welfare-based protocols/procedures**Evidence** data collection and use of results to improve animal welfare**Analyse** records and implement welfare interventions**Demonstrate** information sharing/collaboration outside of institution**Demonstrate** knowledge of relevant animal welfare legislation |
| **2.10.3 Animal Welfare Assessment** | **Explain** what animal welfare assessments are**Summarise** why animal welfare assessments are important**Conduct** an animal welfare assessment**Identify** areas requiring welfare intervention and **apply** | **Summarise** considerations for designing, interpretation and completion of welfare assessments**Explain** the difference between welfare inputs and outputs and **evaluate** their value in welfare assessments**Explain** different methods/parameters for measuring welfare | **Design** a welfare assessment and **explain** validity of parameters used**Demonstrate** delivery of a systematic welfare assessment system**Demonstrate** delivery of a formalised procedure for application of welfare interventions |

**Resources**

* Documents:
	+ EU Zoos Directive Good Practices Document - [**European Commision**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)
	+ EU Council Directive 1999/22/EC 1999 Relating to the keeping of wild animals in zoos - [**European Commission**](http://ec.europa.eu/environment/nature/legislation/zoos/index_en.htm)
* Journals:
	+ Journal of Zoo and Aquarium Research - [**JZAR**](https://www.jzar.org/jzar)
	+ [**PLOS One**](http://journals.plos.org/plosone/)
	+ [**Research Gate**](https://www.researchgate.net/)
* Websites:
	+ European Association of Zoos and Aquaria - [**Animal Welfare**](https://www.eaza.net/about-us/areas-of-activity/animal-welfare/)
	+ [**Wild Welfare**](http://wildwelfare.org/)
	+ [**The Shape of Enrichment**](http://www.enrichment.org/)
* Social Media:
	+ EAZA Animal Welfare - [**Facebook**](https://www.facebook.com/groups/EAZAAnimalWelfare/)
	+ EAZA Nutrition - [**Facebook**](https://www.facebook.com/EAZAnutrition/)
	+ EAZA Animal Training Working Group - [**Facebook**](https://www.facebook.com/groups/1458815717518238/)
	+ The Shape of Enrichment - [**Facebook**](https://www.facebook.com/shapeofenrichment/)
	+ WAZA Animal Welfare - [**Facebook**](https://www.facebook.com/WAZAAnimalWelfare)

**Paths to fulfilment**

* EAZA Academy animal welfare-based courses - [**EAZA**](https://www.eaza.net/academy/courses)
* Coursera online courses – Animal Behaviour and Welfare - [**Coursera**](https://www.coursera.org/learn/animal-welfare)

**Area 3: Environmental management**

In addition to animal management, knowledge, skills and competencies in managing the zoo environment are also essential to the zookeeper role. This includes animal enclosures, visitor areas, and staff only spaces. Zookeepers need to be able to combine their skills and knowledge in these two areas to successfully carry out their daily core tasks. Within this area there are five topics:

* [**3.1 Enclosure Design**](https://www.zookeepers.eu/framework/area-3-environmental-management/3-1-enclosure-design/)
* [**3.2 Health and Safety**](https://www.zookeepers.eu/framework/area-3-environmental-management/3-2-health-and-safety/)
* [**3.3 Cleaning**](https://www.zookeepers.eu/framework/area-3-environmental-management/3-3-cleaning/)
* [**3.4 Biosecurity**](https://www.zookeepers.eu/framework/area-3-environmental-management/3-4-biosecurity/)
* [**3.5 Enclosure Maintenance**](https://www.zookeepers.eu/framework/area-3-environmental-management/3-5-enclosure-maintenance/)

**3.1 Enclosure Design**

Zoos have to provide a high standard of accommodation for all the animals in their care, both on-show and off-show, permanent and temporary. Accommodation must take account of the welfare of the species, their space and social needs, appropriate and efficient management by staff and appropriate display to the public. Animals are the most important stakeholder; zookeepers are their voice in the enclosure design process and must have a thorough understanding of animal welfare needs. Within this topic there are three competencies:

* Stakeholders: zookeepers can identify the key stakeholder groups involved in enclosure design.
* Enclosure Safety: zookeepers can work according to the safety requirements of the enclosure and to take into consideration the importance of barriers.
* Habitat Design: zookeepers can understand all the components that are required to suitably accommodate the animals in their care.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
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| **3.1.1 Stakeholders** | **Identify** key stakeholder groups involved in enclosure design, including animals, visitors, zoo management, veterinarians, the zookeepers themselves, and, if applicable, legislative bodies**Explain** the reason why these groups are considered stakeholders | **Describe** the most important needs of each stakeholder group with regard to enclosure design (e.g. visitor needs: viewing windows, accessible paths, etc.)**Assess** the strengths and weaknesses of different enclosure designs from the point of view of each stakeholder group | **Analyse**how an enclosure meets the needs of stakeholders and **make recommendations** for improvements based on that analysis**Incorporate** training and enrichment needs into enclosure design (e.g. by provision of a training wall) |
| **3.1.2 Enclosure Safety** | **Describe** different types of security measures used in enclosures (including different types of barriers, doors, locks, flaps, etc.)**Maintain** security measures according to existing protocols | **Identify** (bio)hazards connected to the enclosure design**Apply** their knowledge to resolve identified safety-related problems | **Implement** safety measures in enclosure design (including barriers) and carry out appropriate risk assessments |
| **3.1.3 Habitat design** | **List**common types of enclosures and **identify** for which species these enclosures would be suitable**Identify**the main components of animal enclosures (e.g. on-show and off-show accommodation, quarantine sections, etc.)**Name** appropriate furnishings for the species that they work with regularly (e.g. rocks, suitable planting, substrate, etc.)**Describe** situations where special considerations are needed (e.g. mixed species exhibits, special climate needs, etc.) | **Apply** their knowledge regarding enclosure components and furnishings to **assess** the enclosure(s) that they are working with and **propose** simple improvements or modifications to the furnishing of an enclosure | **Design**a completely new or refurbished habitat**Analyse** the ways in which the habitat is used by the animals living in it and **integrate** their findings into future plans |

**Resources**

* EAZA Standards for the Accommodation and Care of Animals in Zoos and Aquaria – [**EAZA**](http://www.eaza.net/about-us/eazadocuments/)
* Handbook DMZAA Unit 5: Enclosure Design & Maintenance in Zoos & Aquariums – [**Sparsholt College**](https://issuu.com/andoversp11/docs/unit_5_handbook_jg)
* EU Zoos Directive Good Practices Document (chapter 2.4) –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)

**Paths to fulfilment**

* EAZA Academy Course ‘Exhibit Design and Planning’ – [**EAZA**](http://eaza.net/academy/courses/)
* Diploma in Management of Zoos and Aquariums Animals (DMZAA) – [**Sparsholt College**](https://www.sparsholt.ac.uk/)

**3.2 Health and Safety**

“*The management (or control) of health and safety at the zoo is an important factor in ensuring the health and safety of zoo employees, and others who may be affected by the zoo’s activities. Organisations are now expected to control health and safety as they would other core activities. Preventing harm to employees and preserving human resources is viewed as being cost effective and vital to reduce financial losses and liabilities.”*
– Managing Health and Safety in Zoos – [**HSE UK**](http://www.hse.gov.uk/pubns/priced/hsg219.pdf)

Within this topic there are four competencies:

* Safety Issues and Procedures: zookeepers can recognise general principles that can be applied to most zoo work places to ensure that employees, visitors and animals have a reduced exposure to risk of injury or escape.
* Risk Management: zookeepers can identify common hazards associated with highlighting the risk and control measures that should be applied.
* Health Issues: zookeepers can maintain practice of cleanliness with the aim of preventing illness.
* Accommodation Safety and Security: zookeeper can maintain a safety environment for zoo animals, other zoo staff and zoo visitors.
* Animal Security: zookeepers incorporate animal security into their daily routines, and can respond appropriately in case of animal escape.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **3.2.1 Safety Issues and Procedures** | **Work safely**and independently with lower risk animals, according to existing health and safety protocols**Comply**with any applicable regional health and safety legislation**Report** security issues | **Work safely** with higher risk animals | **Train** and **supervise** staff (interns and new employees) for manual animal handling**Develop** safety procedures for their work routine |
| **3.2.2 Risk Management** | **Perform** safe work routine inside or outside animal enclosures according to existing risk assessments**Comply** with existing protocols in emergency situations (e.g. accidents, injury) | **Identify** hazards within enclosures**Monitor** visitors and maintain awareness of the location and behaviour of the animals in animal contact areas | **Review** and **provide feedback**on relevant policies, procedures and protocols**Perform** appropriate communication with visitors and staff during an emergency situation**Report** potential risk issues**Develop** risk assessments for their work routine |
| **3.2.3 Health Issues** | **List** a variety of types of zoonotic diseases and transmission pathways**Maintain** personal hygiene and comply with safe work practices properly**Follow** protocols for safe handling and disposal of hazardous materials**List** measures for avoiding hazards and common injuries | **Recognise** potential risk factors associated with zoonosis and common zoonotic diseases**Assess** disposal of hazardous materials according to procedures | **Participate** in animal diagnostic and treatment procedures of zoonotic infection**Design** and **implement** a plan for the disposal of hazardous materials |
| **3.2.4 Accommodation Safety and Security** | **Perform** daily checks (barriers and environment) for hazardous irregularities**Demonstrate** awareness of regional legal requirements for housing/buildings | **Recommend** or **make** appropriate modifications to enclosures to maintain a safe working and animal environment**Apply** regional legal requirements for housing/buildings | **Supervise** the appropriate maintenance of quarantine and isolation facilities **Plan** future developments for enclosure maintenance |
| **3.2.5 Animal Security** | **Count** and **verify** the number of animals present in the enclosure every day, and after any shifting of animals**Describe** institutional protocols for dealing with animal security emergencies (e.g. animal escape, unintentional human-animal contact) and specifically the role they are expected to play**Demonstrate** **compliance** with agreed procedures (e.g. through emergency drills) | **Support** other staff in complying with emergency protocols | **Participate** as a member of the emergency response team in case of an animal emergency**Train** other staff on animal security procedures |

**Resources**

* EU Zoos Directive Good Practices Document (chapter 2.5) –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)
* Managing Health and Safety in Zoos – [**HSE UK**](http://www.hse.gov.uk/pubns/priced/hsg219.pdf)
* Handbook DMZAA Unit 5: Enclosure Design & Maintenance in Zoos & Aquariums – [**Sparsholt College**](https://issuu.com/andoversp11/docs/unit_5_handbook_jg)
* Secretary of State’s Standards of Modern Zoo Practice: Dangerous Animal Categorisation – [**DEFRA**](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69596/standards-of-zoo-practice.pdf)

**3.3 Cleaning**

It is essential that zoos maintain proper standards of hygiene, both in respect of the personal hygiene of the staff and that of the animal enclosures and treatment rooms. Within this topic there are four competencies:

* Cleaning and Cleanliness: zookeepers can maintain cleanliness and good hygiene practice in the workplace.
* Cleaning Safety: zookeepers can perform cleaning in accordance with the safety protocols and according to the instructions.
* Cleaning and Biology: zookeepers can perform cleaning in accordance with biological requirements of each species.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **3.3.1 Cleaning and Cleanliness** | **Demonstrate** proper personal hygiene practices**Clean** enclosures to an agreed standard and according to a safe and appropriate daily cleaning regime**Follow** procedures for reporting situations in need of repair or maintenance (links to 3.2.4 Accommodation Safety and Security)**Describe** the consequences of poorly cleaned enclosures | **Compile** daily maintenance reports appropriately and provide these to maintenance staff**Clean** enclosures to a high standard, as well as highly visible or difficult places**Explain** the differences between cleaning, sanitising and disinfection | **Supervise** other staff while cleaning to ensure high standards of cleanliness**Develop** cleaning management plans for their department and ensure colleagues understand cleaning priorities**Perform** appropriate cleaning during quarantine or disease outbreak |
| **3.3.2 Cleaning Safety** | **Demonstrate compliance** with the cleaning protocols**Use** cleaning products and cleaning equipment according to the instructions**Recognise** hazards related to cleaning products | **Establish** safe cleaning regimes**Supervise** safe use of cleaning products and equipment | **Select** suitable cleaning products, following specialist (e.g. a vet’s) recommendations |
| **3.3.3 Cleaning and Biology** | **Recognise** the need to adjust the cleaning regime to account for species-/animal-specific situations (e.g. scent marking or removal of body fluids) | **Implement** changes to the cleaning regime in response to specific situations and **report** to supervisors | **Produce** long term cleaning plans, incorporating seasonal changes and biological needs**Develop** plans for their department which provide flexibility of cleaning regime and product selection to cover changing needs |

**Resources**

* Handbook DMZAA Unit 5: Enclosure Design & Maintenance in Zoos & Aquariums – [**Sparsholt College**](https://issuu.com/andoversp11/docs/unit_5_handbook_jg)
* *The Modern Zoo: Foundations for Management and Development* – [**EAZA**](http://www.eaza.net/assets/Uploads/images/Membership-docs-and-images/Zoo-Management-Manual-compressed.pdf)
* G. Hosey, V. Melfi and S. Pankhurst, *Zoo Animals – Behaviour, Management, and Welfare*, 2nd edn., 2013
* EAZA Standards for the Accommodation and Care of Animals in Zoos and Aquaria – [**EAZA**](http://www.eaza.net/assets/Uploads/Standards-and-policies/Standards-Accommodation-Care-2014-v2.pdf)

**Paths to fulfilment**

* Diploma in Management of Zoos and Aquariums Animals (DMZAA) – [**Sparsholt College**](https://www.sparsholt.ac.uk/)

**3.4 Biosecurity**

*“Zoos must ensure that their biosecurity is not compromised. The need for zoos to maintain a high level of biosecurity at all stages of food securing and preparation cannot be overstated. Measures should be in place to prevent the contamination of food during storage and preparation and reduce the risk that food stuffs becoming vectors for disease. Such measures should be an integrated part of good husbandry. Pest control in relation to food preparation and storage can be achieved throughout a variety of steps, all of which reduce the impact of pest species.”*
– G. Hosey, V. Melfi and S. Pankhurst, *Zoo Animals – Behaviour, Management, and Welfare*, 2nd edn., 2013

Within this topic there are four competencies:

* Biosecurity: zookeepers are capable of following set precautions to minimise the risk of infection.
* Waste Management: zookeepers are able to manage and dispose of waste products using strict biosecurity practices.
* Storage Management: zookeepers are able to ensure that animal food is obtained and stored in ways that minimise biosecurity risks.
* Food Management: zookeepers are able to ensure that animal food is prepared and presented in ways that minimise biosecurity risks

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **3.4.1 Biosecurity** | **State** the principles and associated risks of biosecurity**Perform** routine biosecurity measures | **Discuss** which factors affect zoo biosecurity for species under their care and appropriate control measures to maintain biosecurity | **Evaluate** existing biosecurity plans and develop appropriate improvements |
| **3.4.2 Waste Management** | **Identify** various waste categories**Separate**, **manage** and **dispose of** waste products in an appropriate manner | **Discuss** strategies for sustainable waste management and device recycling initiative | **Supervise** other staff in relation to waste management**Develop** strategies for sustainable waste management (links to 4.5.1 Zoo Management – Sustainable Practice) |
| **3.4.3 Storage Management** | **Identify** and **demonstrate** affective practice of food materials storage**Demonstrate** appropriate pest control measures under supervision | **Monitor** potential pathways by which of hazards could be introduced and make appropriate record and responses to supervisors | **Coordinate** record keeping systems and actions for development of storage safety procedures |
| **3.4.4 Food Management** | **Recognise** food that has been inappropriately stored and is subject to spoilage**Prepare** food in accordance with recognised standards operating procedures | **Provide** guidance to other colleagues while performing safe food practices**Record** the sources and delivery dates of food | **Coordinate** recording and reporting of food spoilage and deterioration and incorporate this information into food inventories |

**Resources**

* A. Reiss and R. Woods (eds.), *National Zoo Biosecurity Manual* – [**ZAA**](http://www.zooaquarium.org.au/wp-content/uploads/2011/10/National-Zoo-Biosecurity-Manual-March-2011.pdf)
* G. Hosey, V. Melfi and S. Pankhurst, *Zoo Animals – Behaviour, Management, and Welfare*, 2nd edn., 2013
* *The Modern Zoo: Foundations for Management and Development* – [**EAZA**](http://www.eaza.net/assets/Uploads/images/Membership-docs-and-images/Zoo-Management-Manual-compressed.pdf)
* D.A. Schmidt, D.A. Travis and J.J. Williams, ‘Guidelines for creating a food safety HACCP program in zoos or aquaria’, Zoo Biology, Vol. 25, Issue 2, pp 125-135
* EU Zoos Directive Good Practices Document (chapter 2.5) –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)

**3.5 Enclosure Maintenance**

*“Properly designed and maintained enclosures are essentials to the managing of the animals. Everything should provide a safe environment for staff and visitors and also ensure that housing and husbandry stimulate the animals both physically and psychologically. Housing and husbandry should also enable the keepers to maintain and promote good animal welfare.”*
– G. Hosey, V. Melfi and S. Pankhurst, *Zoo Animals – Behaviour, Management, and Welfare*, 2nd edn., 2013

Within this topic there are two competencies:

* General Maintenance: zookeepers can perform safe and appropriate maintenance of enclosures.
* Use of Tools: zookeepers can use tools appropriately and in accordance with recognized procedures.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **3.5.1 General Maintenance** | **Perform** daily checks and carry out basic maintenance of the enclosure**Report** potential issues to their supervisor | **Participate** in repairing the enclosure where possible and report more complex issues to maintenance staff | **Supervise** maintenance process and **develop**maintenance management plan in association with appropriate colleagues and supervisors |
| **3.5.2 Use of Tools** | **Use** and **store** simple tools correctly (e.g. shovel, hammer, rake)**Perform** routine maintenance of tools | **Use** electrical tools in accordance to the safety protocols**Demonstrate** the ability to work safely at height**Perform** preventive maintenance of tools | **Coordinate** use, storage maintenance and purchase of tools**Manage** the budget in association with financial staff |

**Resources**

* Handbook DMZAA Unit 5: Enclosure Design & Maintenance in Zoos & Aquariums – [**Sparsholt College**](https://issuu.com/andoversp11/docs/unit_5_handbook_jg)
* G. Hosey, V. Melfi and S. Pankhurst, *Zoo Animals – Behaviour, Management, and Welfare*, 2nd edn., 2013
* *The Modern Zoo: Foundations for Management and Development* – [**EAZA**](http://www.eaza.net/assets/Uploads/images/Membership-docs-and-images/Zoo-Management-Manual-compressed.pdf)

**Area 4: The role and operation of a modern zoo**

This area aims to place the work of the zookeeper in a wider context, both within the work of their own institution and also within the global zoo community. This area contains more knowledge-based competencies than the other areas, however there are some competencies which require practical skills, particularly for zookeepers working at higher levels. Within this area there are seven topics:

* [**4.1 Evolution of Zoos**](https://www.zookeepers.eu/framework/area-4-the-role-and-operation-of-a-modern-zoo/4-1-evolution-of-zoos/)
* [**4.2 Conservation**](https://www.zookeepers.eu/framework/area-4-the-role-and-operation-of-a-modern-zoo/4-2-conservation/)
* [**4.3 Conservation Education**](https://www.zookeepers.eu/framework/area-4-the-role-and-operation-of-a-modern-zoo/4-3-education/)
* [**4.4 Applied Scientific Research**](https://www.zookeepers.eu/framework/area-4-the-role-and-operation-of-a-modern-zoo/4-4-applied-scientific-research/)
* [**4.5 Zoo Management**](https://www.zookeepers.eu/framework/area-4-the-role-and-operation-of-a-modern-zoo/4-5-zoo-management/)
* [**4.6 Legislation**](https://www.zookeepers.eu/framework/area-4-the-role-and-operation-of-a-modern-zoo/4-6-legislation/)
* [**4.7 Marketing and Communication**](https://www.zookeepers.eu/framework/area-4-the-role-and-operation-of-a-modern-zoo/4-7-marketing-and-communication/)

**4.1 Evolution of Zoos**

EAZA defines a zoo as any permanent establishment where living wild animals are kept for exhibition to the public for seven or more days a year, with or without an admission charge. A zoo may be a charity or operate in the public or private sector. As well as conventional zoological gardens, this encompasses aquariums, safari parks, bird gardens, birds of prey centres, reptile and amphibian centres, butterfly or bug houses and some animal sanctuaries. The 19th century saw a great growth in zoological gardens being opened to the public to display exotic animals for public education and entertainment, however since the mid-20th century zoos have become increasingly focused on biodiversity conservation and are now complex operations covering a variety of disciplines such as animal husbandry, education, field conservation and research. It is important that keepers are aware of the core functions of modern zoos and understand how this role has developed over time, in order that they maximise the contribution they make to achieving the conservation, education and research goals of the zoo sector. In particular, zookeepers are required to demonstrate competencies in two areas:

* History of Zoos: zookeepers demonstrate awareness of how the role of zoos has evolved over time.
* The Current Role of a Modern Zoo: zookeepers can describe the key roles of a modern zoo and demonstrate how their role as a keeper can contribute to achieving those roles.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **4.1.1 History of Zoos** | **Describe** the basic stages in the development of zoos in Europe | **Describe** the history and, if applicable, the changing role of their own collection | **Describe** how zoos have developed globally and how they have changed over time |
| **4.1.2 The Current Role of a Modern Zoo** | **Define** the term ‘zoo’**Describe** the core functions of a modern European zoo**Identify** the types of animal collections that can be described under the heading ‘zoo’ | **Describe** how their institution fulfils the different aspects of the role of a modern zoo | **Provide evidence** of how they have contributed to the education, conservation and research roles of the zoo**Describe** how their collection is contributing to raising public awareness of sustainability, behaviour change and species conservation in visitors |

**Resources**

* EAZA Strategic Plan 2017-2020 – [**EAZA**](http://www.eaza.net/assets/Uploads/Strategies/Strategic-plan-2017-2020.pdf)
* WAZA Conservation Strategy: *Committing to Conservation* – [**WAZA**](http://www.waza.org/files/webcontent/1.public_site/5.conservation/conservation_strategies/committing_to_conservation/WAZA%20Conservation%20Strategy%202015_Portrait.pdf)
* *The Modern Zoo: Foundations for Management and Development* – [**EAZA**](http://www.eaza.net/assets/Uploads/images/Membership-docs-and-images/Zoo-Management-Manual-compressed.pdf)

**4.2 Conservation**

Conservation is a key role of the modern zoo, and should influence every aspect of work in the zoo. According to the widely endorsed World Zoo and Aquarium Conservation Strategy (2015), WAZA defines conservation as ‘Securing populations of species in natural habitats for the long term.’ Zoos can contribute to conservation in a number of ways, and increasingly conservation efforts are a collaboration between zoos and other stakeholders, working together under the One Plan. Zoos can contribute to conservation directly or indirectly, and ways to contribute may include financial, material, or in-kind contributions to *in situ*conservation work; *ex situ*breeding and population management; *in situ*and/or *ex situ* research; education to raise awareness of conservation issues; and advocacy work. For zookeepers, it is important to understand how conservation underpins the work they do, and to be able to communicate that knowledge to zoo visitors. Zookeepers working at higher levels may also be able to contribute more directly to conservation, e.g. by participating in research, coordinating an *ex situ*breeding programme, or spending time supporting *in situ*projects. This topic has five competencies:

* Conservation Role of Zoos: zookeepers can describe the conservation role of zoos and how keepers can contribute to conservation through their roles (including the One Plan approach).
* Threats to Biodiversity: zookeepers can explain the concept of biodiversity, describe the major threats to biodiversity and explain the strategies used by zoos and other conservation organisations to combat them.
* IUCN Redlisting: zookeepers can describe the redlisting process and demonstrate their understanding of how it applies to *in situ* and *ex situ* conservation.
* Translocations and Reintroduction: zookeepers can describe how reintroduction and translocation can be part of a wider conservation strategy and how keepers can contribute to this.
* Population Management Programmes: zookeepers can describe how breeding programmes can contribute to conservation and demonstrate understanding of how breeding programmes work at regional and global level, including demonstrating understanding of the role of EAZA and different population management structures.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **4.2.1 Conservation Role of Zoos** | **Define** the *in situ* and *ex situ* conservation role of the zoo by describing conservation projects their institution contributes to, including collaborative campaigns (e.g. EAZA conservation campaigns) | **Describe** how their institution contributes to conservation projects**Describe** a range of ways in which zoos can contribute to conservation, including ways in which zookeepers can contribute | **Design** methods by which zoos can make a direct contribution to conservation**Collaborate** with appropriate stakeholders in conservation projects |
| **4.2.2 Threats to Biodiversity** | **Define** the term ‘biodiversity’ and **give examples** of species threatened by the causes of biodiversity loss | **Connect** the conservation work carried out by their institution with threats to biodiversity**Explain** how this conservation work reduces or resolves threats to biodiversity | **Describe** the conservation work done in their institution to illustrate the threats to global biodiversity**Link** their knowledge of threats to biodiversity to the role of zoos in conservation |
| **4.2.3 IUCN Redlisting** | **Name** the different IUCN Red List categories**Identify** which IUCN Red List categories are regarded as ‘Threatened’**Recall** the IUCN Red List category of species they work with frequently | **Describe** the reasons why species may be assessed as Threatened, including but not limited to: limited, reducing, and/or fragmented habitats population declines; small and/or declining populations; high probability of extinction within a set time period**Distinguish** between IUCN global Redlisting and other methods of redlisting (e.g. regional or national) | **Explain** how the IUCN Red List can be a practical tool for *in situ* and *ex situ* conservation work**Describe** how IUCN Redlisting can be applied to internal collection planning |
| **4.2.4 Translocations and Reintroduction** | **Describe** the concept of conservation translocations, including the reintroduction of individuals bred *ex situ* | **Describe** how zoos can be involved in conservation translocations, identifying where keepers can play an active role(If applicable) **relate** this knowledge to any translocations their institution participates in | **Assess** the strengths and weaknesses of translocations and reintroductions that have occurred(If applicable) **collaborate** with co-workers or external stakeholders to participate in conservation translocations |
| **4.2.5 Population Management Programmes** | Briefly **describe** the reasons why zoos participate in breeding programmesBriefly **describe** how programmes are managed at a European (regional) level**Identify**the role(s) of EAZA in *ex situ* population management and **describe**the key concepts of an EAZA Ex situ Programme | **Explain** how different EAZA structures, including but not limited to EEPs, Taxon Advisory Groups (TAGs), the EAZA EEP Committee, and the European Population Management Advisory Group (EPMAG) contribute to running successful population management programmes**Relate** this knowledge to other population management programme structures in place around the world (e.g. SSPs for AZA, ISBs for WAZA)**Distinguish between** programmes for population maintenance and *ex situ* population management to support *in situ* conservation, e.g. through translocation | **Compile** information about individuals in their collection and share it with relevant co-workers or programme co-ordinators or TAG chairs.(If applicable) **collaborate** with colleagues from EAZA to manage an EEP |

**Resources**

* EU Zoos Directive Good Practices Document (chapter 2.2) –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)
* The IUCN Red List of Threatened Species (incl. guidance documents listed under ‘Resources’) – [**IUCN**](http://www.iucnredlist.org/)
* WAZA Conservation Strategy: *Committing to Conservation* – [**WAZA**](http://www.waza.org/files/webcontent/1.public_site/5.conservation/conservation_strategies/committing_to_conservation/WAZA%20Conservation%20Strategy%202015_Portrait.pdf)
* EAZA Conservation Standards – [**EAZA**](http://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA-Conservation-Standards-2016.pdf)
* EAZA Guidelines on the definition of a direct contribution to conservation – [**EAZA**](http://www.eaza.net/assets/Uploads/Guidelines/Contribution-to-conservation-definition-2015-04-Revisions.pdf)
* IUCN Species Survival Commission Guidelines on the Use of Ex Situ Management for Species Conservation – [**IUCN**](https://www.iucn.org/theme/species/publications/guidelines)
* IUCN Guidelines for Reintroductions and Other Conservation Translocations – [**IUCN**](https://www.iucn.org/theme/species/publications/guidelines)

**Paths to fulfilment**

* Free online courses on the United for Wildlife conservation platform – [**United for Wildlife**](https://learn.unitedforwildlife.org/)

**4.3 Conservation Education**

*“If conservation is to succeed, people need to be inspired to care about and understand animals and the threats they face in the wild. To do that EAZA believes, everyone should have the opportunity to experience and learn about wildlife first hand. EAZA members have an important role to play in protecting nature and wildlife both at our zoos and in the wild, and communicating this role through conservation education is essential in EAZA zoos. Conservation education is not just confined to people who visit EAZA zoos and aquariums. It can take place out in the local community, in partnership with other organisations, within in situ projects and collaboratively on a global scale.”*– EAZA Conservation Education Standards – [**EAZA**](http://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA-Conservation-Education-Standards-2016-09.pdf)

Conservation education is one of the key roles of modern zoos, so it is essential for all zoo staff to understand the principles and importance of conservation education. It is particularly important for keepers to be skilled in conservation education, because for many keepers conservation education may be a part of their job role. Even if keepers are not directly tasked with delivering conservation education messages, the nature of the keeper role means that they will be interacting with visitors and so should be able to deliver relevant conservation education messages when talking with the public. It important that all zookeepers have an understanding of how zoos can deliver this role, why it matters and who it matters to. Within this topic there are three competencies:

* Importance of Conservation Education: zookeepers can describe the role that zoos play in educating the public and why this is important for conservation of species.
* Methods for Delivering Conservation Education: zookeepers demonstrate awareness of a variety of different ways of delivering educational messages and achieving behaviour change with visitors.
* Delivering Keeper Talks: zookeepers are able to devise and deliver keeper talks that enable the public to experience and learn about wildlife.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **4.3.1 Importance of Conservation Education** | **Define** conservation education, based on the EAZA Conservation Education standards**Give** a range of **examples** of conservation education work carried out by their zoo | **Describe** the EAZA Conservation Education Standards and how they apply to their institution**Explain** why conservation education is important for zoos | **Describe** relevant examples of how they apply the EAZA Conservation Education Standards within their daily work |
| **4.3.2 Methods for Delivering Conservation Education** | **List** key methods for delivering conservation education in zoos (eg. classroom teaching, guided tours, talks and presentations, signs, immersive theming, interactive exhibits, animal encounters, games, practical demonstrations and workshops)**Describe** the conservation education activities of their own institution | **Explain** how different methods are used with different audiences, types and size of collection**Deliver** conservation education activities effectively | **Collaborate** with educators to design new educational activities that deliver conservation education messaging and impact, in line with the EAZA standards**Select** and **apply** appropriate delivery methods for different audiencesConfidently **deliver** face to face engagement |
| **4.3.3 Delivering Keeper Talks** | **Deliver** talks to the public ensuring key learning points are delivered**Explain** why public talks are an important tool for educating the public and what the drawbacks of talks might be in relation to delivering educational messaging | **Devise** a plan for a keeper talk, including key learning outcomes and a description of how and where the talk should be delivered.**Describe** what needs to be considered when developing a new talk**Use** appropriate equipment for the delivery of public talks | **Develop** a talks programme, taking into account the range of messaging and experiences visitors might expect and the practicalities of delivery**Detail** the pros and cons of different technologies and approaches for delivering keeper talks |

**Resources**

* EAZA Conservation Education Standards – [**EAZA**](http://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA-Conservation-Education-Standards-2016-09.pdf)
* WAZA Conservation Strategy: *Committing to Conservation* – [**WAZA**](http://www.waza.org/files/webcontent/1.public_site/5.conservation/conservation_strategies/committing_to_conservation/WAZA%20Conservation%20Strategy%202015_Portrait.pdf)
* EU Zoos Directive Good Practices Document (chapter 2.3) –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)

**Paths to fulfilment**

* EAZA Academy course ‘Introduction to Zoo and Aquarium Management’  – [**EAZA**](http://www.eaza.net/academy/courses/)

**4.4 Applied Scientific Research**

*“EAZA has the high aspiration that every European zoo and aquarium will:*

* *make a significant contribution to ethical and highly effective research, particularly in the areas of biodiversity conservation and animal welfare;*
* *produce and use excellent science to increase knowledge which improves the quality of decision-making and management of collections, programmes and projects;*
* *engage in and foster scientific education, training and benefit sharing*.”

– EAZA Research Strategy – [**EAZA**](http://www.eaza.net/about-us/eazadocuments/)

Through their living collections, zoos and aquariums are uniquely placed to contribute to conservation-related research. Scientific research provides robust evidence of the impact of zoos and enables them to make evidence-based decisions to improve practice across many areas of their work, including animal welfare, visitor engagement and biodiversity conservation. Even if keepers are not directly tasked with conducting scientific research, they should understand how to apply its findings and know how and where to look for robust scientifically produced research to inform their work. Advanced keepers are expected to contribute to original research and share their findings with the wider sector, driving forwards zoo practice. Keepers should develop competencies relating scientific research in two key areas:

* Importance of Scientific Research: zookeepers understand the variety of disciplines that can contribute to the effective delivery of zoo’s work and can describe the importance of scientific research for keeper decision making.
* Research Practice: zookeepers demonstrate ability to conduct scientific research and contribute to a wider body of scientific knowledge about zoos and relevant to zoological collections.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **4.4.1 Importance of Scientific Research** | **Define** scientific research based on the EAZA Research Strategy**Describe** the basic contents of the EAZA Research Strategy**List** some of the scientific disciplines that are relevant to the work of zoos**Explain** briefly how scientific research benefits the work of the zoo and how zoo-based research can benefit the wider world | **Demonstrate** familiarity with the EAZA Research Strategy and briefly describe how it applies to their institution, including (if relevant) familiarity with their own institution’s research policy**Give examples** of zoo-based scientific research, explaining the research methods, results and application of each example | **Describe** relevant examples of how they have used the scientific research of others to develop their own practice as a keeper**Explain** the ethical implications and considerations when conducting zoo-based scientific research |
| **4.4.2 Research Practice** | Actively **participate** in a zoo-based scientific research project, for example collecting or inputting data**Describe** a number of different research methods applicable to collections-based zoo research | **Design** and **implement** simple research projects (e.g. with a small number of variables or indicators, using tried and tested research methods, in a well-known area of research**Analyse** simple results and summarise findings using simple reporting tools**List** publications where relevant research might be published | **Design** and **implement** more complex research projects (e.g. with a large number of variables or indicators, using novel experimental design, in a previously unresearched area)**Contribute** to the publication of peer-reviewed papers**Present** their findings through reports and conference presentations**Describe** the impact of their own research in their own institution |

**Resources**

* EAZA Research Standards – [**EAZA**](http://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA-Research-Standards-2003.pdf)
* EAZA Research Strategy – [**EAZA**](http://www.eaza.net/about-us/eazadocuments/)
* WAZA Conservation Strategy: *Committing to Conservation* – [**WAZA**](http://www.waza.org/files/webcontent/1.public_site/5.conservation/conservation_strategies/committing_to_conservation/WAZA%20Conservation%20Strategy%202015_Portrait.pdf)

**Paths to fulfilment**

* EAZA Academy course ‘Animal Behaviour and Applications to Husbandry’ – [**EAZA**](http://www.eaza.net/academy/courses/)

**4.5 Zoo Management**

*“The first priority of managing a zoo is to keep the business running: zoo management has to ensure that the business is run properly and that visitors are attracted to the zoo. They also have to ensure that visitors have a pleasant time so they will think of coming back again.”*
– The Modern Zoo: Foundations for Management and Development – [**EAZA**](http://www.eaza.net/assets/Uploads/images/Membership-docs-and-images/Zoo-Management-Manual-compressed.pdf)

Managing a zoo requires balancing the provision of excellent animal management and care with an optimal visitor experience and quality customer service. In addition to standard business management practices, zoos also need to consider the extra element of collection planning. Although high level management tasks are not part of a zookeeper’s role, their work is directly influenced by zoo management decisions. Zoo management should promote organisational unity through a shared mission, goals, and organisational values. The zookeeper position is a key part of a zoo’s staffing structure, and it is good practice for zookeepers to have an overview of the management that takes place at higher levels of their organisation. This becomes more important for zookeepers working at higher levels, who may be filling job roles with higher levels of responsibility and complexity. Within this topic there are six competencies:

* Sustainable Practice: zookeepers are aware of the importance of sustainability in the zoo and follow sustainable practices in their daily work.
* Financing of Zoos: zookeepers can describe the funding model of their own zoo and how this compares with a broader picture across Europe.
* Collection Planning: zookeepers can describe the role of different species in the collection and how this relates to regional collection planning
* Organisational Structure and Functions: zookeepers understand the wide range of functions that are required to run a zoo.
* Ethics: zookeepers can describe how ethics applies to their role and can apply ethics in their decision making relative to their role.
* International Organisations: zookeepers can demonstrate awareness of the different organisations that govern and support the modern role of the zoos, including EAZA, WAZA and country and discipline specific organisations relevant to their role. They demonstrate knowledge of relevant working groups, forums and conferences relevant to their organisation.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **4.5.1 Sustainable Practice** | **Define** the concept of sustainability**Explain** why sustainability is important in the zoo(If applicable) **comply** with institutional policies and practices as directed to in their daily work | **Describe** (if applicable) their institution’s policy on sustainability and examples of how their institution is implementing (or planning to implement) sustainable practicesIndependently and proactively **apply** institutional policies and practice on sustainability in daily works (eg. reduce usage of energy and water in daily works, manage waste, etc.)**Create** safe items for animal enrichment from waste products (e.g. empty feed containers, timber) | **Review** trends of sustainable practices and propose new sustainable initiatives to apply in their institution |
| **4.5.2 Financing of Zoos** | **Identify** the funding model of their own zoo (e.g. charity, state funded, etc.) | **Describe** different funding models that may be applied in other European zoos, and their implication**List** major sources of income and expenditure for their zoo (e.g. visitor entrance fees, animal feed, etc.) | **Describe** the impact of different funding models on the strategic functions of the zoo**Explain**the reasons for the relative allocation of sources of income and expenditure of their zoo |
| **4.5.3 Collection Planning** | **Demonstrate** familiarity with their institutional collection plan (ICP)**Describe** the role that species they work with frequently have in the ICP | **Explain** why collection planning is important for their institution | **Make recommendations** or **suggest** which species should be moved in and out of their institution according to the ICP**Demonstrate familiarity** with Regional Collection Plans (RCP) that apply to their work |
| **4.5.4 Organisational Structure and Functions** | **Describe** fully their own role as a zookeeper.**Outline** their institution’s organisational structure and responsibilities of staff members. | **Describe** how their role fits in a broader institutional context**Describe** fully the role of subordinates (if applicable) | **Conduct** a succession planning exercise and identify ways to address any issues identified |
| **4.5.5 Ethics** | **Describe** the content of ethics policies relevant to their work (e.g. institutional policies, EAZA code of ethics)**Apply** relevant ethics policies in their daily work | **Debate** the differences between ethics and animal welfare**Provide examples**of how they integrate ethics into every aspect of their daily work | **Evaluate** their work in an ethical context**Justify** their working practices in an ethical context**Anticipate** and solve ethical questions that arise in their work**Participate** in Ethics Committee (if applicable) |
| **4.5.6 International Organisations** | **Describe** different levels of organisations involved in governing and supporting modern zoos: national associations (e.g. BIAZA, SAZA), regional associations (e.g. EAZA, ZAA), and global associations (WAZA).**Name** the organisations of which their institution is a member**Identify** other organisations involved in supporting zookeepers e.g. national, regional, and international zookeeper organisations (ABWAK, AFSA, ICZ) | **Explain** the impact of external organisations on their institution and their work.**Join** appropriate organisations and groups to support their work**Identify** opportunities to contribute to international cooperation | Actively**participate** in relevant working groups, forums and conferences (e.g. husbandry workshops, taxon specific events, specialist topic events (enrichment, animal training etc.)**Report** and **share** their experiences with colleagues and subordinates proactively |

**Resources**

* *The Modern Zoo: Foundations for Management and Development* – [**EAZA**](http://www.eaza.net/assets/Uploads/images/Membership-docs-and-images/Zoo-Management-Manual-compressed.pdf)
* AZA-accredited Zoo and Aquarium Green Practices – [**AZA**](https://www.aza.org/green-practices)
* EAZA Code of Ethics – [**EAZA**](http://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA-Code-of-Ethics2015.pdf)
* WAZA Code of Ethics and Animal Welfare – [**WAZA**](http://www.waza.org/en/site/conservation/code-of-ethics-and-animal-welfare)

**Paths to fulfilment**

* EAZA Academy course ‘Introduction to Zoo and Aquarium Management’ – [**EAZA**](http://www.eaza.net/academy/courses/)
* EAZA Academy course ‘Zoo and Aquarium Collection Planning’ – [**EAZA**](http://www.eaza.net/academy/courses/)

**4.6 Legislation**

Zoos must comply with all relevant legislation to function successfully. All zoos will be subject to national legislation, and zoos within the European Union must also comply with relevant EU legislation. Although it is typically the job of senior zoo staff to ensure compliance at a strategic and organisational level, all zoo staff have a role to play in ensuring these plans are enacted in daily work. It is important for all zookeepers to have a basic understanding of the legislation that affects their work. Within this topic there are two competencies:

* Licensing Requirements: zookeepers can describe the licensing requirements and national legislation that applies to their zoo and how they should apply them in their work.
* EU Legislation: zookeepers can demonstrate understanding and (at advanced levels) complete necessary paperwork to comply with relevant EU legislation.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **4.6.1 Licensing Requirements** | Briefly **describe** national legislation and zoo licensing requirements that apply to their institution (e.g. Zoo Licensing Act in the UK)**Identify** consequences of not complying with applicable legislation**Show** that they comply with this legislation in their daily work by successfully completing assigned tasks | **Explain** more fully the parts of national legislation that are particularly relevant for their work (e.g. legislation relating to animal management)**Apply** their knowledge in novel situations arising in their work | Proactively **comply** with legislation requirements and **support** and **instruct** less experienced colleagues on legislation**Assist** in compiling and checking relevant records and paperwork to demonstrate compliance with legislation**Collaborate** with relevant authorities |
| **4.6.2 EU Legislation** | **Name** relevant EU legislation that applies to their institution. This includes (but is not limited to): the EU Zoos Directive, EU Birds Directive, EU Biodiversity Strategy, EU Regulation on Invasive Alien Species, EU Wildlife Trade Regulations, EU Animal Health Law**Identify** consequences of not complying with applicable legislation**Show** that they comply with this legislation in their daily work by successfully completing assigned tasks | **Describe** relevant EU legislation that applies to their institution and their work. This includes (but is not limited to): the EU Zoos Directive, EU Birds Directive, EU Biodiversity Strategy, EU Regulation on Invasive Alien Species, EU Wildlife Trade Regulations, EU Animal Health Law**Apply** their knowledge in novel situations arising in their work | Proactively **comply** with applicable EU legislation requirements and **support** and **instruct** less experienced colleagues on EU legislation**Assist** in compiling and checking relevant records and paperwork to demonstrate compliance with EU legislation |

**Resources**

* EU Zoos Directive – [**European Commission**](http://ec.europa.eu/environment/nature/legislation/zoos/index_en.htm)
* EU Zoos Directive Good Practices Document –[**European Commission**](http://ec.europa.eu/environment/nature/pdf/EU_Zoos_Directive_Good_Practices.pdf)
* EU Birds Directive – [**European Commission**](http://ec.europa.eu/environment/nature/legislation/birdsdirective./index_en.htm)
* EU Habitats Directive – [**European Commission**](http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm)
* EU Biodiversity Strategy – [**European Commission**](http://ec.europa.eu/environment/nature/biodiversity/strategy/index_en.htm)
* EU Regulation on Invasive Alien Species – [**European Commission**](http://ec.europa.eu/environment/nature/invasivealien/index_en.htm)
* EU Wildlife Trade Regulations – [**European Commission**](http://ec.europa.eu/environment/cites/legislation_en.htm)
* EU Animal Health Law – [**European Commission**](https://ec.europa.eu/food/animals/health/regulation_en)

**4.7 Marketing and Communication**

One of the most important pillars of successful zoo performance is marketing and communication. Most aspects of a zoo’s performance depend on successful marketing. The overall marketing umbrella covers advertising, public relations, promotions (in order to form a positive image and reputation for the zoo) and sales (the number of purchased tickets by zoo visitors). Marketing is a process by which a zoo is introduced and promoted to potential visitors and interested parties. Without marketing and communication, a zoo may offer the best services and have a large animal collection, but no potential visitors would know about it. Without marketing, visitors would not be attracted to the zoo.  Conversely, a zoo with a well-managed animal collection is essential for successful marketing.

Marketing and communication forms the image and reputation of a zoo. All zoo staff, including zookeepers play a very important role in maintaining the image and reputation of a zoo. The role of a zookeeper means that they will be interacting with visitors and interested parties during their daily work, which can be through planned and unplanned interactions, so understanding the best way to promote their institution in a positive and professional way is vital. Within this topic there are four competencies:

* Reputation of Zoos: zookeepers understand the importance of reputation, and work to maintain a positive reputation for their institution when communicating with visitors.
* Market Research and Feedback: zookeepers know how market research is used, including audience segmentation and visitor motivations, and how to collect feedback.
* Working with Donors and Supporters: zookeepers know the importance of supporters (including public support), what they want from the zoo, how to engage them.
* Media Interaction: zookeepers understand how their institution uses social media and traditional media, and different mediums of advertising zoos.

|  | **Zookeepers working at Competent level can:** | **Zookeepers working at Proficient level can:** | **Zookeepers working at Expert level can:** |
| --- | --- | --- | --- |
| **4.7.1 Reputation of Zoos** | **Explain** the importance of creating a good zoo image and reputation**Describe** why customer service is important in their role**Demonstrate familiarity** with anti-zoo organisations and their goals and actions against zoos**Describe** fully their institution’s rules for visitor behaviour and enforce them with appropriate support | **Maintain** created zoo image and reputation through professional work**Demonstrate** suitable ethical code of behaviour with anti-zoo organisations**Deal** with difficult issues (e.g. visitor conflicts and complaints) | Positively and proactively **engage** with colleagues, peers, visitors, and other interested parties to justify the existence of zoos and the work carried out by their institution |
| **4.7.2 Market Research and Feedback** | **Explain** the importance of market research**List** the major different audience groups who come to their zoo (for example, families, adults, school parties, foreign tourists)**Explain** why visitors are important for zoos, in relation to education and behaviour change | **Describe** how the different knowledge and interests that visitors have when they come to the zoo can affect how we educate and communicate with them**List** a variety of different audience types, based on their demographics, motivations and past experiences**Demonstrate familiarity** with materials distributed by their institution’s marketing staff**Summarise** this information for colleagues | (After zookeeper talks) **compile** data on what image visitors have of their institution**Analyse** whether data collected matches the expected responses**Demonstrate** how education messages and communication techniques should be adapted to meet the needs and motivations of different visitor groupingsClearly **link** different education methodologies and messages with different audience motivations**Create** and **implement** a plan to make relevant changes according to visitor feedback |
| **4.7.3 Working with Donors and Supporters** | **Explain** the importance of donors and stakeholders for a zoo**List** a variety of different interested parties (e.g. companies, non-governmental organisations, zoo partners, anti-zoo organisations, artists, potential volunteers, etc.) | **List** sponsorship procedures and **direct** interested parties to take appropriate action**Explain** to interested parties how to become a zoo donor**Identify** what interested parties want from the zoo | **Explain** the value of being a zoo donor to potential sponsors**Interpret** information about sponsorship to engage interested parties |
| **4.7.4 Media Interaction** | **Describe** the importance of media for publicly promoting their institution**Explain** what public image their institution wants to create through its use of media tools**List** a variety of (internal and external) media tools**Comply** with their organisation’s media policy and **follow** crisis communication protocols | **Communicate** professionally with media (as appropriate)**Apply** professional guidelines in their use of social media (Facebook, Instagram, etc.) to promote their institution (e.g. evaluate suitability of visual content, upload only good quality photos and briefly explain visual content to deliver an educational message) | **Maintain** created zoo image through professional work and appearance, when communicating with media (TV/radio)**Create** appropriate media content with guidance from marketing staff**Act** as an ambassador for their institution and promote the profession of zookeeper in various media channels |

**Resources**

* Internal institutional sponsorship procedures
* Internal guidelines on how to communicate with media and on social platforms (Communication & Marketing Department)
* *The Modern Zoo: Foundations for Management and Development* – [**EAZA**](http://www.eaza.net/assets/Uploads/images/Membership-docs-and-images/Zoo-Management-Manual-compressed.pdf)