

THE EU ZOO INQUIRY 2011

An evaluation of the implementation and enforcement of the EC Directive 1999/22, relating to the keeping of wild animals in zoos

HUNGARY



Written for the European coalition ENDCAP by the Born Free Foundation



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Country Report **HUNGARY**



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Title page photographs taken at Kecskemet Wildlife Garden, Abonyi Wildlife Park and Xantus Janos Zoo.

ABBREVIATIONS USED

APA	Hungarian Animal Protection Act 1998 XXVIII
APOS	Animal Protection Ordinance of Switzerland, Tierschutzverordnung 2008
CBD	Convention on Biodiversity (1992)
JD3/2001	Zoo law: Joint Decree n. 3/2001 (II.23) (amended by Joint Decree n. 13/2003 (IX.9))
D8/1999	Joint Decree <i>n.8/1999 (VIII.13) 'on the Keeping of Dangerous Animals'</i>
DEFRA	UK Department for Environment, Food and Rural Affairs
EAZA	European Association of Zoos and Aquaria
EEP	European Endangered Species Breeding Programme
ESB	European Studbook
EU.....	European Union
IAS	Invasive Alien Species
IUCN	International Union for Conservation of Nature
MASK	Hungarian Association of Zoos
NGO	Non-Governmental Organisation
OIE	World Organisation for Animal Health
SMZP	Standards of Modern Zoo Practice, Defra, 2004
WAZA	World Association of Zoos and Aquariums

TERMS USED

Animal: A multicellular organism of the Kingdom Animalia, including all mammals, birds, reptiles, amphibians, fish, and invertebrates.

Animal Sanctuary: A facility that rescues and provides shelter and care for animals that have been abused, injured, abandoned or are otherwise in need, where the welfare of each individual animal is the primary consideration in all sanctuary actions. In addition, the facility should enforce a non-breeding policy and should replace animals only by way of rescue, confiscation or donation.

Circus: An establishment, whether permanent, seasonal or temporary, where animals are kept or presented that are, or will be, used for the purposes of performing tricks or manoeuvres. Dolphinaria, zoos and aquaria are excluded.

Domesticated Animal: An animal of a species or breed that has been kept and selectively modified over a significant number of generations in captivity to enhance or eliminate genetic, morphological, physiological or behavioural characteristics, to the extent that such species or breed has become adapted to a life intimately associated with humans.

Environmental Quality: A measure of the condition of an enclosure environment relative to the requirements of the species being exhibited.

Ex situ: The conservation of components of biological diversity outside their natural habitats.

Free-roaming Animals: Animals that have been deliberately introduced to the zoo grounds and that are free to move throughout the zoo.

In situ: The conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings.

Not Listed: Species of animal that are not listed on the IUCN Red List of Threatened Species™, including species that have yet to be evaluated by the IUCN and domesticated animals.

Pest: An animal which has characteristics that are considered by humans as injurious or unwanted.

Species Holding: The presence of a species in a single enclosure. For example, two separate enclosures both exhibiting tigers would be classed as two *species holdings*; while a single enclosure exhibiting five species of birds would be classed as five *species holdings*.

Threatened Species: A species that is categorised by the IUCN Red List of Threatened Species™ as *Vulnerable*, *Endangered* or *Critically Endangered* (IUCN Red List website).

Wild Animal: An animal that is not normally or historically domesticated in Hungary.

Zoonoses: Those diseases and infections which are naturally transmitted between vertebrate animals and man.

Zoo: All permanent establishments where animals of wild species are kept for exhibition to the public for seven or more days in a year, with the exception of circuses, pet shops and establishments which Member States exempt from the requirements of the Directive on the grounds that they do not exhibit a significant number of animals or species (Directive 1999/22/EC).

SUMMARY

Six zoos in Hungary were assessed as part of a pan-European project to evaluate the effectiveness and level of implementation and enforcement of European Council Directive 1999/22/EC (relating to the keeping of wild animals in zoos) in European Union (EU) Member States. A total of 531 species (including subspecies where appropriate) and 844 *species holdings* were observed in 428 enclosures in the six zoos. Information was collected about a number of key aspects of each zoo's operation including: participation in conservation activities; public education; enclosure quality; public safety; and the welfare of the animals. These parameters were evaluated against the legal requirements of Directive 1999/22/EC, the Hungarian Animal Protection Act 1998 XXVIII ('APA') and the Joint Decree *n.3/2001 (II.23) KÖM-FVM-NKÖM-BM, 'Regulation on the Establishment, Operation and Maintenance of Zoos and Animal Shelters'* (as amended) and, where applicable, taking into account the requirements of Joint Decree *n.8/1999 (VIII.13) 'on the Keeping of Dangerous Animals'* and Government Decree *n.245/1998 (XII.31.) 'on the Tasks and Competences of the Local Notaries concerning Animal Protection and Registration'*. Key findings were:

- **The Directive has been accurately transposed into the Joint Decree n.3/2001 (II.23) 'Regulation on the Establishment, Operation and Maintenance of Zoos and Animal Shelters', which was subsequently amended by Joint Decree 13/2003 (IX.9) (referred to as 'JD3/2001'), enacted through the Animal Protection Act ('APA').** Article 3(3) of APA, defines zoos as *'a permanent facility established with the aim of raising awareness and education, presenting live animals in a scientific context and participation in the conservation of endangered species'*.
- **The Ministry of Rural Development is the Government Department responsible for the regulation of zoos in Hungary,** whilst the 10 regional offices of the Inspectorate for Environmental Protection, Nature and Water Management, as well as representatives of the Animal Health Authority, are responsible for the implementation and enforcement of the Directive, the APA, the JD3/2001 and other relevant legislation.
- **The zoo definition in JD3/2001 includes criteria that are in conflict with the Directive's definition caused by additional language which specifies that only those establishments that *'...participate in the conservation of endangered species'* (Article 3(3), APA) and *'serves to protect the environment and animals'* (Article 1, JD3/2001) should be recognised as a zoo and licensed accordingly.** This is an incorrect interpretation of the Directive and the situation may well have resulted in the mis-identification of establishments that should warrant a zoo licence under the Directive.
- **The results of this assessment highlight probable inconsistencies in the interpretation and application of JD3/2001.** Feedback from the Ministry of Rural Development indicates that the exact number of zoos in Hungary remains unknown.
- **There are no dolphinaria in Hungary.** Since 2002 the import of dolphins and sharks has been banned.
- **The findings call into question the quality, regularity, criteria and procedures relating to zoo inspections.** Many animals remain in substandard conditions; a number of zoo operations fail to meet the legal requirements; and penalties for non-compliance (under the APA, JD3/2001 and D8/1999) are not being applied.
- **Findings identified significant variability in zoo activities, and whilst EAZA affiliated zoos complied with more of the requirements, none of the zoos assessed complied with *all* of the requirements of APA, JD3/2001 and D8/1999.**

- **Despite the specific requirement for zoos in Hungary to contribute to the conservation of nationally and internationally protected species, in the main, they do not appear to be making a significant contribution in this regard.** The majority of species exhibited by the six selected zoos (91%) are of low conservation priority, but of the threatened species, 65% appeared to be involved in coordinated Species Management Programmes.
- **Species' information was not available for one quarter of the exhibited *species holdings* across the six zoos and, despite various public education activities undertaken by the EAZA affiliated zoos, concerns exist about the value of the animal shows and animal handling sessions** which do not comply with the requirements (Article 3(3), APA; Article 1(1), JD3/2001).
- **Notably, allowing the public to feed animals, unsupervised, with no control over which species are fed, in what quantity, or what type of food, could have serious implications for the health and welfare of the animals concerned.**
- All zoos assessed encourage the public to have direct contact with animals in an official capacity. However poor enclosure design and unlocked enclosures allows the public to have unsupervised contact with potentially dangerous animals. **Human/animal contact, supervised or unsupervised, may pose a serious risk to the health and welfare of the public and the animals involved, e.g. lion cub handling at Abonyi Wildlife Park.**
- **Poor levels of hygiene, particularly animals' drinking water, were observed in enclosures in some of the zoos.** This not only poses a risk to the health of the animals due to the potential build-up of harmful pathogens, but also to public health
- **On average, 59% of the evaluated enclosures met the minimum requirements set out in the Annex to JD3/2001.** Overall, the zoos involved appear to have given only limited consideration to the essential biological, spatial and behavioural needs of the species exhibited. Environmental enrichment was absent in 90% of enclosures.

RECOMMENDATIONS

The Ministry of Rural Development should take the necessary measures to:

- 1) Review Article 1 of the Joint Decree *n.3/2001 (II.23) KÖM-FVM-NKÖM-BM*, 'Regulation on the Establishment, Operation and Maintenance of Zoos and Animal Shelters' (as amended) and Article 3(3) of the Animal Protection Act to ensure both are compliant with Article 2 of the Directive. Ensure definitions and requirements of both laws have sufficient explanation and guidance to avoid possible misinterpretation by the authorities and zoo operators and establish a regularly updated zoo database to help monitor and regulate zoos.
- 2) Review the zoo inspection procedure and identify where improvements could be made to ensure all zoos (as defined) are licenced and inspected according to JD3/2001 and the Directive.
- 3) Ensure that all regional enforcement personnel and veterinarians involved in the inspection and regulation of zoos are equipped with relevant, regular training and have the skills necessary to provide for the care and welfare of wild animals in captivity.
- 4) Ensure, through effective enforcement, that all zoos (as defined by JD3/2001) abide by the requirements of national zoo law and meet or exceed the minimum standards contained in the Annex to JD3/2001, and that all existing available penalties (APA; Article 7, JD3/2001) are applied to zoos that fail to meet their legal obligations.
- 5) Ensure that appropriate measures are taken by zoos to stop the escape of animals into the natural environment and that regional enforcement personnel understand and, where necessary, take action to prevent the impacts that Invasive Alien Species (IAS) may have on the natural environment and any associated risks to public health and safety.
- 6) Review the species-specific minimum standards relating to the keeping of animals in captivity to ensure that they reflect reliable and scientifically-validated, best-practice standards of animal husbandry, including providing guidance and examples of environmental enrichment and environmental complexity, to encourage natural behaviour. The revision of these standards should be undertaken by an independent, scientific body.
- 7) Ensure that all zoo employees with responsibility for animals have the necessary training and experience in animal care and husbandry.
- 8) Consider commissioning an independent quality assurance assessment of the species conservation and educational activities in zoos to determine whether they can effectively meet the species conservation requirements of JD3/2001 and deliver measurable educational benefits.
- 9) Prohibit all public feeding of wild animals in zoos and warn the public of the associated risks to animal health and public safety. All animals must receive a nutritious diet, relevant to the needs of the species.
- 10) Prohibit all public contact with 'dangerous animals' (Annexes to D8/1999) and those known to harbour zoonoses. All other public contact is to be discouraged but, where it does take place, it must be supervised, controlled, limited, provide the animals with a significant rest period and must not be detrimental in any way to the welfare of the individual animals involved.
- 11) Ensure zoos keep and conserve predominantly nationally protected and European Threatened species rather than non-European species. All Threatened species, particularly European species kept by zoos, should be included in national and international cooperative Species Management Programmes.
- 12) Publish guidance, as necessary, to assist zoos, enforcement personnel, veterinarians, NGOs and other stakeholders to effectively and consistently interpret the requirements of APA and JD3/2001, specifically with regard to their participation in recognised peer-reviewed conservation and education programmes.
- 13) Encourage all zoos in Hungary to join EAZA. Through effective enforcement and guidance, assist all zoos in Hungary to meet their legal obligations and the criteria necessary to become an accredited member of this international zoo association. Zoos that fail to attain accreditation should consider closing.

THE EU ZOO INQUIRY 2011

Introduction and methodology



INTRODUCTION

Council Directive 1999/22/EC ('the Directive'), relating to the keeping of wild animals in zoos, was adopted in 1999. The Directive came into force in April 2002, when the EU comprised 15 EU Member States. Since then, all countries that are Members of the EU have been obliged to transpose the requirements of the Directive into national legislation and, from April 2005 (2007 in the case of Bulgaria and Romania), fully implement and enforce its requirements. The European Commission has responsibility for overseeing and ensuring the effective implementation of the Directive by Member States and for taking legal action in the event of non-compliance.

The Directive provides a framework for Member State legislation, through the licensing and inspection of zoos, to strengthen the role of zoos in the conservation of biodiversity and the exchange of information to promote the protection and conservation of wild animal species. This is in accordance with the Community's obligation to adopt measures for *ex situ* conservation under Article 9 of the *Convention on Biological Diversity* (1992) (CBD website). Member States are also required to adopt further measures that include: the provision of adequate accommodation for zoo animals that aims to satisfy their biological needs; species-specific enrichment of enclosures; a high standard of animal husbandry; a programme of preventative and curative veterinary care and nutrition; and to prevent the escape of animals and the intrusion of outside pests and vermin.

Although the Directive has been transposed in all Member States, national laws often lack detailed provisions relating to educational and scientific activities, guidance on adequate animal care, licensing and inspection procedures, as well as clear strategies for dealing with animals in the event of zoo closure. The Directive's requirements themselves are relatively ambiguous and allow for inconsistencies in interpretation. Competent Authorities in Member States have not been provided with comprehensive guidance or training to facilitate the adoption of the provisions of the Directive and, as a consequence, many are failing to ensure these provisions are fully applied by zoos (Eurogroup for Animals, 2008; ENDCAP, 2009).

Estimates place the total number of licensed zoos in the EU to be at least 3,500. However, there are thought to be hundreds of unlicensed and unregulated zoological collections that have yet to be identified and licensed by the Competent Authorities. No more than 8% of the total number of zoos in Europe are members of the European Association of Zoos and Aquaria (EAZA) which therefore should not be regarded as a representative of zoos in the European Community.

Preliminary investigations revealed that many zoos in the EU are substandard and are failing to comply with the Directive. Furthermore, EU Member States are inconsistent in their application of the Directive but little effort has been made to identify and address the reasons behind this. The project aims to assess the current situation in the majority of Member States, identify any issues requiring attention and provide recommendations with regard to how implementation can be improved.

METHODOLOGY

Between March and December 2009, an assessment of 200 zoological collections in 20 EU Member States was made as part of an evaluation of the level of implementation and enforcement of European Council Directive 1999/22/EC. The project included an evaluation of national laws pertaining to zoos in each EU Member State compared to the requirements of the Directive, an analysis of the implementation and enforcement of those laws and an assessment of the status and performance of randomly-selected zoos in each Member State.

A Zoo Assessment Protocol was developed and tested to ensure consistency in data collection. For certain Member States (England, France, Germany, Republic of Ireland, Italy, Malta and Portugal) individual, locally-fluent investigators were contracted to undertake the work. In other Member States (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania and Slovenia) a single investigator from the UK collected and analysed the data.

Implementation and enforcement of Member State legislation

Data were collected and evaluated through:

- Completion of a questionnaire by the Competent Authorities in each Member State
- Informal interviews with the Competent Authority
- Review of national zoo legislation

Status and performance of zoos

Using the definition of a zoo set out in the Directive^{*}, a variety of zoological collections was assessed including: traditional zoos, safari parks, aquaria, dolphinariums, aviaries and terraria. In some EU countries, national legislation does not use this definition, which can lead to inconsistencies in application. Where this is the case, any variance was noted but zoos, *as defined by the Directive*, were nevertheless included in the project to maintain consistency.

Zoos were selected for evaluation using two methods: A. For those Member States with large numbers of zoos, 25 zoos were randomly-selected (France, Germany, Italy and England). B. For those Member States (n = 16) with a small number of zoos, between three and ten collections were selected, dependent upon the total number of zoos in the country and their accessibility. Zoos were identified by referring to Government records (if these exist), using online resources, published media and information from local NGOs.

Data were collected using a video camera which recorded a complete overview of the structure and content of each zoo, including: all enclosures; all visible animals; signage; public education facilities; any talks, shows or interactive animal handling sessions; public/animal contact and security issues. Additional information was collected from the zoo website and literature that was, occasionally, provided by the zoos themselves. Data collection was undertaken without the prior knowledge of the zoo management and therefore only areas accessible to the general public were recorded. Thus, for example, off-show areas, food preparation and storage rooms, quarantine and veterinary facilities were not included.

Data were analysed using a Zoo Assessment Protocol that had been developed and refined during an assessment of zoos in Spain (InfoZoos 2006 - 2008) and which took into consideration the requirements of the Directive, national zoo law and the *EAZA Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria* (available on the EAZA website and referred to in the preamble of the Directive). Information and guidance was also drawn from the UK Standards of Modern Zoo Practice 2004 (SMZP) and Zoos Forum Handbook. The Zoo Assessment Protocol was adapted for each Member State dependent upon the specific requirements of national law.

^{*} '...all permanent establishments where animals of wild species are kept for exhibition to the public for seven or more days a year...' (Article 2 European Council Directive 1999/22/EC)

The analysis was separated into the following sections:

- A. General Zoo Information.
- B. Conservation Commitment.
- C. Public Education.
- D. Evaluation of Animal Enclosures.
- E. Animal Welfare Assessment.

Further details of the assessment methodology are available at www.euzoinquiry.eu

All zoos included in the evaluation were asked to complete a Standard Zoo Questionnaire that asked for details of their participation in: European coordinated captive breeding programmes; *in situ* conservation projects; public education; and current research activities.

The Questionnaire also sought information relating to levels of staff training, veterinary care and programmes to provide environmental enrichment and appropriate nutrition.

Resources dictated that the EU Zoo Inquiry 2011 included an assessment of the following EU Member States: **Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Estonia, France, Germany, Greece, Hungary, Republic of Ireland, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovenia and United Kingdom (England only).**

The remaining seven Member States were not included in this zoo assessment (March – December 2009). However a further report focusing on zoo regulation in **Spain** will be published in 2012.

HUNGARY

Country Report



INTRODUCTION

Hungary became a Member of the European Union (EU) in May 2004. By April 2005, Hungary, along with 24 other EU Member States, was required to have transposed and implemented the requirements of the European Council Directive 1999/22/EC into its national law. The Directive had been transposed into national legislation by means of the Animal Protection Act 1998 XXVIII ('APA') and specifically through the Joint Decree *n.3/2001 (II.23) KÖM-FVM-NKÖM-BM*, 'Regulation on the Establishment, Operation and Maintenance of Zoos and Animal Shelters', which has since been amended by Joint Decree *n.13/2003 (IX.9) KvVM-FVM-NKÖM-BM*. **From this point on, all references to the national zoo law, as amended, will be referred to as 'JD3/2001'.**

Where previously zoo regulation used to be coordinated through three separate Ministries (Ministry of Environment and Water, Ministry of Cultural Heritage and the Ministry of Interior (Article 1, JD3/2001)), central administration for all matters concerning environmental protection and rural development, including zoo regulation, is now the responsibility of the Ministry of Rural Development (www.kvvm.hu). Although zoos are licensed, administered and regulated through the 10 regional offices of the Inspectorate for Environmental Protection, Nature and Water Management (Standard Member State Questionnaire) (Article 2(2), JD3/2001), animal welfare checks are made by the Animal Health Authority (Article 43 and 44, APA).

As an important component of this investigation, the Competent Authority was asked to complete a Standard Member State Questionnaire. Information received from the then Ministry of Environment (Ministry of Environment, pers. comm., 16th October 2009), was reaffirmed by the new Hungarian Government (Permanent Representation of Hungary to the EU, pers. comm., 21st June 2010), and has been included throughout this report.

The APA provides a legal framework for the protection and welfare of animals under the control of humans (Chapter I, Article 1, APA), and aims to facilitate the protection of wildlife specimens, establish a 'duty of care' for (and guarantee the humane treatment of) animals and to define rules governing the protection of animals (Articles 3(8) and 4, APA). Chapter II lists these general rules whilst Chapter VI, Article 39, states the specific requirements for zoos where a 'zoo' is defined as '*a permanent facility established with the aim of raising awareness and education, presenting live animals in a scientific context and participation in the conservation of endangered species*' (Article 3(3), APA). In addition to the general rules for the protection of animals (included in Chapter II, APA), zoos are also required to comply with further regulations enacted through Article 49 of the APA. Article 49(4)b, APA, enacts the zoo regulation, the JD3/2001, as well as the Joint Decree *n.8/1999 (VIII.13) KÖM-FVM-NKÖM-BM* 'on the Keeping of Dangerous Animals' ('D8/1999'). Article 49(3)a, APA enacts the Government Decree *n.244/1998 (XII.31.)* 'on the Animal Protection Fees and Fines' and 49(3)b APA enacts the Government Decree *n.245/1998 (XII.31.)* 'on the Tasks and Competences of the Local Notaries concerning Animal Protection and Registration'.

The JD3/2001, specific to the '*establishment, operation and maintenance of zoos and animal shelters*', is intended to comply with the requirements of the Directive (Article 17, JD3/2001). Article 2 specifies the legal requirements. Articles 3, 6 and 8 detail the licence application procedure, the information required and the competent authorities involved. Article 4 specifies the professional qualifications and experience expected of zoo owners, directors and animal keepers. Article 5 refers to the Annex to JD3/2001, detailing minimum standards for the keeping of commonly kept species of animals which zoos are expected to feature and any exemptions to those rules. Articles 7 and 14 concern rules and procedures (and the reasons and outcomes) should a licence need to be revoked. Article 9 prescribes the minimum zoo inspection details.

In Hungary, an establishment wishing to operate as a zoo (as defined in 'Zoo Licensing Requirements' below) must apply for an operating licence from the regional office of the Inspectorate for Environmental Protection, Nature and Water Management (Standard Member State Questionnaire) (Article 8, JD3/2001). The application must include; amongst other information: a description of the zoo; its location; an inventory of the species to be kept, together with the "*Breeding Plan*"

(containing details of location and treatment of offspring and licenses for any artificial breeding of protected species); a zoo 'Operating Plan' detailing, amongst other things, seasonal public opening hours; an 'Animal Plan', including details on animal care and husbandry, conservation programmes and disease prevention; an 'Action Plan', detailing risk assessment and procedures in the event of an escaped animal; a 'Liquidation Plan', should the zoo need to or be required to close; and proof of operator's experience and expertise; and details of a veterinarian contracted to the zoo (Article 3, JD3/2001; Chapter VI, Article 39(2 - 3), APA). A zoo licence may be issued once the local licensing authority is satisfied with the details provided in the application and once an initial inspection of the zoo by the Inspectorate and local veterinary authorities has confirmed compliance with the APA and JD3/2001 (Article 6, JD3/2001). According to the Standard Member State Questionnaire, the licence is valid up to four years and regular inspections are undertaken at the discretion of the regional authorities. Zoo inspections are required at least every four years (Article 9, JD3/2001). All zoos in Hungary are required to comply with all licence conditions, as agreed in the various 'plans', and the requirements prescribed by JD3/2001 (as amended). Any zoo identified as not complying may be required to remove certain species (Article 7(3), JD3/2001), or may have its licence withdrawn and be required to close (Articles 7 and 14, JD3/2001).

At the time of this investigation, the Ministry of Rural Development stated that there were '14 or 15' zoos in Hungary, of which 10 were reportedly local government-owned. The Ministry reports that no list or database of zoos is maintained (Standard Member State Questionnaire).

Zoo licensing requirements

In Hungary, a zoo is defined as a "permanent establishment which serves to protect the environment and animals, where species of animals are displayed to the public for 7 or more days in a year" (Article 1(1), JD3/2001). Furthermore, as mentioned above, the APA also defines a 'zoo' as 'a permanent facility established with the aim of raising awareness and education, presenting live animals in a scientific context and participation in the conservation of endangered species' (Chapter 1, Article 3(3), APA). Both are consistent with the overall aims of the Directive. However, the Hungarian 'zoo' definition is more specific regarding the objectives of the facility rather than specifying criteria relating to the minimum numbers of species or individual animals required (Standard Member State Questionnaire). JD3/2001 is applicable to both 'zoos' (as defined) and 'animal shelters' (defined in Chapter 1, Article 3(6), APA), requirements for the latter are covered by Articles 10 to 12 of the JD3/2001.

Facilities exempt under JD3/2001, and therefore establishments not regarded as or licensed as 'zoos', include circuses, farms and other facilities exclusively comprising of domesticated animals (which includes ostrich and emu), *in situ* facilities that keep and breed species of native wild animals for conservation purposes that are maintained by the national park authorities, and pet shops. These exempted facilities are regulated by other legislation. In addition, the last dolphinarium in Hungary was closed in 1992 and since 2002, the import of dolphins and sharks has been banned in the country (Permanent Representation of Hungary to the EU, pers. comm., 16th February 2012). Dolphinariums are therefore not regulated by JD3/2001 (Standard Member State Questionnaire).

Zoos in Hungary must not only comply with the general requirements of APA and the specific requirements of JD3/2001 and D8/1999 but also ensure they are compliant with any conditions attached to their licence in relation to their 'Breeding Plan', 'Operating Plan', 'Animal Plan', 'Action Plan' and 'Liquidation Plan', which must be submitted each year to the licensing authority (Article 6(4), JD3/2001 (as amended)).

Conservation

Both the APA and JD3/2001 describe zoos as permanent facilities that seek to conserve biodiversity and the natural environment, through education, the dissemination of knowledge and the protection and conservation of endangered species. Article 1(2) of JD3/2001 states:

'The zoo must participate in scientific research and species conservation, specifically by participating in the protection of nationally or internationally-recognised protected species, as well as to perform the function of a rescue centre for native species. Zoos may not engage in commercial activities.'

(Article 1(2) of JD3/2001)

On application for an operating licence, the applicant must provide the authorities with a detailed inventory of the animal species the zoo intends to exhibit, species that are to be included in the zoo's 'Breeding Plan' and intentions for the location and treatment of offspring. Appendices to Government Decree 13/2001 identify and list 'Protected Species' (Appendix 2); 'Strictly Protected Species' (Appendix 4) and 'European Community Nature Conservation - Protected Species' (Appendix 8). A 'breeding' licence must be acquired from the State department responsible for environmental protection (Article 2(2), JD3/2001), which specifies additional requirements under Government Decree n.245/1998 (XII.31.) 'on the Tasks and Competences of the Local Notaries concerning Animal Protection and Registration' (Articles 3(2)cf and 7(3) of JD3/2001).

No further requirements, explanation or guidance is provided by the Competent Authorities to facilitate these legal requirements and assist zoo operators to achieve their full, and expected, potential in the conservation of biodiversity (Standard Member State Questionnaire). Furthermore, there is no indication that the authorities undertake an evaluation of zoo performance to assess the 'success' of the species conservation activities.

Education

Together with a commitment to the conservation of biodiversity, zoos in Hungary are obliged to raise awareness, educate and disseminate information and knowledge about the species exhibited, their natural environment and advocate their protection (Article 1(1), JD3/2001; Article 3(3), APA).

Furthermore, on application for an operating licence, the applicant must provide the authorities with details about the professional qualifications and experience of zoo staff (Article 1(3) and 4, JD3/2001; Article 39(2), APA).

No further requirements, explanation or guidance are provided by the Competent Authorities to help stakeholders meet these legal requirements and there is no indication that the authorities undertake an evaluation of educational performance of the zoo.

Animal welfare provisions

The APA protects the welfare of animals in zoos (Chapter VI). Its general provisions specify that animals must be provided with their physical and psychological needs, regardless of age, sex and condition and that regular checks, at least once a day, should be made by the person responsible for the animal's care (Articles 3(8), APA). Articles 4 and 5 in particular, states that the person responsible for the animal must ensure that *'the living conditions for the animal are according to its species, gender and age, its biological, reproductive, ethological and health requirements, and including appropriate housing, nutrition, space, veterinary care, hygiene, rest, care, training, education and security'*.

Articles 6 and 7 of the APA list all prohibited activities involving animals. These include torture, fighting, forced feeding, maintaining animals in substandard conditions (including during transportation) and forcing animals to perform unnatural or self-harmful activities and behaviours. Interestingly, Article 6(2) exempts geese and Article 6(3) exempts circuses from this general rule.

Furthermore, JD3/2001 includes requirements applicable to zoos to ensure animals are provided conditions which meet their fundamental requirements as well as their species-specific needs. Article 1(3), JD3/2001 imposes a general "duty of care" on the zoos; Article 3 identifies specific animal care and husbandry requirements to ensure the provision of biological needs and measures to encourage natural behaviour. Article 4 specifies that persons responsible for the management and care of animals should have an appropriate professional qualification, proven experience of working in a zoo and knowledge of animal care. It also requires that an appropriate number of keepers are employed relative to the numbers and kinds of species of animals in the zoo.

Article 5 of JD3/2001 requires zoos to keep their animals, both individuals and social groups, in housing conditions that at least meet the minimum species-specific standards set out in the Annex to JD3/2001. The standards specify

minimum space requirements in relation to the species and the number of individuals, as well as some indication of what may constitute suitable environmental enrichment. The Standards are reportedly based on Swiss zoo legislation and expert opinion (Standards Member State Questionnaire). Animals kept for feeding purposes, those that are temporarily housed (up to 12 months), animals held in quarantine and those receiving medical treatment (up to 90 days), are exempt from these Standards (Article 5(2), JD3/2001).

Consistent with the requirements of Article 3 of the Directive, JD3/2001 not only requires zoo operators to provide detailed information about animal care and husbandry, nutrition programmes, preventative and curative veterinary care, measures to prevent the escape of animals and the intrusion of external pets and parasites, but details on the zoo's species conservation programmes and any measures taken to maintain high standards in hygiene are required on application for a zoo licence. This must be approved before a licence is granted. Ongoing compliance is assessed during the regular zoo inspections (Article 6, JD3/2001). Should substandard conditions be identified, the zoo may be instructed to close, either temporarily until requirements are met (Article 7(2), JD3/2001), or permanently in which case the licence is withdrawn (Article 7(4), JD3/2001).

As specified in Article 3(5) of the Directive, there is a requirement for zoos in Hungary to maintain a stocklist of animals kept and keep records of mortalities, acquisitions, etc., including those allocated a special licence. This is provided to the Licensing Authority on an annual basis (Articles 3(2)cg and 6(4), JD3/2001) (Standard Member State Questionnaire).

The Zoo Investigation

A total of six zoos in Hungary were selected. Data was collected at the following zoos during August 2009 (Fig. 1)

- Abonyi Wildlife Park
- Budapest Zoo
- Xantus Janos Zoo
- Kecskemet Wildlife Garden
- Pecs Zoo
- Veszprem Zoo

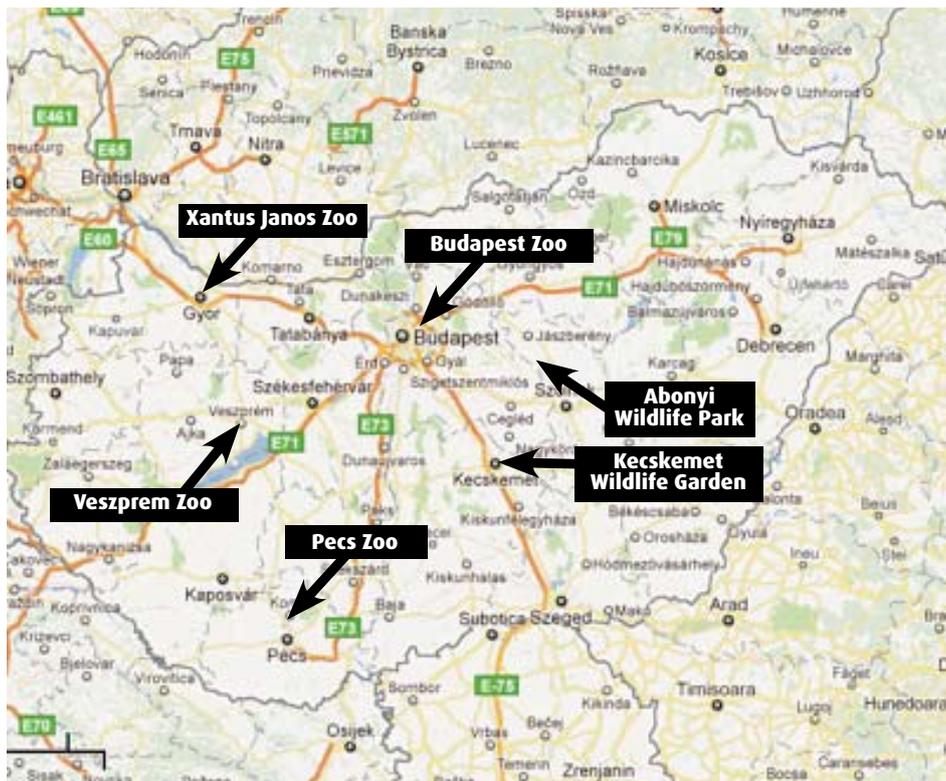


Figure 1 Geographical locations of the six zoos visited in Hungary.

RESULTS AND INTERPRETATION

GENERAL ZOO INFORMATION

Overview

The investigation evaluated six zoos in Hungary. Five of the six (Budapest Zoo, Xantus Janos Zoo, Kecskemet Wildlife Garden, Pecs Zoo and Veszprem Zoo) are publicly-owned by the local Municipality, whilst Abonyi Wildlife Park is privately-owned. All six appear to meet the definition of a 'zoo', as set out in Article 1 of JD3/2001 (and Article 2 of the Directive). Entrance fees per adult ranged from €3.16 (Pecs Zoo) to €7.00 (Budapest Zoo).

Of the six zoos evaluated, five are members of a zoo association. Budapest Zoo, Xantus Janos Zoo, Kecskemet Wildlife Garden, Pecs Zoo and Veszprem Zoo are Members of the Hungarian Association of Zoos (MASK). Veszprem Zoo and Budapest Zoo are **also** Members of the *European Association of Zoos and Aquaria* (EAZA), whilst Xantus Janos Zoo is a Candidate Member of EAZA. Budapest Zoo is also a Member of the *World Association of Zoos and Aquaria* (WAZA). In addition, Budapest Zoo is a Member of the Hungarian Association of Botanical Gardens and Arboretums, the Hungarian Ornithological and Nature Conservation Association and the International Association of Zoo Educators (IZE) (Budapest Zoo website).

Primarily entities established to serve the interests of their membership, MASK has a total membership of 11 zoos in Hungary (MASK website) and EAZA has a total membership of 264 zoos in the EU (EAZA website). Without the benefit of a centralised zoo database in Hungary, it is not known what proportion of the total number of zoos in the country are Members of MASK, although it is believed to be the majority. EAZA Members, on the other hand, only represent a small minority of the total number of regional zoos (representing no more than 8% of an estimated total of 3,500 zoos in the EU). Member zoos in both Associations are expected to do more than comply with national legislation. MASK aims to exchange information between Member zoos, raise awareness of the biological and conservation activities of the Association co-ordinate fundraising to help improve antiquated zoo infrastructure and raise standards in zoo management and animal care (MASK website). Members of MASK receive funding from Hungary's Ministry of Culture to help with their development (MASK website). EAZA member zoos are expected to comply with the *EAZA Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria*.

A total of 531 species (including subspecies where appropriate) and 844 species holdings were identified in 428 enclosures in the six zoos. A total of 24 *species holdings* could not be identified (see online Methodology).

Despite all six zoos being sent the Standard Zoo Questionnaire, which provides an opportunity for each zoo to describe, amongst other things, its conservation and education activities, none of the zoos completed and returned the Questionnaire. Therefore, information concerning their performance and activities was gathered from published materials produced by the zoos, EAZA and information contained on zoo websites.

Prevention of animal escapes

In Hungary, all zoo operating licence applicants must provide the Competent Authorities with an '*Animal Plan*' (Article 3(2)c, JD3/2001), which must include details on proposed zoo management and operation, and which:

- '*guarantees measures taken to prevent the escape of an animal and to avoid potential ecological threats to native fauna and flora;*'

(Article 3(2) cd, JD3/2001)

Zoos must also submit an '*Action Plan*', which details risk assessment relating to animal escape and procedure in the event of an escape (Article 3(2)d, JD3/2001). Furthermore, establishments that keep 'dangerous' animals (as indicated by D8/1999) and 'protected' animals (as regulated by Government Decree n.245/1998 (XII.31)) must take the sufficient measures to prevent their escape.

Only when the content of the 'Animal Plan' and 'Action Plan' (in addition to other required information) are approved by the Competent Authorities is the applicant zoo issued an operating licence (Article 6(3), JD3/2001). Zoo inspections include an assessment of these conditions (Article 9, JD3/2001) and, in the event of non-compliance, the zoo will be instructed to rectify the issues or face closure (Article 7, JD3/2001).

Of the six zoos included in the zoo assessment, four appeared to have a perimeter fence or zoo boundary that was capable of preventing either the escape of an animal from the zoo or the intrusion of native wildlife. The boundary of two of the zoos, one of which exhibited free-roaming DAISIE-listed Invasive Alien Species (IAS), peafowl (*Pavo cristatus*), appeared to be of an insufficient height and design to prevent an animal from escaping or entering the zoo grounds. Free-roaming DAISIE-listed IAS species were observed in three out of six zoos, which included peafowl (*P. cristatus*) and helmeted guinea fowl (*Numida meleagris*) (DAISIE website).

Ill-designed enclosures, poorly maintained fencing and unlocked enclosures were frequently observed, potentially permitting both public access and animal escape. In three of the zoos, unlocked enclosures were observed containing: common quail (*Coturnix coturnix*), chinchilla (*Chinchilla chinchilla*), red deer (*Cervus elaphus*), rufous night heron (*Nycticorax caledonicus*), glossy ibis (*Plegadis falcinellus*), pied avocet (*Recurvirostra avosetta*), emu (*Dromaius novaehollandiae*) and a nationally-listed IAS species, the northern raccoon (*Procyon lotor*) (DAISIE website). In numerous cases, enclosures either did not have fencing, or it was not of sufficient height, design or condition to prevent an animal from escaping. For example, near the exit to Budapest Zoo a pond containing common sliders (*Trachemys scripta*), an IAS species and also a known carrier of Salmonella (Nagano *et al.*, 2006), had no visible barrier to prevent the escape of the animals. Furthermore, at Xantus Janos Zoo, a black-tailed prairie dog (*Myocastor coypus*), also an IAS species, was observed in the process of escaping from its enclosure through a hole in the enclosure fencing. Additionally, media archives report on other wild animals escaping from their enclosures in Hungarian zoos (for example, see www.pesticide.huwebsite, 2008).

Figure 2

Budapest Zoo.

The lack of a barrier around a pond containing common slider (*Trachemys scripta*), a known carrier of zoonoses, not only permitted members of the public to remove the freshwater turtles from the water but failed to prevent the escape of this DAISIE-listed Invasive Alien Species into the natural environment.



Public placed at risk of injury and disease transmission

In Hungary, a special permit is required for the keeping of dangerous animals (Articles 20 and 49(4)b, APA; Article 3(2) cf, JD3/2001). This additional requirement also applies to zoos (Article 5(6), JD3/2001; Article 2(3), D8/1999), which are required to inform their local Licensing Authority, through submission of their 'Animal Plan' (Article 3(2)c, JD3/2011). Joint Decree *n.8/1999 (VIII.13) KÖM-FVM-NKÖM-BM 'on the Keeping of Dangerous Animals'* ('D8/1999') specifies the conditions required relating to a permit, whilst the Annexes to D8/1999 identify and list dangerous animal species and specify further species-specific minimum housing and security measures.

Requirements for the keeping of dangerous animals include the need for constant supervision in public areas, stringent measures to prevent animal escape, additional housing and security requirements, and the need for the animal's

owner/keeper to be sufficiently qualified and knowledgeable in animal husbandry and care (D8/1999). Should a zoo be found in breach of these requirements it could face closure (Article 7(3), JD3/2001).

Public contact with potentially dangerous wild animals was possible in all six zoos, and in some cases openly encouraged. This included supervised, planned animal contact with lion cubs (*Panthera leo*) at Abonyi Wildlife Park (Abonyi Wildlife Park website; You Tube Video, 2009 (www.youtube.com/watch?v=4jedmt10NCw)), 'snake petting' and 'insect petting' at Budapest Zoo (Budapest Zoo website), a lemur walk-through enclosure at Veszprem Zoo and what appeared to be contact with tapir (*Tapirus terrestris*), chameleons and ring-tailed lemurs (*Lemur catta*) at Xantus Janos Zoo (Xantus Janos Zoo website and www.kisafold.hu website), but there was also the opportunity for unsupervised, unplanned contact between the public and wild animals. Due to poorly-designed, maintained and, in some cases, unlocked enclosures, the public were able to have contact with animals in 38% of the 180 randomly assessed enclosures (Sections D and E of the Methodology), with 23% (n=16) of those enclosures exhibiting dangerous Category 1 'Greater Risk' Hazardous Animals, as categorised by SMZP and in the Annex to D8/1999. This included species such as the plains zebra (*Equus quagga*), hippopotamus (*Hippopotamus amphibius*), wild boar (*Sus scrofa*), gelada baboon (*Theropithecus gelada*), Bactrian camel (*Camel bactrianus*), ostrich (*Struthio camelus*) and snowy owl (*Bubo scandiaca*).

Figure 3

Pecs Zoo.

In some cases, poorly-designed enclosures and the lack of stand-off barriers allowed for physical contact between the public and the animals, potentially placing both at risk. The plains zebra (*Equus quagga*) is categorised as a dangerous animal (SMZP ; D8/1999).



Numerous unlocked enclosures were observed during the investigation. Notably, two contained potentially dangerous species: emu (*Dromaius novaehollandiae*) and the northern raccoon (*Procyon lotor*) and, due to a lack of protective fencing at Budapest Zoo, people could touch - and even pick up - common slider (*Trachemys scripta*). The only observed signage warning the public of the risks of direct contact in any of the six zoos was in the aquarium at Budapest Zoo, which stipulated that the tails of the rays were not to be touched.

Five of the zoos appeared to allow their visitors the opportunity to feed their animals including both domestic (e.g. goats, guinea pigs, etc.) and wild species. Only in one case was animal feeding seen to be supervised (ring-tailed lemur (*Lemur catta*) at Xantus Janos Zoo), but there were numerous instances when potentially dangerous wild animals were observed being fed by zoo visitors without supervision including ostrich (*Struthio camelus*), plains zebra (*Equus quagga*) and red deer (*Cervus elaphus*) in Abonyi Wildlife Park; Bactrian camel (*Camel bactrianus*) at Budapest Zoo; pygmy hippopotamus (*Choeropsis liberiensis*), giraffe (*Giraffa camelopardalis*), squirrel monkeys (*Saimiri sciureus*), Grant's zebra (*Equus quagga boehmi*) and eland (*Tragelaphus oryx*) at Xantos Janos Zoo; and capybara (*Hydrochoerus hydrochaeris*) and wild boar (*Sus scrofa*) at Veszprem Zoo. Furthermore, there was no apparent control or instruction to ensure only appropriate foods were fed to the animals, although vending machines selling pelleted-food were observed in both Budapest Zoo and Xantos Janos Zoo and 'animal food' by the bag was on sale at Abonyi Wildlife Park. A notable lack of public stand-off barriers and poorly-maintained enclosure fencing permitted easy access to the animals. Despite the requirement that animals under human control are to be provided appropriate nutrition (APA),

no reference could be found in either JD3/2001 or D8/1999 governing public feeding of animals in order to protect the health and welfare of both the animals and the public.

Signage informing the public about the risks of direct contact with the animals, animal feeding, or the potential harm both could cause the animals, was lacking in all zoos and there was limited evidence that preventative measures were being taken to reduce the potential risks of injury and disease transmission. Only Pecs Zoo appeared to have signage prohibiting the feeding of animals.

Figure 4

Budapest Zoo.

A member of the public is encouraged to stroke a two-toed sloth (*Choloepus didactylus*). This is a Category 1 'Greater Risk' hazardous animal (SMZP).



CONSERVATION

The conservation of biodiversity is the main objective of the Directive and it requires zoos in the EU to participate in at least one of four possible conservation activities (Article 3 of the Directive). This EU-wide requirement has been effectively transposed in Hungary by both the APA and the JD3/2001, which require zoos to promote and participate in species and nature conservation programmes (Article 3(3) APA; Article 1(2) JD3/2001). Unlike the Directive, however, these objectives have been incorporated into the criteria within the zoo definition (Article 1(1) JD3/2001) that in effect differentiates between those zoos that participate in conservation initiatives and those that do not take part in such activities. This could impede the Directive's objectives.

Hungarian zoos are required to demonstrate a commitment to scientific research and the conservation of nature and species, particularly 'endangered species' - those protected through national and international agreements (Article 3(3), APA; Article 1(2), JD3/2001; Appendices to D13/2001). Details of a zoo's conservation and species management programmes should be incorporated in the zoo's 'Breeding Plan', which is provided to the Licensing Authorities (Article 6, JD3/2001). In order to keep a 'protected species' in Hungary, an additional permit is required, regulated by Government Decree *n.245/1998 (XII.31.)*, which sets out requirements relating to the conservation and appropriate care of such species.

The findings from this investigation indicate that Hungarian zoos are making only a minimal commitment to the conservation of biodiversity, particularly with regard to the protection of Threatened species.

Percentage of Threatened Species

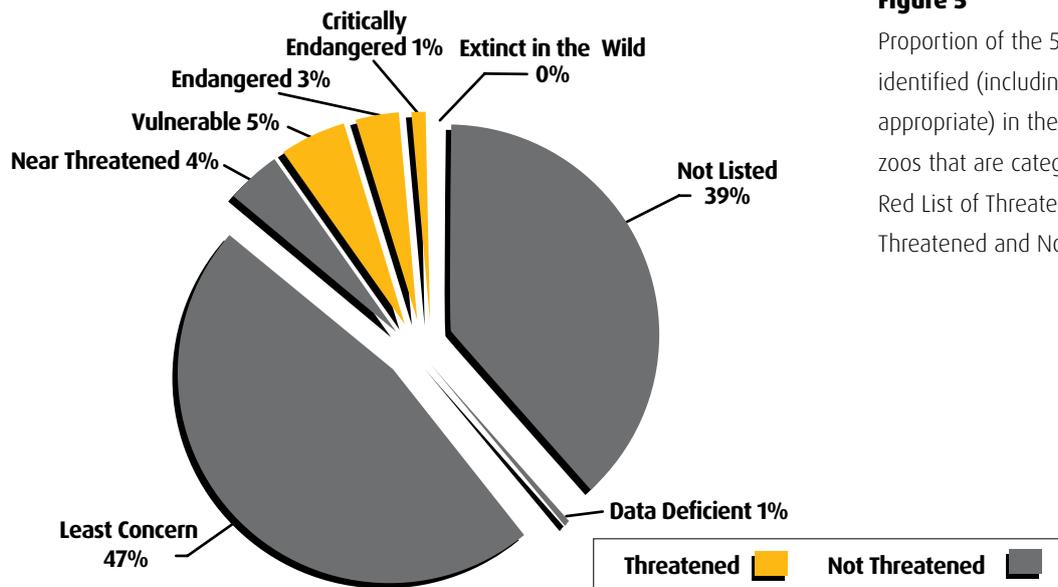


Figure 5

Proportion of the 531 species identified (including subspecies where appropriate) in the six Hungarian zoos that are categorised by the IUCN Red List of Threatened Species™ as Threatened and Not Threatened.

Percentage of Globally Threatened Species and Taxa

IUCN Red List of Threatened Species™ Categorisation	Taxonomic Group						Total No. Species	Proportion of total no. Species (%)
	Mammals	Birds	Reptiles	Fish	Amphibians	Invertebrates		
Not Listed	12	5	15	108	0	67	207	39%
Not Evaluated	0	0	0	0	0	0	0	0%
Data Deficient	1	0	0	2	0	0	3	1%
Least Concern	64	96	16	67	3	1	247	47%
Near Threatened	10	7	3	1	1	1	23	4%
Vulnerable	11	6	4	5	0	0	26	5%
Endangered	15	2	0	1	0	0	18	3%
Critically Endangered	5	2	0	0	0	0	7	1%
Extinct in Wild	0	0	0	0	0	0	0	0%
Total No. Species	118	118	38	18435%	4	69	531	100%
Proportion of total no. Species (%)	22%	22%	7%	18435%	1%	13%	100%	100%

Table 1 Proportion of the 531 species (including subspecies where appropriate) identified in six Hungarian zoos, categorised as Threatened and Not Threatened by the IUCN Red List of Threatened Species™ by taxa.

The results indicate that 9% of the total number of observed species (n = 51) from the selected zoos can be described as Threatened (Vulnerable (5%), Endangered (3%) and Critically Endangered (1%)) (Table 1). Of the 51 Threatened observed species, 61% were mammals, 19% were birds, 12% were fish, 8% were reptiles, and no Threatened amphibians or invertebrates were recorded. The remaining 91% of the Not Threatened species were either classified as Least Concern (47%), Near Threatened (4%) or Data Deficient (1%) by the IUCN Red List of Threatened Species™ categorisation, or Not Listed (39%) (Fig. 5). This indicates that the majority of species exhibited are of a low conservation priority. Of the six zoos, Xantus Janos Zoo exhibited the highest proportion of Threatened species (15% of species (n=12) in the zoo's total observed collection), whilst Kecskemet Wildlife Garden kept the least (6% of species (n=4) in the zoo's total observed collection). Of the 409 species observed at Budapest Zoo, 8% (n=34) are categorised as Threatened (IUCN Red List of Threatened Species™).

Of the 413 species of mammal, reptile, amphibian, invertebrate and fish observed at the six zoos, 6% (n=24) are listed on the IUCN European Red List, which lists Threatened species of mammal, reptile, fish, amphibian and invertebrate. This includes the following: 15 mammals (4%), consisting of 14 species categorised as Least Concern and one as a Vulnerable species (*Ursus maritimus*); 4 reptiles (1%), consisting of 1 species categorised as Least Concern, 2 as Near Threatened and 1 Vulnerable species (*Testudo graeca*); and 5 fish (1% of 413 species), including 1 Vulnerable species (*Acipenser ruthenus*). In addition, a total of 46 birds (9% of all 531 species observed

at the six zoos) are included on the BirdLife International status assessment for birds in the European Union (BirdLife International, 2004) (recommended for use to assess the conservation status of birds in the EU by IUCN (IUCN, pers comm., 21st July 2011)). Twenty seven of the 46 species are listed as 'Secure' (e.g. *Gyps fulvus*, *Anas penelope*); 1 as 'Depleted', (*Ciconia ciconia*); 1 as 'Localised' (*Phoenicopterus roseus*); 6 are 'Rare' (e.g. *Bubo scandiaca*, *Pelecanus onocrotalus*); 9 are 'Declining' (e.g. *Anas clypeata*, *Falco tinnunculus*); and 2 are 'Vulnerable' (*Aythya nyroca*, *Anas querquedula*).

Of the 137 species listed on Appendix 4 ('Strictly Protected Animal Species') of Local and National Regulations 13/2001(v. 9) for Protected and Strictly Protected Plant and Animal Species, Strictly Protected Caves, Duties and the European Community Nature Conservation Significance of Flora and Fauna Species, just 16 species are kept at the six Hungarian zoos included in this assessment. These 16 species included 14 bird species and 2 mammal species, with a noticeable absence of any 'Strictly Protected' amphibian, reptile, fish or invertebrate species kept by the 6 zoos. All 6 zoos kept at least one of these 16 'Strictly Protected' species, however Budapest Zoo kept the highest number (10 species) and Abonyi Wildlife Park and Xantus Janos Zoo kept the least (2 species).

Participation in European coordinated captive breeding programmes

In addition to identifying the proportion of Threatened species to Non-threatened species exhibited at the zoos, this investigation also recorded the numbers of species listed on the register of the European Endangered Species Breeding Programmes (EEPs) and European Stud Books (ESBs) and tried to confirm participation of individuals of those species within the recognised European Species Management Programmes. The results indicate a very low level of commitment by the selected zoos to *ex situ* conservation.

Percentage of species in Hungarian zoos that are part of coordinated captive breeding programmes (EEPs or ESBs)

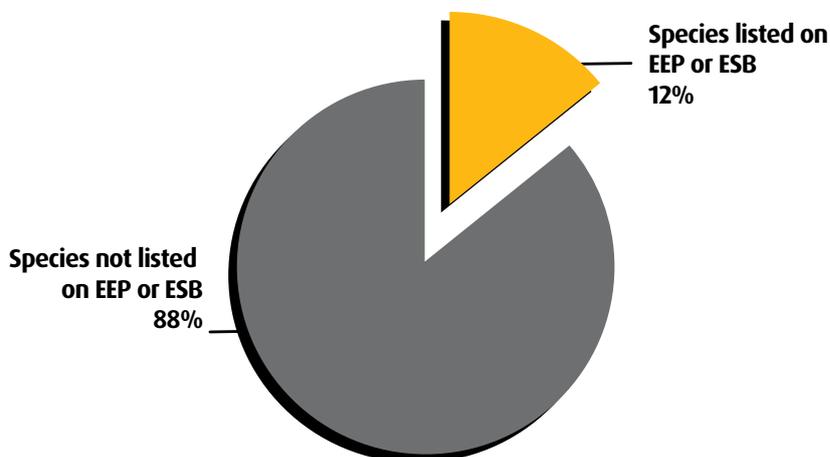


Figure 6

The percentage of the 531 species (including subspecies where appropriate) identified in the six Hungarian zoos that are part of an ESB or EEP.

Only 12% (n = 63) of the 531 species in the zoos are listed on either the register of European Endangered Species Breeding Programmes (EEPs) or European Stud Books (ESBs) (Fig 6). All six zoos kept at least one species listed by European Species Management Programmes. Budapest Zoo kept the highest number of species (42), followed by Xantus Janos Zoo and Veszprem Zoo (15 species each), whilst Abonyi Wildlife Park kept only one listed species (*Hippopotamus amphibius*).

None of the zoos returned the Zoo Questionnaire, which were provided to allow each zoo to submit more details about their species conservation programmes. Instead this evaluation had to rely upon information from published materials including the EAZA Yearbook 2007-2008 (the latest available edition). EEP/ESB-list species in Budapest Zoo and Veszprem Zoo (the two EAZA Member zoos) and Xantus Janos Zoo and Pecs Zoo, were confirmed to have individual

animals actively *participating* in one or other of the Species Management Programmes (EAZA Yearbook, 2007-2008; Budapest Zoo website; Veszprem Zoo website, Xantus Janos Zoo website; Pecs Zoo website). Out of a total of 409 observed species at Budapest Zoo, 42 (10%) were so listed and an additional 20 species (not observed during the zoo assessment) were confirmed as participating in the EEPs/ESBs. (EAZA Yearbook 2007-2008). Budapest Zoo claims to participate in 34 EEPs and 30 ESBs (Budapest Zoo website), which includes participation in 7 Species Committees and coordination of the mandrill (*Mandrillus sphinx*) studbook. The zoo also recorded the first successful birth of a white rhino (*Ceratotherium simun*) conceived through artificial insemination using frozen/thawed semen (Hermes *et al.*, 2009).

In comparison, despite holding at least one EEP or ESB-registered species, none of the listed species in either Abonyi Wildlife Park or Kecskemet Wildlife Garden were confirmed as actively participating in the respective European Species Management Programmes. Although some of the selected zoos are contributing to species conservation more than others, overall, commitment is minimal. **Out of a total of 531 species observed in the six zoos, 9% (n=51) are categorised as Threatened, of which 65% are involved in European cooperative breeding programmes.**

Participation in scientific research, *in situ* conservation and awareness-raising activities

Aside from captive breeding, a number of the selected zoos appear to be involved in other activities which may contribute to species conservation. These included: the promotion of the annual EAZA conservation campaigns which raise awareness and occasionally modest funds for species conservation efforts (Budapest Zoo, Xantus Janos Zoo and Veszprem Zoo); scientific research in collaboration with higher education and research institutions (Budapest Zoo and Veszprem Zoo); and the rescue and rehabilitation of native wildlife through established rescue centres within the zoo (Budapest Zoo, Xantus Janos Zoo and Veszprem Zoo).

Three of the zoos have established affiliated charitable organisations: Budapest Zoo – Foundation of Budapest Zoo (Foundation of Budapest Zoo website); Kecskemet Wildlife Garden – The Wildlife Garden Conservation Foundation (MASK website); and Veszprem Zoo – The Kittenberger Zoo Foundation (Foundation of Kittenberger (Veszprem) Zoo website), all of which appear to allow the zoos to receive charitable donations which are used to improve animal enclosures, secure training for zoo staff, expand educational activities in the zoo and ensure general zoo development (Budapest Zoo website; Kecskemet Wildlife Garden website; Veszprem Zoo website; MASK website). **However, not one of these Foundations appears to provide funding for *in situ* conservation programmes.**

Budapest Zoo appears to be the most proactive zoo within the representative zoo sample. It has established a Veterinary and Conservation Department which has reportedly conducted research into: hormonal correlates of the ovarian cycle in yellow-cheeked crested gibbon (*Nomascus gabriellae*) (Geissmann & Anzenberger, 2009); molecular sexing of African rhinos (Peppin *et al.*, 2010); novel adenoviruses and herpesviruses in bats (Janoska *et al.*, 2011); and a study on hematologic and plasma biochemistry values in white storks (*Ciconia ciconia*) (Szabo *et al.*, 2010). There is also the Quarantine and Nature Conservation Rescue Center at Budapest Zoo, which has reportedly rescued more than 1,500 specimens of 130 bird species in the last ten years (Budapest Zoo website). Budapest Zoo also participates in a number of *in situ* conservation programmes, which are seemingly complemented by *ex situ* conservation programmes at the zoo (as advised by CBD). These specifically focus on the biodiversity of the Carpathian Basin (e.g. the Hungarian meadow viper (*Vipera ursinii rakosiensis*), Eurasian otter (*Lutra lutra*), Eurasian beaver (*Castor fiber*) and, since 2004, participation in the European Native Seed Conservation Network (Budapest Zoo website).

Four of the six selected zoos (Abonyi Wildlife Park, Pecs Zoo, Xantus Janos Zoo and Kecskemet Wildlife Garden) do not appear to be undertaking any scientific research and no *in situ* conservation projects were identified in three zoos (Abonyi Wildlife Park, Pecs Zoo and Kecskemet Wildlife Garden). **Only two zoos, Budapest Zoo and Veszprem Zoo, appear to be undertaking scientific research, and *ex situ* and *in situ* conservation programmes.**

EDUCATION

The Directive states that zoos should ‘*promote public education and seek to raise awareness in relation to the conservation of biodiversity, particularly by providing information about the species exhibited and their natural habitats*’ (Article 3). Article 1(1) of JD3/2001 and Article 3(3) of APA specify that zoos in Hungary should disseminate knowledge and information about exhibited species and, further, require that zoo staff are sufficiently knowledgeable about the animals and their needs (Article 1(3) and 4, JD3/2001; Article 39(2), APA).

Findings indicate that four of the six selected zoos (Budapest Zoo, Xantus Janos Zoo, Pecs Zoo and Veszprem Zoo) have a dedicated education centre which appear to offer classes and seminars, as well as daily species talks (which are advertised as animal feeding sessions). In particular, Xantus Janos Zoo, Pecs Zoo and Veszprem Zoo offer a variety of classes and annual events, advertised on their websites, covering topics such as environmental education, species conservation and animal behaviour. Only Abonyi Wildlife Park did not operate educational ‘summer camps’ for children.

Hands-on animal contact is referred to as an educational experience in four of the zoos (Budapest Zoo, Abonyi Wildlife Park, Xantus Janos Zoo and Pecs Zoo). This involved the touching and holding of a variety of animals from reptiles and insects in Budapest Zoo, to lion cubs (*Panthera leo*) in Abonyi Wildlife Park, tapir (*Tapirus terrestris*) and llama (*Lama glama*) in Xantus Janos Zoo, to a variety of species, including squirrel monkeys (*S. sciureus*) in Pecs Zoo (Zoo websites). As previously explained, limited signage was observed to notify the public to the risks of direct animal contact.

Budapest Zoo is the only zoo in the representative sample, other than the falconry show at Veszprem Zoo, which uses their animals in presentations or shows which take place throughout the day. Budapest Zoo operates a variety of animal shows entitled, ‘Animals in Action’, many of which take place in a designated arena. These appear to involve: coati (*Nasua nasua*) walking across a rope; bird of prey flight demonstrations; ‘Happy Feet’ that involves penguin feeding and ‘seal training’; ‘Monkey Show’; ‘Elephant School’ involving ‘elephant training’; and ‘Seal Deal’ involving sea lions (*Zalophus californianus*) “fulfilling funny tasks with footballs and ringlets” (Budapest Zoo website and Budapest. Info website).

Minimal species information

According to the Directive, a basic requirement of a zoo is that it informs its visitors about the animals being exhibited. In Hungary, zoos are required to provide information about the species exhibited but, unlike the Directive, the type of information this should include, is not specified by JD3/2001.

Proportion of Species Information Signage Present

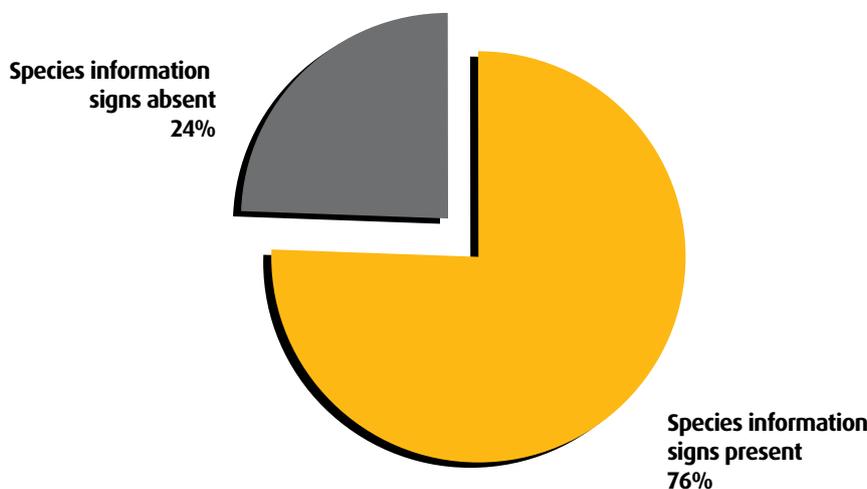


Figure 7

The average percentage of species information signage present or absent (for all 844 species holdings) in the six Hungarian zoos.

On average, 24% of *species holdings* completely lacked any form of species information signage (Figs. 7 & 9). Species information signage was absent for 52% of all *species holdings* observed in Abonyi Wildlife Park, 42% in Xantus Janos Zoo, and 21% in Pecs Zoo. Signage for 3% of *species holdings*, over the six zoos, was incorrect (inaccurate species’

scientific name), whilst others displayed only minimal information about the species. Whilst species information in Pecs Zoo and Veszprem Zoo was in two or more European languages, the information on species signage at Abonyi Wildlife Park was often illegible. Figure 9 provides an overview of the content of the signage in the zoos.



Figure 8

Veszprem Zoo.

Many of the enclosures in the six zoos lacked information about the species exhibited, despite the requirements of JD3/2001 and Article 3(2) of the Directive. For example, no species information was provided for the common wildebeest (*Connochaetes taurinus*), plains zebra (*Equus quagga*) or the white rhinoceros (*Ceratotherium simum*) exhibited in this enclosure.

Quality of Species Information Signs

As mentioned above, Article 1(1) of JD3/2001 and Article 3(3) of APA require information about all the *species holdings* to be present, but it sets out no specific criteria. Signage in 180 randomly selected enclosures in the six zoos was analysed using the requirements of the SMZP (as consistently used in the EU Zoo Inquiry 2011).

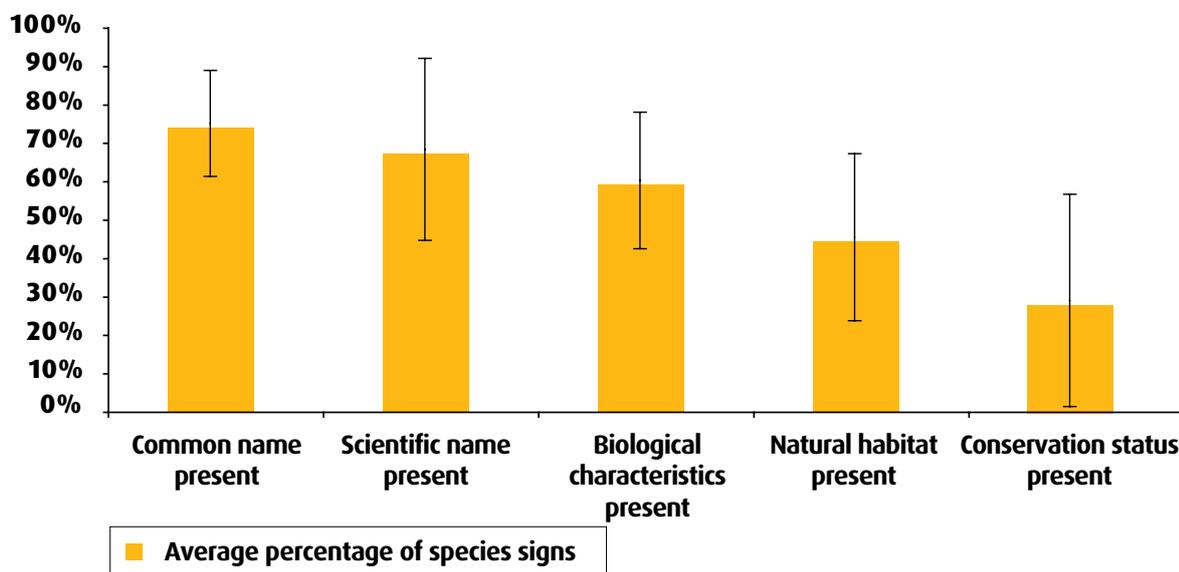


Figure 9 Content of species information signage within the six Hungarian zoos. Each column represents specific information, as indicated by best practice criteria (SMZP). Each value (e.g. Scientific name present, 68%) represents the average of the 167 species information signs observed in 180 randomly-selected enclosures in the six zoos. Error bars are a visual representation of the standard deviation from the mean value, demonstrating the variation in performance amongst selected zoos (e.g. the presence of the species conservation status varied considerably between zoos in comparison to the presence of species scientific name).

The results (Fig. 9) show that of the signage present in the randomly-selected enclosures, on average 71% **did not** contain all the required information (SMZP), with 71% not including reference to the species conservation status and 55% not including reference to species natural habitat (as required by the Directive). It is also important to note that

the information contained on the signage also varied significantly between the zoos: for example, Abonyi Wildlife Park failed to provide any information about the species' conservation status and only 10% of its signs included information on natural habitat; Kecskemet Wildlife Garden failed to provide information about biological characteristics and natural habitat on 68% of its signage; and whilst Budapest Zoo failed to display species' common name and scientific name on only 7% of its signage, 52% of signs at Budapest Zoo made no reference to species natural habitat, which is a requirement of Article 3(2) of the Directive.



Figure 10

Kecskemet Wildlife Garden.

When species information signage was available it frequently covered only minimal information or was in a poor condition. This sign for the jungle cat (*Felis chaus*) only includes the common and scientific name and omits information about the species' natural habitat, biology, geographical distribution and conservation status.

EVALUATION OF ANIMAL ENCLOSURES

To evaluate the suitability and quality of each of the 180 randomly-selected enclosures, data relating to 12 criteria regarded as vital to the health and welfare of the wild animals in captivity were analysed using the evaluation method as described in Sections D and E of the Methodology. The 'Five Freedoms' (OIE Terrestrial Animal Health Code, 2010) were referenced as the basis for minimum standards for the keeping of animals, but species-specific needs were also taken into account, particularly in relation to the suitability of the captive environment.

In addition, analysis also included reference to and evaluation using, the Annex to JD3/2001, which specifies minimum species-specific standards in animal husbandry and care. The standards specify minimum space requirements in relation to the species and the number of individuals contained, as well as some indication of suitable environmental enrichment.

In reference to the Five Freedoms and the 12 criteria used to assess enclosure quality, the following observations were made:

Freedom from Hunger and Thirst: Provision of Food and Water

'Food and drink provided for animals to be of the nutritive value and quantity required for the particular species and for individual animals within each species . . .'

(Article 20, EAZA Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria 2008)

The quality of drinking water in numerous enclosures appeared stagnant and unhygienic. Despite the availability of pelleted foods in two of the zoos, the fact that uncontrolled, unsupervised feeding of the animals was permitted in five out of the six zoos was a matter of great concern. Encouraging animal feeding by the public could result in some animals being over- or under-fed, or receiving inappropriate and potentially harmful, or even lethal, foods.

Freedom from Discomfort: Provision of a Suitable Environment

'Living conditions must regard the age, sex and physiological condition of the animals.'

(Article 4, APA)

'Animals kept outdoors must be protected from the adverse effects of unfavourable weather conditions and natural enemies.'

(Article 5, APA)

Despite reports that four of the selected zoos have undertaken renovation work in the last five years, there were many instances where animals were kept in substandard conditions and, in some cases, where living conditions lacked sufficient light and ventilation. Animal enclosures were often cramped and fell short of the requirements specified by APA and JD3/2001. This was particularly apparent in enclosures exhibiting wide-ranging species, many of which did not appear to have sufficient space to exercise and to express all of their natural behaviours.



Figure 11

Xantus Janos Zoo.

This enclosure exhibiting a caracal (*Caracal caracal*) was small, devoid of suitable furnishings and lacked privacy. The ventilation may also have been insufficient, since there was no apparent access to the outdoors. These constitute inappropriate living conditions for this species.



Freedom from Pain, Injury and Distress: By Preventative Measures and Provision of Suitable Health Care

'There must be a method in place for the treatment and disposal of animal carcasses, animal waste and manure.'

(Article 3(2)cj, JD3/2001; Article 5(4), APA)

'Animal's health status must be checked at least once a day by qualified persons'

(Annex to JD3/2001; Article 4(3), APA)

Poor levels of hygiene were recorded in some of the randomly selected enclosures. This included unacceptable build-up of faeces and stagnant drinking / bathing water and, in the aquariums, a build-up of faeces and algae were observed. This could perpetuate the transmission of diseases. In Abonyi Wildlife Park in particular, a build-up of potentially harmful discarded food and drink containers and wrappers (from human foods) were observed in numerous enclosures, perhaps as a result of the zoo's lax animal feeding policy.

Some animals were observed with debilitating conditions, including overgrown hooves in ungulates and birds with damaged wings, although the latter could have been patients from the rehabilitation centres established at some of the zoos.



Figure 12

Xantus Janos Zoo.

Uncontrolled feeding of the animals by the visiting public was permitted at five of the six selected zoos. There was no control over which species could be fed, in what quantity, or the type of food, which could have serious implications for the health and welfare of the animal concerned.

Freedom to Express Normal Behaviour : Provision of Suitable Space and Proper Facilities

'Animals to be provided with an environment, space and furniture sufficient to allow such exercise as is needed for the welfare of the particular species.'

(Article 3, EAZA Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria, 2008)

'A well-furnished living space must be provided, which provides stimuli for the animals and encourages natural behaviour.'

(Annex to JD3/2001)

Many enclosures lacked environmental complexity with appropriate facilities, furnishings, substrate and environmental enrichment that would permit and encourage the animals to rest, seek shelter or privacy, escape possible conflict with cage companions, exercise and carry out natural behaviours. Species requiring adequate features to climb, bathe, dive, fly, or a suitable substrate to dig or burrow in, or housing in a social grouping, were often housed in conditions where such natural behaviours were compromised or prevented. These conditions failed to meet APOS standards and contravened the specific minimum requirements of the Annex to JD3/2001.

Freedom from Fear or Distress : Ensuring that conditions do not cause mental suffering

Results indicated that, in numerous instances, animal enclosures were poorly located. For example, predators were housed in close proximity to prey species, or highly territorial species placed alongside each other. There were also instances where enclosures were next to busy thoroughfares (in one case a railway line), or in very close proximity to people.

'Any direct physical contact between animals and the visiting public only to be under the control of zoo staff and for periods of time and under conditions consistent with the animals welfare and not leading to their discomfort'

(Article 19, EAZA Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria, 2008)

There were many instances in all the zoos included in the investigation where the public could have planned or unplanned direct contact with animals. This could cause unnecessary distress to the animals. This was further exacerbated by the fact that frequently the animals could not seek shelter or privacy from view or avoid interaction with cage companions. The continuous handling of the lion cubs at Abonyi Wildlife Park was a particular concern. Numerous observations were recorded where the animals exhibited agitated or abnormal, repetitive behaviour

that could have been related to stress and poor welfare. Species of particular note included: coati (*Nasua nasua*), hamadryas baboon (*Papio hamadryas*), red fox (*Vulpes vulpes*), grey wolf (*Canis lupus*), Eurasian badger (*Meles meles*), polar bear (*Ursus maritimus*), common pheasant (*Phasianus colchicus*) and quail (*Coturnix coturnix*).

Environmental Quality of Enclosures

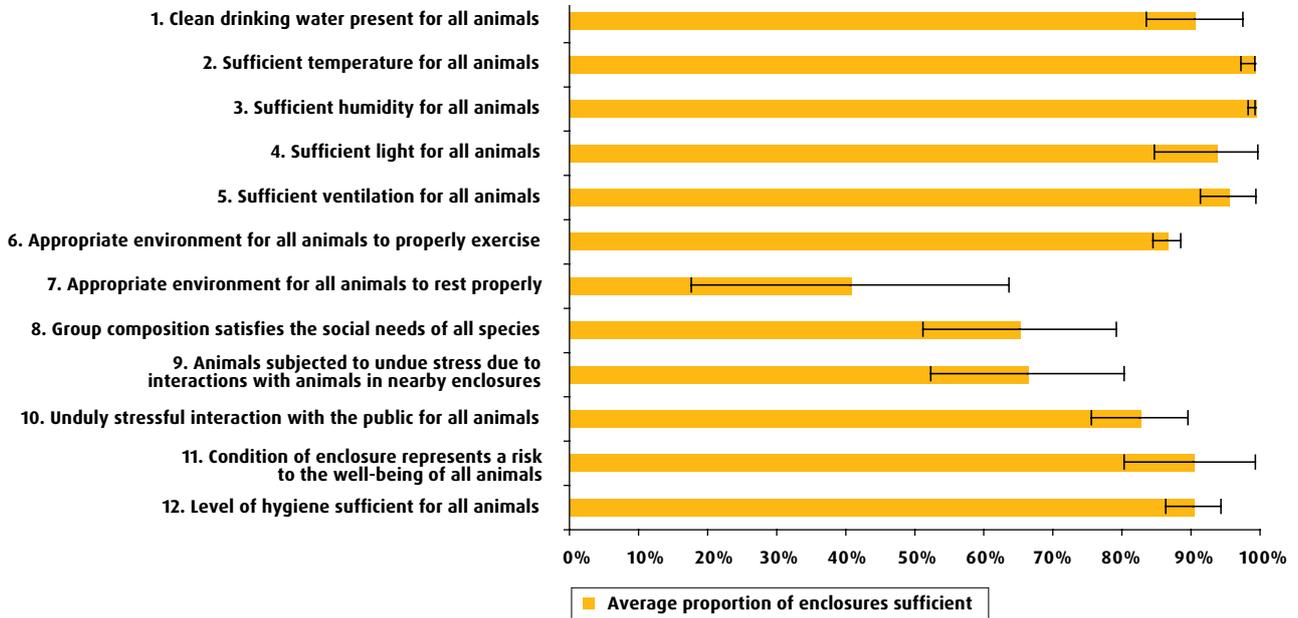


Figure 13 Environmental quality of the 180 randomly-selected enclosures from six Hungarian zoos. Each column represents a criterion used to assess the suitability of the enclosures to meet the needs of the animals contained. Error bars are a visual representation of the standard deviation from the mean value, demonstrating the variation in performance amongst selected zoos (e.g. the ability for the animals to rest in the enclosures varied considerably between zoos compared to the temperature which was consistently adequate). Where the presence of a condition or factor could not be determined, data were not included.

The results (Fig. 13) demonstrate that while most enclosures appeared to provide the animals with adequate temperature, humidity and ventilation at the time of assessment, lower values were recorded for: the availability of suitable facilities to allow the animal(s) to rest (on average, 59% of the randomly-selected enclosures failed to provide appropriate structures or facilities to allow the animals to rest properly); a group composition that satisfies the social needs of the species (on average, 35% of the selected enclosures did not provide the species with the appropriate social structure); interactions with animals in nearby enclosures (on average, 34% of enclosures subjected the animals to possible undue stress due to the proximity of the enclosure to other exhibited species); and interactions with the public (on average, 17% of enclosures subjected the animals to possible undue stress due to visitors having direct access to the animals).



Figure 14

Pecs Zoo.

Numerous enclosures in all the zoos that were overly restrictive for the animal(s) exhibited, such as this enclosure exhibiting African lions (*Panthera leo*). Minimum standards for the keeping of animals, Annex to JD3/2001, state that enclosures exhibiting lions must have an external area of 200m² for one to two animals. With each additional animal, the area should increase by 10m². This enclosure does not meet the legal requirements.

EVALUATION OF ANIMAL WELFARE

Keeping an animal in a restrictive, predictable and barren captive environment is known to compromise welfare (Mallapur *et al.*, 2002; Lewis *et al.*, 2006) and may result in the development of abnormal behaviours which can become increasingly more difficult to reverse, even with the application of environmental enrichment techniques (Swaigood & Sheperdson, 2006). The following represents the results of an assessment of the suitability of assessed enclosures to permit the expression of most natural behaviours. The results have been ranked with the most severe issues indicated in the graph below.

Issues requiring immediate attention (where the percentage of enclosures complying is below 50%)

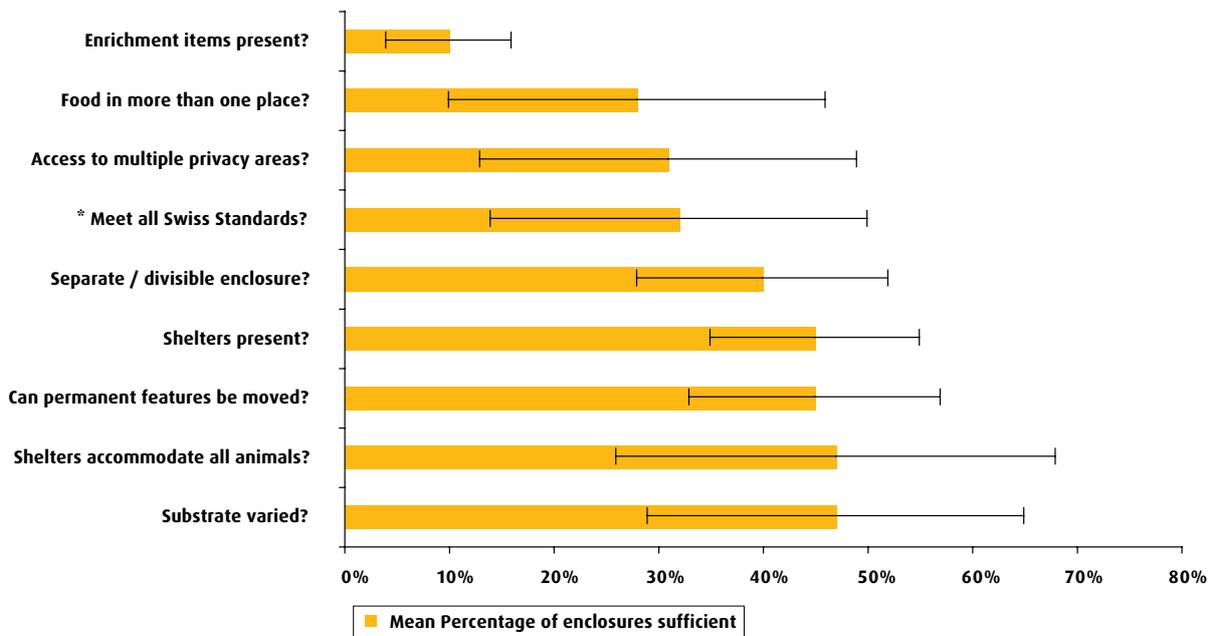


Figure 15 Issues requiring immediate attention following assessment of 180 randomly-selected enclosures from the six Hungarian zoos. Error bars are a visual representation of the standard deviation from the mean value, demonstrating the variation in performance (e.g. the presence of shelters to accommodate all animals in the enclosures varies considerably between zoos). Where the presence of a condition or factor could not be determined, data were not included.

The level of animal welfare was assessed in 180 randomly-selected enclosures in the six zoos (Fig. 15). Findings identified that the majority of the enclosures did not adequately provide for the species-specific needs of the animals exhibited. Specifically, enclosures lacked species-specific environmental enrichment (a requirement of Article 3(3) of the Directive) which would encourage natural behaviour. On average, 90% of the enclosures did not include any behavioural or occupational enrichment items or techniques such as toys or feeding devices; 72% of the enclosures did not provide food in more than one place; 69% of enclosures failed to provide all the individual animals exhibited with access to multiple privacy areas; 60% of enclosures did not provide the opportunity to divide or separate the animals; 55% of enclosures did not contain shelters for the animals; 55% of enclosures did not contain permanent species-specific furnishings that could be moved around the enclosure (commonly recognised as a way of providing a more stimulating captive environment); and 53% of enclosures did not contain varied substrate.

Widely Represented Issues of Concern (where the percentage of enclosures failing to comply is between 49% and 30%)

- On average, 40% of enclosures did not provide food in such a way that all animals could have simultaneous access to it.
- On average, 40% of enclosures did not take suitable measures to ensure climatic extremes were mitigated.
- On average, 36% of enclosures did not contain permanent species-specific furnishings that all animals could use at the same time.
- On average, 31% of enclosures were not environmentally-varied.

Less Widely Represented Issues of Concern (where the percentages of enclosures failing to comply is less than 30%)

- On average, 29% of enclosures failed to provide all the individual animals exhibited with access to multiple privacy areas.
- On average, 26% of enclosures did not provide enough distance to the back of the enclosure to allow the animal to retreat from the public.
- On average, 23% of enclosures allowed the public to surround the entire enclosure (360°).
- On average, 16% of enclosures did not provide the animals with appropriate food (particularly if animals were being fed by members of the public).
- On average, 15% of enclosures were not considered of sufficient size.
- On average, 15% of enclosures did not provide the individual animals with enough room to avoid cage companions, if necessary.
- On average, 14% enclosures allowed for public feeding.
- On average, 14% of enclosures did not have a suitable substrate.

Using the Annex to JD3/2001, which provides species-specific minimum requirements for enclosure sizes and furnishings for the majority of animals commonly kept in captivity, **the results indicated that on average 41% of the assessed enclosures failed to meet the Hungarian minimum standards.**

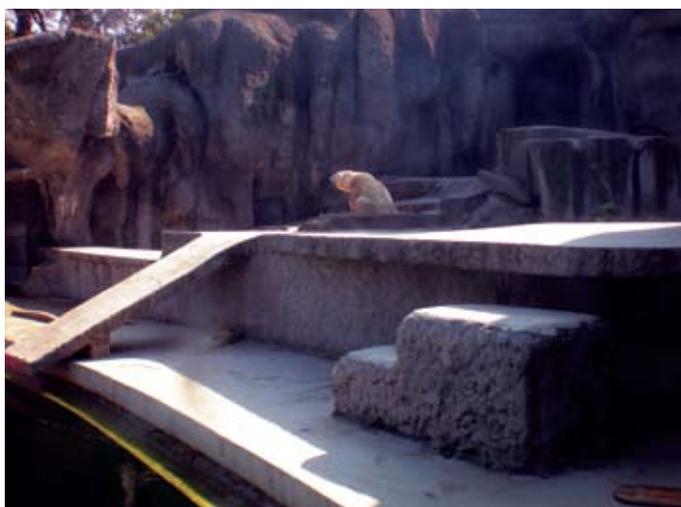


Figure 16

Budapest Zoo.

A polar bear (*Ursus maritimus*) was observed pacing back and forth, whilst swaying its head from side to side. This is recognised stereotypic behaviour frequently observed in captivity, particularly in enclosures containing wide-ranging species (Mallapur *et al.*, 2002; Mason & Rushden, 2006; Zoocheck Canada, 2006).

In addition, the Animal Protection Ordinance of Switzerland, Tierschutzverordnung 2008 (APOS) was used in the investigation to ascertain whether the enclosures were suitable for the species contained. APOS was selected as it represents an independent set of internationally-recognised species-specific standards and environmental enrichment from a non-EU Member State. All selected enclosures (from Sections D and E analysis) were assessed against the standards. **The results determined that, on average, 68% of enclosures that exhibited species listed on APOS did not meet these minimum requirements.**

CONCLUSION



This investigation has assessed six zoos in Hungary. All are believed to be licensed, although this could not be confirmed as the Competent Authority does not maintain a central zoo database nor appears aware of the exact number of zoos in the country (Standard Member State Questionnaire). The Directive has been transposed into national legislation but inaccuracies in transposition have been identified; in particular, the definition given to a 'zoo'. Concerns have also been raised about the quality, procedure and regularity of zoo inspections, which appear to be at the discretion of the regional Inspectorate for Environmental Protection, Nature and Water Management. Further concern has been raised about the potential risk of harm that planned or unplanned animal contact might pose to the public, in addition to the risk that uncontrolled feeding of the animals by the public might pose to both the public and the animals. Findings have indicated that there is variance in performance between zoos, with those affiliated to EAZA maintaining higher standards. However, overall, regardless of whether they are affiliated or not, zoos in Hungary appear to be making an insignificant contribution to the keeping and breeding of Threatened or 'protected' species, to the promotion of species conservation or the delivery of appropriate animal care standards. Over 40% of the animal enclosures failed to meet the Hungarian minimum standards (Annex to JD3/2003) and environmental enrichment was absent in 90% of enclosures.

These Conclusions are divided into seven sections for ease of reading:

1. Implementation of the Directive

In Hungary, zoos are licensed and regulated through the Animal Protection Act ('APA') and specifically the Joint Decree *n.3/2001 (II.23)* (as amended) ('JD3/2001'). Zoo regulation is the responsibility of the Ministry of Rural Development, although the regional Inspectorate for Environmental Protection, Nature and Water Management is required to undertake the regular zoo inspections.

All EU Member States (25) were required to have transposed and implemented the requirements of the Directive (1999/22/EC) by April 2005. The implementation of the Directive by Member States is an issue for subsidiarity and although transposition is overseen by the European Commission, it is the responsibility of the Member State to accurately transpose all the requirements of the Directive into the respective national law and apply it. Referring to the JD3/2001 (before its amendment in 2003), all zoos in Hungary (as defined) were required to be licensed and comply with their legal obligations by April 2003 (Article 7(4), JD3/2001). Unlike other EC Directives, Directive 1999/22/EC includes no guidance or explanatory notes and therefore, effective application relies on the interpretation of any guidance provided by the EU Member State Competent Authority. This has led to inconsistencies in its application amongst EU Member States as a result of different interpretations of requirements, definitions, and licensing and inspection procedures. Hungary is no exception.

Incorporated into Hungary's Animal Protection Act (Chapter VI, APA) and JD3/2001, the Directive's overall objective, to conserve biodiversity, has been effectively enacted in Hungary, with emphasis on scientific research, the conservation of 'protected' species and *ex situ* conservation. Zoos are required to be licensed and regularly inspected to ensure they meet those requirements applicable to zoos, which are largely similar to those of Article 3 of the Directive. However, there are some notable discrepancies that require further investigation by the European Commission.

This includes the definition of a 'zoo', as specified by Article 3(3) of APA and Article 1(1) of JD3/2001, which differ significantly from the definition stated by Article 2 of the Directive. Whilst there are some similarities in relation to the requirement that a zoo is a permanent facility that displays animals to the public for 7 days or more in a year, the zoo definition in Hungarian law includes conflicting criteria to the Directive definition caused by additional specifications that only those establishments that '*...participate in the conservation of endangered species*' (Article 3(3), APA) and '*serve to protect the environment and animals*' (Article 1, JD3/2001) should be recognised as a zoo and licensed accordingly. This indicates that those establishments which display animals to the public for 7 days or more, which do not take part in these above listed 'conservation' activities, may not require a licence. This is an incorrect interpretation of the Directive and the situation may well have resulted in the mis-identification of establishments that should warrant a zoo licence under the Directive. Hungary has more than the estimated 14 or 15 zoos as detailed in the Standard Member State Questionnaire.

Furthermore, whilst the information required as part of a zoo licence application is detailed (the provision of the various '*plans*'), information about the content of the '*plans*', the criteria to identify a 'zoo' (Article 1, JD3/2001), the definition of exemption criteria (Article 1(4), JD3/2001) and the requirements applicable to licensed zoos (Articles 1(2) and 3(2)), JD3/2001) is limited and lacks explanation and guidance. This may cause mis-interpretation of definitions and requirements, leading to facilities being wrongly exempted from zoo regulation and possible confusion amongst the authorities as to which establishment should be licensed and what is required of them. **Without clear definitions, clarification of requirements and 'best practice' guidance to assist zoo operators achieve their objectives, enforcement of JD3/2001 is problematic.** These inaccuracies in definition and interpretation could contravene the specifications of the Directive.

2. Ineffective enforcement

All zoos in Hungary are required to comply with the requirements of the Directive, APA and specifically, JD3/2001, by April 2005. After April 2005, any zoo found not licensed in accordance to the Directive should face closure (Article 4.5 of the Directive).

According to the Ministry of Rural Development, all zoos in Hungary are licensed (Standard Member State Questionnaire) but, as indicated above, it appears that exact numbers of zoos in the country are not known by the central authority. Implementation and enforcement of the zoo legislation apparently falls to the regional Inspectorate for Environmental Protection, Nature and Water Management in conjunction with the veterinary authority and Municipal representatives, which are required to carry out regular inspections (every four years) to ensure zoo compliance (Article 9, JD3/2001) (Standard Member State Questionnaire). According to the Ministry, inspections take place at the discretion of these regional authorities, who apparently have sufficient knowledge and training in all matters relating to zoo operation and animal care (Standard Member State Questionnaire). No contact was made with the regional Inspectorates as part of this investigation, but it is assumed that zoo inspections are regularly undertaken at all licensed zoos since the implementation of JD3/2001. Furthermore, if any zoo was found not to comply with any of its obligations under APA or JD3/2001, then the zoo's operating licence would have been withdrawn and the facility is temporarily, or permanently, closed (Articles 7 and 14, JD3/2001).

Findings from this investigation demonstrate, however, that none of the six zoos included in this investigation comply with all their legal obligations. In particular, there was minimal evidence of a commitment to protect '*nationally or internationally-recognised protected species*' and less than half of the zoos appeared to engage in scientific research (Article 1(2) of JD3/2001). Similarly, zoos in Hungary do not appear to be taking sufficient measures to prevent animal escapes, or protect the public from potential injury or disease transmission (Article 3(2) of JD3/2001; D8/1999) and the selected zoos are only making a modest attempt to educate the visiting public about the species exhibited and the conservation of biodiversity (Article 1(1) of JD3/2001). Notably, Budapest Zoo and Veszprem Zoo perform better than most in the representative zoo sample, but overall, compliance appears substandard. To date, no zoo in Hungary has been reportedly closed for non-compliance with the law. However, the Ministry of Rural Development does recall one case when a zoo was partially closed (Standard Member State Questionnaire).

The findings suggest that not only are there shortfalls in legislative compliance with the Directive, but there appears to be inconsistencies in compliance with Hungarian zoo law between the selected zoos, raising concerns about the enforcement of the law and, specifically, the quality and regularity of zoo inspection in Hungary. Despite a requirement for the regular inspection of zoos, **there is limited explanation of the inspection procedure, detailing the assessment criteria, the type of conditions imposed on the zoo licenses (should a zoo not meet the requirements) and the protocol used.** This apparent lack of structure and guidance could well be hindering an effective zoo inspection procedure, which, had it been properly implemented, could have prevented zoos largely being left to their own devices, as is currently the case. Further investigation by and engagement with the regional and municipal authorities is required.

3. Prevention of animal escapes

There are two recognised barriers that prevent the escape of an animal from a zoo into the natural environment. The *enclosure fencing*, which prevents an animal from escaping from its enclosure, and the *perimeter fence*, which prevents an escaped animal from leaving the zoo grounds. Both barriers should be secure and of an adequate height and strength to contain the animals.

The threat that an escaped, non-indigenous, potentially dangerous animal might pose to the natural environment, or to native species, is recognised by JD3/2001 and further, in relation to 'dangerous' animals, by D8/1999, and 'protected' animals, by Government Decree n.245/1998 (XII.31). Each zoo must maintain an '*Animal Plan*' that provides guarantees that sufficient measures have been taken to prevent animals from escaping from the zoo and an '*Action Plan*', setting out actions to be taken in the event of an animal escape. Yet, two of the six zoos did not appear to have a perimeter fence that would likely prevent an animal from escaping into the natural environment and further, there were numerous instances during the zoo visits as part of this investigation where animals were seen escaping their enclosure. Indeed, some enclosures lacked preventative barriers altogether and in some cases, enclosures were unlocked. In some instances, DAISIE-listed Invasive Alien Species could potentially escape into the natural environment. These examples all appear to indicate that zoos are ignoring the stringent legal requirements.

Competent Authorities in Hungary do not appear to be enforcing the requirements of the law in relation to ensuring sufficient measures are in place to prevent animal escapes. This is further evidence that zoo inspections lack the regularity and quality to ensure effective enforcement of the law. Furthermore, the zoos are clearly not making regular checks to ensure enclosures and boundaries are sufficiently secure.

4. Public placed at risk of injury and illness

Joint Decree n.8/1999 (VIII.13) *KÖM-FVM-NKÔM-BM 'on the Keeping of Dangerous Animals'* ('D8/1999') specifies that should a zoo keep one or more of the species listed on the Annexes to D8/1999, then extra measures must be in place to secure the animal(s) and guarantee the safety of the public. These guarantees must be included in the zoo's '*Animal Plan*' (Article 3(2)c, JD3/2001), which should be assessed during the zoo inspection.

All six zoos actively encouraged visiting members of the public to have direct contact with their animals, with five zoos permitting the public to have direct contact with potentially dangerous wild animals. These included various reptile species, ray species, juvenile lions (*Panthera leo*), two primate species (*Lemur catta* and *Saimiri sciureus*) and larger mammals like the lowland tapir (*Tapirus terrestris*). The public were also encouraged to feed the animals at five of the zoos (one zoo prohibited feeding), but since the majority of instances observed were unsupervised, there was clearly no control over which species could be fed or whether direct contact with the animals was also possible. Recognising that many of the animals were Category 1 Hazardous-listed species or 'dangerous' animals (SMZP or in the Annex to D8/1999), the public could potentially be at serious risk. The fact that many of the enclosures were poorly-designed, in a poor state-of-repair, unlocked or did not have stand-off barriers, meant the public were able to touch potentially dangerous animals, and the risk was possibly greater where food was also available.

The public handling of juvenile lions at Abonyi Wildlife Park is of particular concern and, referring to various videos on YouTube, it would appear that the handling of young lions and tigers are a regular feature at the zoo (You Tube Video, 2009 (www.youtube.com/watch?v=4jedmt10NCw); You Tube Video, 2010a (www.youtube.com/watch?v=8c-si71yUrk&feature=related); You Tube Video, 2010b (www.youtube.com/watch?v=A0nR51mhlYQ&feature=related)). This practice not only raises significant animal welfare concerns but further, public health and safety risks.

Furthermore, of the 180 randomly selected enclosures across the six zoos, the public could potentially have unplanned and unsupervised contact with animals in 69 enclosures. This included 16 cases where poor enclosure design, the lack of the required stand-off barriers and the lack of zoo staff allowed the public to have contact with Category 1 Hazardous-listed species or 'dangerous' animals (SMZP or in the Annex to D8/1999). Furthermore, of the 65 randomly

selected enclosures that were observed to contain a Category 1 Hazardous-listed species or 'dangerous' animals, 36 did not have signage to warn the public of the potential dangers. In 2005, a young girl was mauled by a wolf at Budapest Zoo after she tried to pet the animal through the enclosure fencing (news24.com website).

These failures violate various requirements in JD3/2001 and, in particular, the requirements of D8/1999, which sets out specific safety measures, identifies where human contact with some species is prohibited (e.g. lions) and, with lesser hazardous species, determines that contact should be controlled under the constant supervision of a sufficiently qualified and knowledgeable individual. Very few of the instances where the public were observed touching or feeding the animals were supervised.



Figure 17

Abonyi Wildlife Park.

Two lion cubs (*Panthera leo*), no more than two months old, were introduced to members of the public who had congregated next to an enclosure exhibiting an adult male and female African lion. Passed from person to person for over an hour, the lion cubs were stroked, cuddled and held for souvenir photographs. Not only is contact with lions prohibited by D8/1999, but this practice is likely to cause the animals significant distress.

In addition to the risk of physical injury, direct human / animal contact can have disease implications, where vertebrate species, in particular, can transfer often harmful diseases to humans (and vice versa). Animals, particularly wild animals, are thought to be the source of >70% of all emerging infections (Kuiken *et al.*, 2005). For example, both reptiles and birds can harbour *Salmonella* (Centres for Disease Control and Prevention website; Mermin *et al.*, 2004) and primates, which are biologically and physiologically similar to humans, can spread viral, bacterial, fungal and parasitic diseases such as tuberculosis, klebsiella, poxviruses and Simian Herpes B Virus (some of which are fatal to humans) (Soulsbury *et al.*, 2009). The risk of infection for people who hold or stroke such animals is therefore highly probable (Warwick *et al.*, 2009). Common slider (*Trachemys scripta*), the species of freshwater turtle identified in the open pond near the entrance of Budapest Zoo, is known to harbour *salmonella* and there have been numerous instances where children, in particular, have been infected following contact with this species (Abalem de Sá & Solari, 2001; Nagano *et al.*, 2006; Readell, 2009). The risk of disease transmission, particularly zoonoses, is often an overlooked risk in zoos.

The public visiting Hungarian zoos are being placed at risk of both physical injury and disease transmission.

The law does not appear to be taking sufficient preventative measures to protect the public against potential injury and disease and the Competent Authorities in Hungary do not appear to be enforcing the requirements of D8/1999. **Zoos should be required to take far greater responsibility for the safety of the visiting public and, indeed, the welfare of their animals.**

5. Poor record for conservation

The Directive requires all zoos in the European Community to contribute to the conservation of biodiversity in accordance with the Community's obligation to adopt measures for *ex situ* conservation under Article 9 of the *Convention of Biological Diversity* (1992) (CBD website). This requirement is set out in the APA and JD3/2001, which require zoos (as defined) to promote and participate in species and nature conservation programmes, and, specifically, to commit to scientific research and the keeping and breeding of nationally and internationally-recognised threatened species. These objectives have been incorporated in the definition of a 'zoo' in Hungary (unlike the Directive), and this could have resulted in the mis-identification of establishments that should warrant a zoo licence under the Directive.

***Ex situ* conservation of nationally and internationally protected species**

Findings from this investigation have revealed that whilst some zoos contribute more than others, overall, **zoos in Hungary are not making a significant contribution to the conservation of internationally-recognised Threatened species.** The majority of species kept by the six zoos are of low conservation importance, with only 9% of observed species (n=51) listed as globally Threatened and, specifically, only 1% of observed species categorised as 'Critically Endangered' by the IUCN Red List of Threatened Species™. Mammals predominate, with Threatened reptiles (8%) and amphibians (0%) in a minority despite the fact that there are more Threatened amphibians than Threatened mammals (IUCN Red List of Threatened Species™). Of the six zoos, EAZA candidate, Xantus Janos Zoo, exhibited the highest proportion of Threatened species within its collection (15% of the total observed species), whilst Kecskemet Wildlife Garden had the lowest (6% of the total observed species).

Of the 51 Threatened species identified from a total of 531 species observed within the six zoos, 3 species (6%) of mammals, reptiles, fish, amphibians and invertebrates are listed on the IUCN European Red List (of mammals, reptiles, fish, amphibians and invertebrates) and just 1 bird (*Pelecanus crispus*) from the 51 Threatened species is listed on the BirdLife International status assessment for birds in the European Union (BirdLife International, 2004) (just 1% of the total number of bird species observed). Similar concerns must be raised about the efforts by Hungarian zoos to conserve nationally protected species (Appendices of Decree 13/2001). Across the six zoos (531 observed species), only 16 species were observed that are included on Appendix 4 'Strictly Protected Species', Decree 13/2001. Overall, **Hungarian zoos included in this assessment are only making a minimal contribution to the conservation of threatened European and national species. This appears to contravene Articles APA, JD3/2001 and Government Decree n.245/1998 (XII.31.). Furthermore, of the species information signage observed at the six zoos, 71% did not include reference to species conservation.**

Captive breeding, usually through a cooperative Species Management Programme, is a recognised component of *ex situ* conservation, which, together with participation in scientific research and information exchange directly benefit the *in situ* conservation of the species (as recommended by CBD). These are all options for EU Member States as stipulated by Article 3(1) of the Directive, but under Article 1(2) of JD3/2001, these are all obligations. Hungarian zoo law not only places an emphasis on the conservation of 'protected' species, but also requires their active involvement in captive breeding programmes (Article 3(2)a, JD3/2001) and to support the rescue and rehabilitation of native species (Article 1(2) of JD3/2001).

Findings demonstrate that four of the six zoos, but primarily the EAZA-affiliated zoos, are participating (but at a low level) in such activities, with the remainder seemingly not implementing the required 'Breeding Plan'. Of the 531 species observed in the six zoos, 51 (9%) were globally Threatened, of which 32 species are involved in European cooperative breeding programmes.

Scientific research and contribution to *in situ* conservation

Similar findings were identified in relation to scientific research, environmental education and the rescue and rehabilitation of native species. Again, EAZA-affiliated zoos were found to be undertaking scientific research, with the two zoos engaging with national institutions and also serving as animal rescue centres, although records published

by one of the zoos suggests that the majority of these rescued animals are not reintroduced (for example, the Xantus Janos Zoo website states that 39 species were rescued in 2009, 35% of which were released back into the wild). **Of the six zoos, the EAZA-affiliated (and the majority of MASK-affiliated) zoos appear to raise awareness, and occasionally provide funding for species conservation programmes through the annual EAZA Campaigns. Money from the charitable foundations established by three zoos, as well as the funding provided by the Ministry of Culture, is spent on zoo development, rather than species and habitat conservation.** Of the six zoos, Budapest Zoo appears to participate in the majority of scientific research and also contributes significantly to *in situ* conservation of nationally-protected species. **Over half of the representative zoo sample does not appear to comply with the requirements of Article 1(2) of JD3/2001. This is further evidence that zoo inspection lacks the regularity and quality to ensure effective enforcement of the law and delivery of the key biodiversity conservation objectives of the Directive.**

6. Limited educational value

In addition to a commitment to the conservation of biodiversity, zoos in the EU are required to promote public education and awareness about the conservation of biodiversity, particularly by providing information about the species exhibited and their natural habitats (Article 3(2) of the Directive). Hungarian law requires all zoos to educate the public, raise-awareness about the conservation of biodiversity and, in particular, to provide ‘*information about all exhibited species*’ (Article 3(3), APA; Article 1(1), JD3/2001).

All of the six assessed zoos appear to participate in educational activities to some degree. Four out of the six appear to have a structured educational strategy, offering species talks, seminars, ‘behind-the-scenes’ tours, printed materials and educational summer camps. Four of the zoos promote animal handling as an educational experience and two zoos host animal performances. It is questionable as to whether the animal handling sessions actually impart knowledge and promote respect for animals, and further whether the various shows, some of which consist of circus-style tricks, can be justified as part of an educational programme.

To date, few European Competent Authorities have undertaken an independent quality assurance assessment of educational activities in zoos to determine whether they can effectively deliver quality education and justify their claim to be educators.

Almost a quarter of *species holdings* observed at the six zoos did not have any species-specific information, with species information absent from more than half of *species holdings* in one of the selected zoos. **This does not comply with the relevant requirements (Article 3(3), APA; Article 1(1), JD3/2001).** Furthermore, the quantity and quality of informational signage provided varied significantly, with 71% failing to include reference to the species’ conservation status and 55% did not include reference to the species’ natural habitat (a requirement of the Directive). **Poor species information signage was observed in all the selected zoos.**

Overall, the educational plans in Hungarian zoos need thorough review and the zoos should significantly improve the quality of public education they offer concerning the natural attributes of animals in a way that does not compromise any animal’s welfare. For example, the educational value of the handling of lions at Abonyi Wildlife Park is questionable. Additional detailed guidance is required to encourage best practice. As a basic minimum, all *species holdings* must be properly labelled, as required by the Directive.

7. Unsuitable living conditions for animals

The assessment of zoo enclosures in Hungary identified a wide range of conditions in the six assessed zoos. The zoos affiliated with EAZA and MASK generally provided their animals with more appropriate housing conditions, compared to non-affiliated zoos. Overall, the environmental quality of the assessed enclosures often failed to provide the species with a suitable environment where natural behaviour was compromised or prevented and animals were exposed to potential dangers and stress. Of particular concern:

- Many far-ranging species were kept in small enclosures that did not attempt to meet their spatial needs;
- Species requiring adequate features to climb, bathe, dive, fly, or a suitable substrate to dig or burrow in were often housed in conditions where such natural behaviours were compromised or prevented;
- Shelter, and the ability for the animals to rest and seek refuge, was often lacking;
- Poor levels of hygiene, particularly in drinking water, were observed in the majority of zoos, which could cause a potential build-up of harmful pathogens;
- Some enclosures and enclosure fencing were in a poor state of repair and could not guarantee security;
- Many enclosures were devoid of furniture, apparatus and materials to allow the species to exercise and express normal behaviour.

It is widely-recognised that the keeping of animals for prolonged periods in 'impoverished', cramped captive conditions can compromise both their physical and mental health, and their general welfare. Conditions that fail to provide an animal with its basic needs can cause abnormal behaviour, disease and early mortality. Zoos must, therefore, seek to provide all their animals with more suitable environments that encourage exercise and natural behaviour.

The protection of the welfare of animals, through the Animal Protection Act (APA), is an obligation imposed on all keepers of animals in Hungary and together with the requirements of Articles 1(3), 3(2)c and 5 of JD3/2001, and specifically the Annex to JD3/2001, animals in zoos must be kept in conditions which meet their species-specific physical and psychological needs. The obligation to provide a 'duty of care', nutrition programmes, preventative and curative veterinary care and the employment of experienced zoo staff, has also been adopted by APA, the 'Animal Plan' required by JD3/2001 and D8/1999, and zoos are expected to house their animals in conditions that ensure their well-being, irrespective of species, gender or age. **These requirements are consistent with Article 3 of the Directive.**

Findings from this investigation have identified that 59% of the randomly assessed enclosures met the minimum standards in animal husbandry and care, as specified by Article 5 and in the Annex to JD3/2001. However, using internationally-recognised species-specific standards, (the Animal Protection Ordinance of Switzerland, Tierschutzverordnung 2008 (APOS)), overall, randomly selected enclosures in all six zoos lacked environmental complexity, sufficient opportunities for the animals to rest and seek privacy and generally lacked behavioural and occupational enrichment items. It is noted that Hungarian zoos have made a concerted effort in recent years to renovate and improve the living conditions for their animals (Budapest Week Magazine, 1994; Sullivan, 2011; Kecskemet Wildlife Garden website; Veszprem Zoo website; and signage at Veszprem Zoo) and the Ministry of Rural Development has stated that it believes that the situation is improving (Standard Member State Questionnaire). However, findings demonstrate that there is still need for considerable improvement, with a far greater commitment to the provision of species-specific needs, particularly for wide-ranging and social species.

The 'duty of care' requirement imposed on zoos also deserves a mention. This report has identified that many aspects of the enclosures, in particular the animals' drinking water, were in an unhygienic state. Litter was observed in numerous enclosures, some animals were observed to be in a debilitating state, many animals were subjected to an uncontrolled feeding regime by the public and environmental enrichment, which should be delivered to all animals through a complex programme, was non-existent in the majority of zoos assessed. **Notably, allowing the public to feed wild animals, unsupervised, with no control over which species is fed, in what quantity, or what type of food, could have serious implications on the health and welfare of animal.** Surprisingly, no reference could be found in either JD3/2001 or D8/1999 concerning the regulation of the public feeding of animals, despite the requirement that animals are fed appropriate nutrition. **As acknowledged by the Ministry of Rural Development, comprehensive further training in animal husbandry and care is needed (Standard Member State Questionnaire).**

It is widely recognised that the inclusion of varied environmental enrichment is integral to reducing the negative impacts of confinement on animals in captivity (maintaining healthy animals in a captive environment) (Pruetz &

Bloomsmith, 1992; Crockett *et al.*, 1989; Jordan, 2005). Without such stimulation, animals are likely to develop abnormal repetitive behaviours, recognised as indicators of poor animal welfare (Mason & Rushen, 2006). Equally, a cramped and 'predictable' captive environment can lead to obesity and muscular atrophy, which may, in turn, lead to welfare impacts with secondary health consequences (Fowler & Mikota, 2006; Harris *et al.*, 2008).

During the zoo visits, a number of animals were observed displaying abnormal behaviours often associated with a poor captive environment. Furthermore, numerous individual animals appeared to be suffering from illness, stress or debilitating conditions, which may also result from inappropriate housing conditions or poor management.

Of particular concern (although these activities were not observed) is the apparent use of a variety of animals in handling sessions at a number of the zoos. Although there is no evidence to suggest improper use of animals, there is seemingly minimal compliance with APA, JD3/2001 and D8/1999, which require animals to be treated with care and public contact to be prohibited or controlled. **It is recommended that the Animal Health Authority reviews such activities and proposes guidelines to the Ministry of Rural Development concerning the appropriateness or otherwise of the use of individual animals in these kinds of activities and if so under what circumstances.**

The basic principles set out in APA, JD3/2001 and D8/1999, concerning the provision of an animal's basic health and welfare needs, are generally not being met and without the effective enforcement of the law in Hungarian zoos, any attempt to keep animals in a suitable environment is severely compromised. Article 7 of JD3/2001 states that any zoo unable to meet their requirements and provide appropriate animal care should be instructed to close, either temporarily, until requirements are met, or permanently, and the licence withdrawn. However, feedback from the Ministry of Rural Development confirms that little action has been taken.

These overall findings once again call into question the regularity and quality of the zoo inspections, which are supposed to occur at least every four years, as well as the competency and knowledge of the zoo veterinarians and keepers and the ability of management to recognise their obligations to provide adequate conditions and appropriate animal care. **It is recommended that the Animal Health Authority and Ministry of Rural Development review the standards of animal husbandry in all Hungary's zoos and provide additional training and guidance wherever required.**

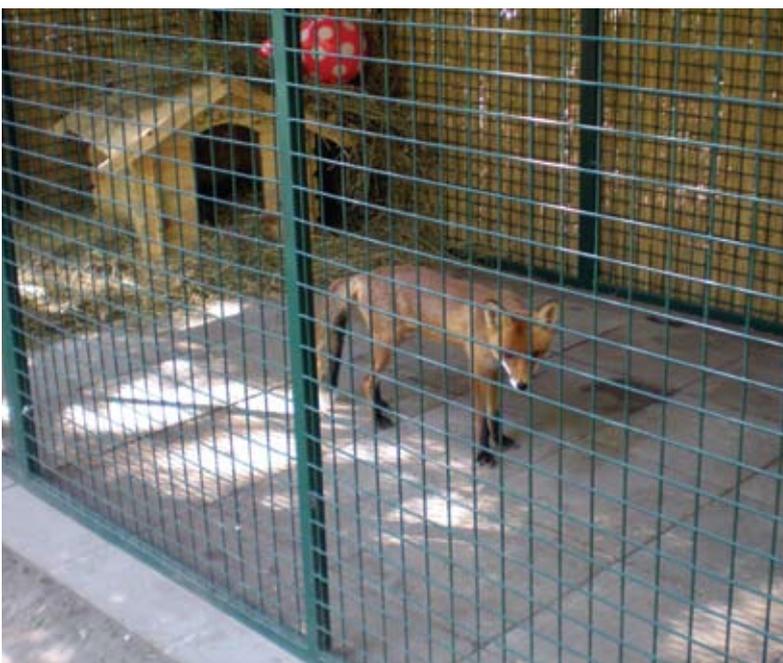


Figure 18

Abonyi Wildlife Park.

According to the minimum standards for the keeping of animals, Annex to JD3/2001, enclosures exhibiting red fox (*Vulpes vulpes*) must be 30m², provide opportunities for digging and shelter. This enclosure does not meet the legal requirements.

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Born Free Foundation

Born Free Foundation is an international wildlife charity, founded by Virginia McKenna and Bill Travers following their starring roles in the classic film Born Free. Today, led by their son Will Travers, Born Free is working worldwide for wild animal welfare and compassionate conservation.

Born Free supports and manages a diverse range of projects and campaigns. We embrace both compassion and science in setting an agenda that seeks to influence, inspire and encourage a change in public opinion away from keeping wild animals in captivity, while in the short term working with governments, the travel industry and likeminded organisations to seek compliance with existing legislation and improve the welfare conditions for wild animals currently held in zoos. Via our Compassionate Conservation agenda, we provide protection for threatened species and their habitats across the globe. Working with local communities, Born Free develops humane solutions to ensure that people and wildlife can live together without conflict.

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ENDCAP

ENDCAP is a European coalition of 27 NGOs and wildlife professionals from 20 European countries that specialise in the welfare and protection of wild animals in captivity. Working with the European Institutions, national governments and experts, ENDCAP aims to improve knowledge and understanding of the needs of wild animals in captivity, uphold current legislation and seek higher standards, whilst challenging the concept of keeping wild animals in captivity. www.endcap.eu

EU Zoo Inquiry 2011

Project Manager: Daniel Turner Bsc (Hons) MBIol MSB. A biologist.

Daniel is Senior Operations Officer for the Born Free Foundation and has worked for the organisation since 2000, following two year's voluntary work in field conservation projects overseas. He is part of the team responsible for developing and managing Born Free's agenda for captive wild animal welfare, under the auspices for the organisation's core project, Zoo Check.

Report Methodology: For full details of methodology and to view the other Reports published as part of this project visit www.euzooinquiry.eu

Contact details: To discuss the issues raised in this document, or for further information on ENDCAP and the Europe's Forgotten Animals initiative, please contact Daniel Turner - daniel@bornfree.org.uk c/o Born Free Foundation, 3 Grove House, Foundry Lane, Horsham, W.Sussex RH13 5PL, UK. + 44 (0)1403 240 170

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