

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

MALTA



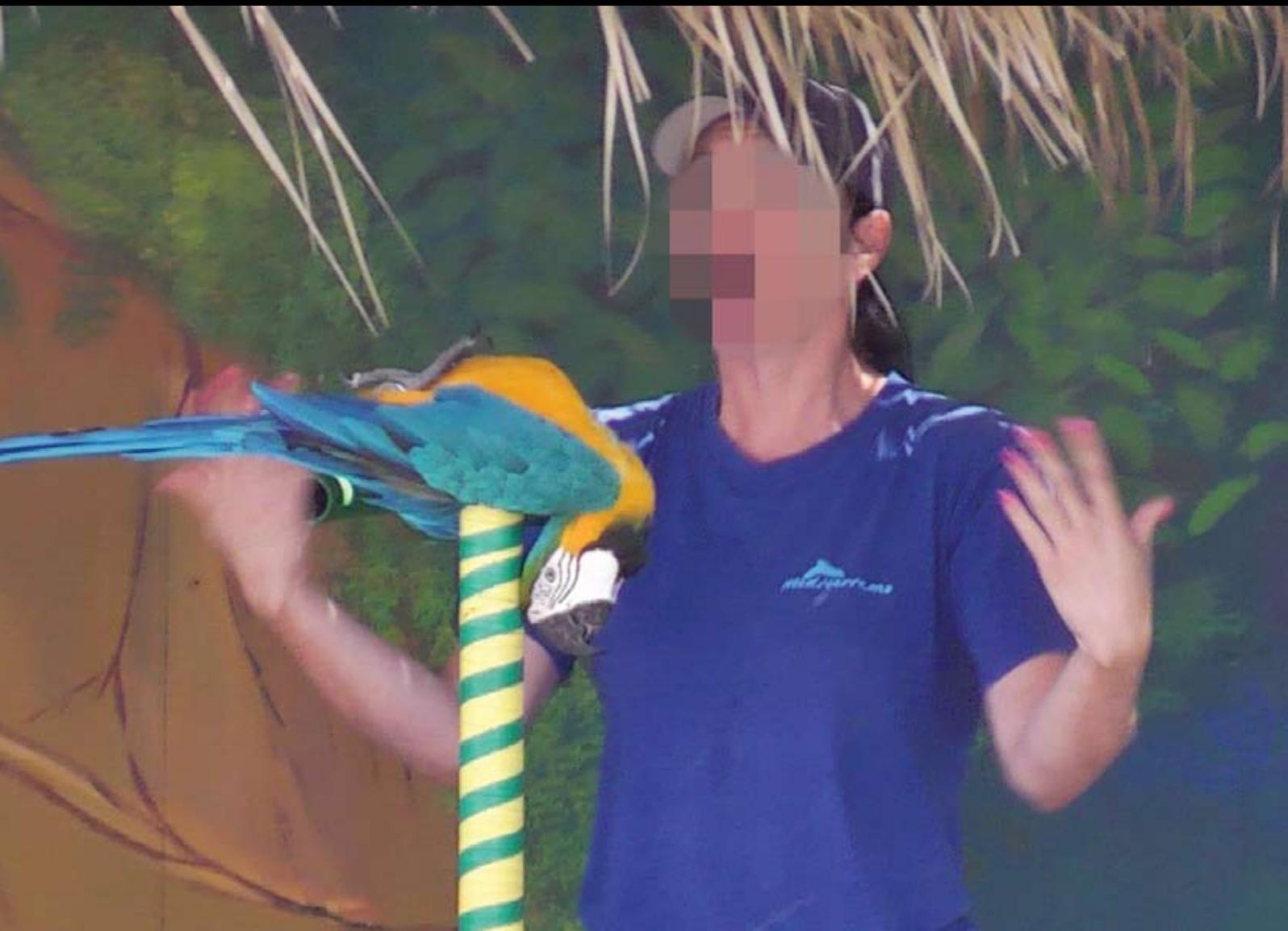
Written for the European coalition ENDCAP by the Born Free Foundation



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

Country Report **MALTA**



CONTENTS

	Page
ABBREVIATIONS USED	04
TERMS USED	04
SUMMARY	05
RECOMMENDATIONS	07
THE EU ZOO INQUIRY 2011	08
INTRODUCTION	09
METHODOLOGY	10
COUNTRY REPORT: MALTA	12
INTRODUCTION	13
RESULTS AND INTERPRETATION	16
GENERAL INFORMATION	16
CONSERVATION	17
EDUCATION	19
EVALUATION OF ANIMAL ENCLOSURES	23
EVALUATION OF ANIMAL WELFARE	27
CONCLUSION	29
REFERENCES	38

Born Free Foundation © March 2012

Report design by Bill Procter

Cover photograph by Jannes Pockele

Title page photographs taken at Mediterraneo Marine Park
and Il-Melita Gardens

ABBREVIATIONS USED

AWA	Maltese Animal Welfare Act, Chapter 439 (Act XXV of 2001, amended)
APOS	Animal Protection Ordinance of Switzerland, Tierschutzverordnung 2008
CBD	Convention on Biodiversity (1992)
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
LN265/2003	The Keeping of Wild Animals in Zoos Regulations, 2003
MEPA	Malta Environment and Planning Authority
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. Dolphinarium, 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. (Glowka *et al.*, 1994).

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. (Dudley, 2008)

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 Malta.

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

Three zoos in Malta (two licensed zoos and one unlicensed zoo) were assessed as part of a pan-European project to evaluate the effectiveness and degree 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 23 species (including subspecies where appropriate) and 28 *species holdings* were observed in 24 enclosures in the three 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 Animal Welfare Act ('AWA'), Chapter 439 (Act nr XXV of 2001, as amended by Legal Notice 426 of 2007; Act V of 2007 and V of 2011) and specifically, Legal Notice 265 of 2003 '*The Keeping of Wild Animals in Zoos Regulations*' ('LN265/2003'). Key findings were:

- **The Directive has been accurately transposed into the Legal Notice 265 of 2003 '*The Keeping of Wild Animals in Zoos Regulations*', which is enacted through the Animal Welfare Act (Chapter 439).** The LN265/2003 includes no additional provisions or guidance to aid its effective application.
- **The Veterinary Regulation Directorate of the Agriculture and Fisheries Regulation Department, within the Ministry of Resources and Rural Affairs, regulates zoos in Malta.** It is assisted by the Animal Welfare Council and the zoo inspectorate, the Animal Welfare Officers, under the direction of the Director of Veterinary Services.
- **According to the Member State Questionnaire, at the time of the investigation (June 2010) there were three licensed zoos, and at least one operational but unlicensed zoo.**
- **Zoo regulation and inspection lacks a structured procedure, standardised inspection criteria and transparency.** The LN265/2003 lacks legal provisions concerning the licensing and inspection of zoos. This appears to be managed at the discretion of the Director of Veterinary Services.
- **The results of this assessment highlight inconsistencies in the interpretation and application of AWA and LN265/2003.** There is no set threshold on the numbers of animals for the requirement of the licence, therefore there appears to be no reason why Il-Melita Gardens should NOT be licensed and regulated as a zoo
- **The findings call into question the quality, regularity, governing criteria and procedures relating to zoo inspection.** Zoo inspections are supposed to take place each year yet, despite this, Malta's zoos are not meeting their legal obligations under LN265/2003. Many animals are housed in substandard conditions and penalties for non-compliance (under the AWA and LN265/2003) are not being applied
- **Despite the specific requirement for zoos in Malta to contribute to species conservation,** findings indicate that they make no significant contribution: few species are classified as global or European Threatened species (IUCN Red List of Threatened Species™ categorisation). None of the zoos appeared to undertake scientific research aimed at benefitting species conservation and only one of the 23 species observed, was involved in a '*species propagation programme*'.
- **Two zoos were identified as having removed animals from the wild.**
- **Species information was not available for half of the exhibited *species holdings* across the three zoos.**
- **Despite a public education programme in two of the zoos, activities appeared to exploit the animals and compromise their welfare.**

- **Two zoos surveyed encouraged the public to have direct contact with birds of prey, reptiles, macaw parrots, sea lions and bottlenose dolphins. The potential risk of physical injury and disease transmission, particularly zoonoses, appears to have been overlooked.**
- **There are no apparent measures to specifically protect the public (and zoo employees) in zoos in Malta despite the obvious potential risks of danger. LN265/2003 makes no reference to public safety.**
- **Poor levels of hygiene were observed in 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, 97% of the enclosures failed to meet all the minimum requirements of APOS.** The zoos involved appear to have given little consideration to the essential biological, spatial and behavioural needs of the animals.

RECOMMENDATIONS

The Veterinary Regulation Directorate and the Animal Welfare Council should take the necessary measures to:

- 1) Review zoological collection categorisation criteria and the exemption criteria (Article 2 of LN265/2003) so that definitions and requirements are accurately interpreted and explained in order to ensure all establishments that keep *any* number of animals of wild species are licensed and inspected.
- 2) Review procedures relating to zoo inspections and develop a centralised system of reporting, recording and monitoring such inspections to allow proper, transparent scrutiny and comparison.
- 3) Ensure, through effective enforcement, that all zoos (*as defined by the Directive*) abide by the requirements of national zoo law and that available penalties (Part XIV, AWA; Article 4(5), LN265/2003) are applied to zoos that fail to meet their legal obligations.
- 4) Publish guidance, as necessary, to assist zoos, enforcement personnel, veterinarians and other stakeholders to effectively and consistently interpret the requirements of LN265/2003, specifically with regard to their participation in, and their application of, recognised peer-reviewed conservation and education programmes.
- 5) Ensure that all national enforcement personnel and veterinarians involved in the inspection and regulation of zoos are equipped with relevant, regular training and skills relating to the care and welfare of wild animals in captivity.
- 6) Develop, through an independent, scientific body, species-specific standards for the keeping of animals in zoos based on their natural biology that will ensure appropriate animal husbandry, including guidance on environmental enrichment.
- 7) Ensure that all zoo employees with responsibility for animals have the necessary training and experience in animal care and husbandry.
- 8) Presentations using live animals should be discouraged, but where these do take place, they must be educational, present animals in a natural context and displaying natural behaviour and ensure the activities do not compromise the welfare of the animal(s) concerned. Concerning dolphinariums, the recommendations of the European Association for Aquatic Mammals (EAAM 1995) must be applied and enforced.
- 9) Prohibit all public contact with '*Hazardous Animals*' (as defined) and those known to harbour zoonoses (as defined). 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.
- 10) Consider increasing the requirements for zoos' commitment to scientific and conservation activities. This would help ensure that zoos in Malta dedicate more effort and resources to species conservation; the objective of the LN265/2003 and the Directive.
- 11) Ensure zoos keep and conserve predominantly nationally protected and European Threatened species rather than non-European species. All Threatened species, particularly European species, should be included in national and international cooperative Species Management Programmes.
- 12) Require zoo operators, irrespective of the type of zoo, to have an established education department with a published educational plan (WAZA), sufficiently resourced and staffed in order to inspire and encourage local and regional initiatives to raise awareness about the importance of conservation.

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 2009 and December 2010, 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.euzooinquiry.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. However a further report focusing on zoo regulation in **Spain** will be published in 2012.

MALTA

Country Report



INTRODUCTION

Malta became a Member of the European Union (EU) in May 2004. By April 2005, Malta, along with 24 other EU Member States, was required to have transposed and implemented the requirements of European Council Directive 1999/22/EC into its national law. The Directive has been transposed into national legislation by means of the Legal Notice 265 of 2003 *'The Keeping of Wild Animals in Zoos Regulations'* (LN265/2003), which is enacted by the Animal Welfare Act (AWA), Chapter 439 (Act nr XXV of 2001, as amended by Legal Notice 426 of 2007; Act V of 2007 and V of 2011). According to the European Commission, Malta achieved transposition of the Directive by the required deadline.

Responsibility for the implementation of zoo legislation in Malta falls to the Ministry of Resources and Rural Affairs. The Veterinary Regulation Directorate of the Agriculture and Fisheries Regulation Department regulates and licenses zoos (Standard Member State Questionnaire). The zoo licence is issued following an inspection of the premises by Government-appointed veterinary officers and/or Animal Welfare Officers (Article 44, AWA).

As part of this investigation, the Competent Authority was asked to complete a Standard Member State Questionnaire. Information received from the Veterinary Regulation Directorate of the Agriculture and Fisheries Regulation Department (Standard Member State Questionnaire, pers. comm., 17th November 2009) has been included throughout this report.

The AWA provides a legislative framework for the protection of *'animals kept for work, sport, companionship and food'* aimed at promoting the welfare of animals and preventing and punishing acts of ill-treatment (Part 1, Article 3, AWA). It includes provision for the Government to regulate the appropriate keeping, use and management of animals, taking on board the advice and expertise of the Council of Animal Welfare ('the Council') appointed by the Minister, which is Chaired by the Director of Veterinary Services ('the Director') (Articles 4 and 5, AWA). The Council, which advises the Minister on all matters affecting the health and welfare of animals (and related public health), consists of a representative from the veterinary services, a veterinary surgeon with experience in animal health medicine and another experienced in farm animal matters, two people representing the interests of animal welfare organisations and two people representing animal breeders and hunters (Articles 4(2) and 5, AWA). The Council can also appoint, when required, sub-committees to deal with specific matters, such as the development of specific guidance (Articles 4(7) and 5(a)i AWA). Article 7 of AWA, prescribes Regulations related to the keeping of animals, whilst Article 8 specifies criteria for the appropriate care of animals and their protection from pain, suffering and distress, imposing a 'duty of care' on any person who keeps any animal or who agrees to look after an animal. Other 'Parts' of the AWA prescribe regulations concerning 'animal housing systems' (Part VII), all of which are required to be met by those applying for an operating permit (Article 17), the 'breeding of animals' (Part VIII), the transportation of animals (Part IX), the 'use of animals at competitions' (Part X), and so on. Article 44 (Part XIII of AWA), requires the Government to establish Animal Welfare Officers who, under the direction of the Director, are responsible for the enforcement of the provisions of the AWA.

Zoos are regulated through the LN265/2003, enacted by Articles 7(2) and 8 of AWA, the Minister of Rural Affairs and the Environment. The content is a direct transposition of the Directive and unlike some EU Member States it contains no additional provisions. As stipulated by the Directive, LN265/2003 aims to protect wild fauna and conserve biodiversity through the licensing, inspection and regulation of zoos, in order to strengthen the role of zoos in the conservation of biodiversity (Article 1(2), LN265/2003). As stipulated in Part VII of AWA, establishments wishing to operate an 'animal housing system' in Malta are required to apply to the Competent Authority and provide a report as to how the 'system' will guarantee the animals' welfare. The Director, on the advice of the Council, considers each application before permission is granted (Article 17(2), AWA; Article 4(1), LN265/2003). Before granting, refusing, extending the period of, or significantly amending a zoo licence, an inspection by the Animal Welfare Officers and/or Government-appointed veterinarians and/or the Environmental Protection Department of the Malta Environment and Planning Authority (MEPA) are required to undertake an inspection of the premises to ensure the licensing conditions are met (Article 4(4), LN265/2003) (Standard Member State Questionnaire). MEPA's obligations concern the regulation of CITES certification. According to the Standard Member State Questionnaire, zoo licences are valid for one year and renewed annually. Zoo inspections are therefore

required on an annual basis. Should a zoo not meet the conditions of the zoo licence, the Competent Authority is obliged to provide advice accordingly. If compliance is not achieved within one year the Veterinary Services will withdraw or modify the licence and close the zoo or part thereof (Article 4(5), LN265/2003).

According to the Veterinary Regulation Directorate, there were a total of three licensed zoos in Malta (Standard Member State Questionnaire): *'one dolphinarium, one falconry and a bird park'*. In addition, there was also a small, unlicensed collection of animals at Il-Melita Gardens and a larger collection, called the LWS Animal Park, which was closed for renovation at the time (International Animal Rescue Malta, pers. comm., July 2009). Since the initial assessment of Malta's zoos, the Competent Authority has received two further zoo licence applications (Permanent Representative to Malta of the EU, pers. comm., 22nd March 2012). A recent follow-up visit in February 2012 (explained on page 36), identified that one of these establishments ('Montekristo Zoo') was open to the public but was yet to receive its operating licence.

Zoo licensing requirements

As indicated above, *'The Keeping of Wild Animals in Zoos Regulations (2003)'* is a direct transposition of the Directive. As in Article 2 of the Directive, 'zoos', as defined by Article 2 of LN265/2003 are *'all permanent establishments where animals of wild species are kept for exhibition to the public for 7 or more days a year'*. Similarly establishments exempt from this regulation are *'circuses, pet shops and establishments the Veterinary Services exempts from the requirements of these regulations on the grounds that they do not exhibit a significant number of animals or species to the public and that the exemption will not jeopardise the objectives of these regulations.'* The Competent Authority has confirmed that Malta has not placed any thresholds on numbers of animals for the requirement of the licence because zoos in Malta have a very limited number of animals (Standard Member State Questionnaire).

Article 4 of LN265/2003 states that all licensed zoos must ensure they meet the requirements of Article 3. These requirements include:

Conservation

Adopting the same objective as the Directive, LN265/2003 specifies that zoos must play an active role in the conservation of biodiversity by:

'participating in research from which conservation benefits accrue to the species, and, or training in relevant conservation skills, and, or the exchange of information relating to species conservation and/or, where appropriate, captive breeding, repopulation or reintroduction of species into the wild,'

(Article 3(1) of LN265/2003)

Part VIII of AWA indicates that the Government can prescribe additional requirements for the breeding of animals. These include: specifying which species and categories of animals may be used for breeding purposes; prohibiting the separation of parent and young until the offspring is of an appropriate age; the requirement that all persons involved in animal breeding are responsible for the health and welfare of the animals concerned; and that no offspring, separated from their parents, shall be sold or offered for sale (Articles 20 and 21 of AWA). However LN265/2003 has not incorporated any of these requirements and although the Competent Authority does apparently provide, on an annual basis, guidance to zoo operators on research and conservation activities (Standard Member State Questionnaire), there does not appear to be any published written guidance. Nor is there a process of evaluation to assess the 'success' of efforts undertaken by zoos to meet the above requirements.

Education

Zoos in Malta are required to:

'promote public education and awareness in relation to the conservation of biodiversity, particularly by providing information about the species exhibited and their natural habitats,'

(Article 3(2) of LN265/2003)

According to the Standard Member State Questionnaire, the Competent Authority reviews all zoo publications and flyers aimed at educating and informing the visiting public. There are no written requirements or guidance on educational

activities undertaken by zoos, nor does there appear to be an evaluation to assess the 'success' of efforts undertaken by zoos to educate the public about the conservation of biodiversity (Standard Member State Questionnaire).

Animal welfare provisions

Enacted through the AWA, which specifies a 'duty of care' on any person who keeps any animal or who agrees to look after an animal, LN265/2003 specifies that zoos must:

'accommodate their animals under conditions which aim to satisfy the biological and conservation requirements of the individual species, inter alia, by providing species specific enrichment of the enclosures; and maintaining a high standard of animal husbandry with a developed programme of preventive and curative veterinary care and nutrition.'

(Article 3(3) of LN265/2003)

Article 7(2)b of AWA, indicates that the Government can make additional requirements with regards how animals shall be segregated according to age, sex, or species; the space which animals are allowed; and matters relative to the hygiene of animals and their housing. LN265/2003 has not incorporated any of these requirements. Furthermore, although the Competent Authority does apparently already provide advice to the zoo operator on such matters, Veterinary Services have indicated that it is interested in establishing minimum standards for the keeping of species and the need for further training of zoo personnel (Standard Member State Questionnaire).

In addition to these requirements, zoos in Malta are also expected to prevent the escape of animals and the intrusion of outside pests and vermin (Article 3(4), LN265/2003) and, as specified by Article 3(4) of the Directive, maintain an up-to-date stock list of the animals and numbers of species kept (Article 3(5), LN265/2003) (Standard Member State Questionnaire).

The Zoo Investigation

A total of three zoos in Malta (as defined) were selected. Data was collected at the following zoos during June 2010 (Fig. 1):

- Il-Melita Gardens
- Malta Falconry Centre
- Mediterraneo Marine Park



Figure 1 Geographical locations of the three zoos visited in Malta.

The Competent Authority does not recognise the animal enclosures at Il-Melita Gardens as a zoo and it remains unlicensed. However, taking into account the definition of a zoo (Article 2 of LN265/2003) and the fact that there are no thresholds on numbers of animals for the requirement of the licence (Standard Member State Questionnaire), Il-Melita Gardens was included in this investigation.

In February 2012, a follow up visit was made to the Malta Falconry Centre and Il-Melita Gardens to determine if there had been any improvements since the 2010 visits. Any changes were noted. In addition, a visit was made to LWS Animal Park and 'Montekristo Zoo', the latter a recently established zoo in Malta, and although no thorough assessment of its conditions was undertaken, observations were made and noted.

RESULTS AND INTERPRETATION

GENERAL ZOO INFORMATION

Overview

The investigation evaluated three zoos in Malta. All of the zoos are privately-owned and meet the definition of a 'zoo', as specified by Article 2, LN265/2003. One of the three zoos (Il-Melita Gardens) was, at the time of the investigation, unlicensed. Entrance fees for one adult ranged from free entrance (Il-Melita Gardens) to €16 (Mediterraneo Marine Park).

At the time of the assessment, none of the zoos were members of a national or international zoo association. However, Mediterraneo Marine Park is a member of the European Association for Aquatic Mammals (EAAM). This is an organisation 'of people interested in marine mammals' which encourages its' members to take part in 'research, medical care, training, education, conservation, management and related activities' (EAAM website).

A total of 23 species (including subspecies where appropriate) and 28 *species holdings* were identified in 24 enclosures in the three zoos (see online Methodology).

Despite all three 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 information, and the zoo investigations themselves.

Prevention of animal escapes

In Malta, all zoos are required to:

- *'prevent the escape of animals in order to avoid possible ecological threats to indigenous species and preventing intrusion of outside pests and vermin.'*

(Article 3(4), LN265/2003)

Of the three zoos assessed, Mediterraneo Marine Park and the Malta Falconry Centre were observed as having a perimeter fence or zoo boundary that appeared capable of preventing either the escape of a terrestrial animal from the zoo or the intrusion of native terrestrial wildlife. Il-Melita Gardens had no perimeter fence.

No free-roaming animals were observed during the visits to Mediterraneo Marine Park and the Malta Falconry Centre. However, a feral cat was observed in an enclosure containing tammar wallaby (*Macropus eugenii*) at Il-Melita Gardens. At the Malta Falconry Centre birds were flown daily as part of a bird of prey demonstration. Non-native bird species have reportedly escaped during flight demonstrations at this facility.

Public placed at risk of injury and disease transmission

There are no apparent measures to specifically protect the public (and zoo employees) despite the obvious potential risks of danger and LN265/2003 makes no reference to public safety.

Of the three zoos, Mediterraneo Marine Park and the Malta Falconry Centre actively encouraged the public to have direct contact with wild animals. This is promoted as a recreational and educational experience on the zoos' websites. Mediterraneo Marine Park offers 'a unique opportunity for adults and children to admire, learn, enjoy and interact with dolphins, parrots, iguanas and more (...) see, hear, touch animals...'. Mediterraneo Marine Park also offers the public the chance to touch and 'swim with' dolphins, 'stroke' and 'kiss' a sea lion and hold, 'stroke' and pose for a souvenir photograph with a variety of animals from parrots, reptiles, amphibians and arachnids to the dolphins (Mediterraneo Marine Park website). The Malta Falconry Centre also offers the public a variety of animal handling opportunities that include 'hands-on experiences, involving flying the magnificent creatures...[and] handling sessions'. Animal handling

opportunities at both the Mediterraneo Marine Park and the Malta Falconry Centre exist under the supervision of zoo staff. However, at no time during the observed animal handling activities were members of the public asked to wash their hands.

Of the 24 observed and assessed enclosures at the three zoos, five contained a Category 1 'Greater Risk' hazardous animal but at no point were members of the public able to have unplanned, direct contact with these animals. However, four of the five enclosures did not have signage warning the public about the potential risks involved.

Figure 2

Mediterraneo Marine Park.

A child holds a blue-and-yellow macaw (*Ara ararauna*) in an unnatural pose for a souvenir photograph. Parrots often carry *psittacosis*, a bacterial infection, without showing symptoms. Some birds die of it, particularly if they become injured or stressed. This disease can be contracted by humans directly from the birds or their airborne faecal material - if left untreated it can be fatal (Glendell, 2008).



CONSERVATION

The conservation of biodiversity is the main objective of both the Directive and LN265/2003. While LN265/2003 requires zoos in Malta to participate in at least one of four possible conservation activities (Article 3(1), LN265/2003) there are no specific specifications and, unlike many other EU Member States, there is no particular emphasis on the conservation of threatened species. Evaluation of the conservation commitment of Malta's zoos included an assessment of all four possible conservation activities.

The results indicate that the zoos' overall commitment to the conservation of biodiversity is low.

Percentage of Threatened Species

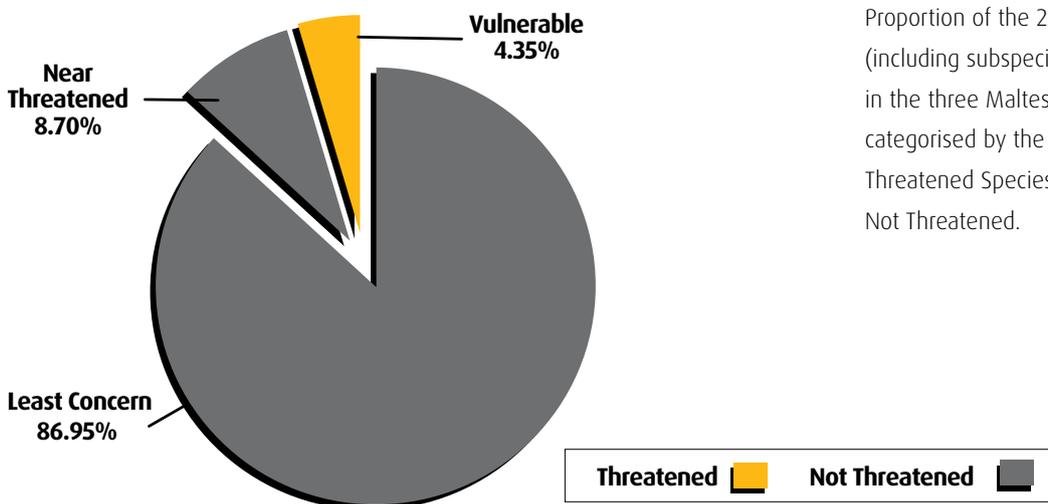


Figure 3

Proportion of the 23 species identified (including subspecies where appropriate) in the three Maltese 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	0	0	0	0	0	0	0	0%
Data Deficient	0	0	0	0	0	0	0	0%
Least Concern	3	16	1	0	0	0	20	86.95%
Near Threatened	0	2	0	0	0	0	2	8.7%
Vulnerable	0	0	1	0	0	0	0	4.35%
Endangered	0	0	0	0	0	0	0	0%
Critically Endangered	0	0	0	0	0	0	0	0%
Extinct in Wild	0	0	0	0	0	0	0	0%
Total No. Species	3	18	2	0	0	0	23	100%
Proportion of total no. Species (%)	13.04%	78.26%	8.7%	0%	0%	0%		

Table 1 Proportion of the 23 species (including subspecies where appropriate) identified in three Maltese zoos, categorised as Threatened and Not Threatened by the IUCN Red List of Threatened Species™ by taxa.

The results indicate that only one species (4.35% of the total number of species) from the selected zoos can be described as globally Threatened (Table 1) (IUCN Red List of Threatened Species™ categorisation). *Testudo graeca* is categorised as *Vulnerable*. The remaining 22 species (96% of the observed species) were classified as Not Threatened being classified either as *Least Concern* (86.95%) or *Near Threatened* (8.70%) by the IUCN Red List of Threatened Species™ categorisation. These data indicate that the great majority of species exhibited in the zoos were of a low conservation importance. Of the three zoos, only Mediterraneo Marine Park exhibited *T. graeca*, whilst both Il-Melita Gardens and Malta Falconry Centre did not appear to keep any globally Threatened species.

Of the five species of mammals, reptiles, amphibians, invertebrates and fish observed at the three zoos, 40% (n=2) are listed on the IUCN European Red List, which lists Threatened species of mammal, reptile, fish, amphibian and invertebrate. This includes the following: one mammal that is listed as *Data Deficient* (*Tursiops truncatus*) and one reptile species listed as *Vulnerable* (*T. graeca*). There were no European Threatened species of amphibian, invertebrate or fish observed at any of the three zoos. In addition, a total of seven birds (39% of 18 observed bird species; 30% of all 23 observed animal species) 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)). Four of the seven species are listed as 'Secure' (e.g. *Milvus migrans*; *Phasianus colchicus*); one as 'Vulnerable', (*Falco biarmicus*), one as 'Rare' (*Aquila chrysaetos*); and one as 'Declining' (*Tyto alba*).

Participation in European coordinated captive breeding programmes

One of the four conservation options available to Maltese zoos is the participation in captive breeding intended for the repopulation or reintroduction of species into the wild (Article 3(1), LN265/2003). No further written explanation is available to help interpret these largely ambiguous requirements. 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 confirmed participation of individuals of those species within the recognised European Species Management Programmes.

Percentage of species in Maltese zoos that have coordinated captive breeding programmes (EEPs or ESBs)

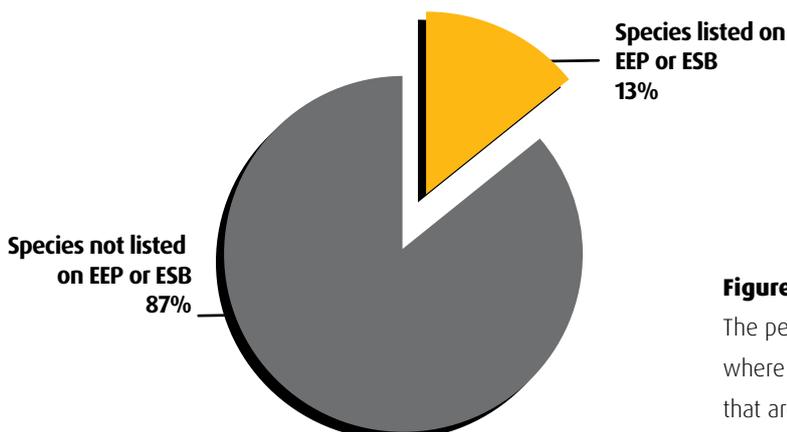


Figure 4

The percentage of the 23 species (including subspecies where appropriate) identified in the three Maltese zoos that are part of an ESB or EEP.

Only three of the 23 species (13%) observed in the zoos are listed on either the register of European Endangered Species Breeding Programmes (EEPs) or European Stud Books (ESBs) (Fig 4). These include *T. truncatus*, *Otaria flavescens* and *M. eugenii*. Only Mediterraneo Marine Park and Il-Melita Gardens kept at least one species listed on European Species Management Programmes, with Mediterraneo Marine Park keeping the highest number of species (n=2) registered on the EEP/ESB Programmes.

None of the zoos completed and returned the Standard Zoo Questionnaire, which provided each zoo with an opportunity to inform the authors, amongst other issues, about their conservation activities. Instead reference was made to published materials, including the zoos' websites. Two of the three zoos do not appear to be participating in any cooperative captive species breeding programmes. This included the Malta Falconry Centre which despite claiming to be involved in captive breeding for reintroduction purposes, did not conduct such activities in a way that could be confirmed. Only Mediterraneo Marine Park appears to be participating in a European Species Management Programme, which states that three bottlenose dolphin (*T. truncatus*) offspring have been born at the facility in the last few years, as part of the zoo's 'species propagation programme' (...) 'planned in Malta for some time' (Times of Malta, 2010a and 2010b). However, this claim could not be supported by any evidence found in published materials and furthermore, records indicate that the majority of dolphins at Mediterraneo Marine Park have been sourced from the wild (Cetabase.com; Mediterraneo Marine Park pers. comm., June 2010). **The results indicate a minimal commitment by the selected zoos to *ex situ* conservation.**

Aside from *ex situ* conservation programmes, some zoos in EU Member States are contributing to *in situ* conservation, as part of the European Community's obligation to adopt measures under Article 9 of the *Convention on Biological Diversity* (1992) (CBD website). However, no evidence could be found to confirm that any of the zoos assessed in Malta are engaged in such programmes. News reports suggest that both the Mediterraneo Marine Park and the Malta Falconry Centre had previously applied for permits to establish an on-site rehabilitation centre for the eventual release of stranded dolphins (Mediterraneo Marine Park) (European Cetacean Bycatch Campaign, 2003) and rescued birds (the Malta Falconry Centre) (Farrugia, 2008), but the existence of such programmes today (in 2012) could not be confirmed. Apparently there have been various legal cases and challenges brought against the Malta Falconry Centre by BirdLife Malta for the unauthorised possession of protected species that had been confiscated by the authorities (Malta Today, 2008; Times of Malta, 2008a), for poor medical treatment of rescued birds, illegal keeping of wild birds in captivity and that the Centre has not been licensed by MEPA to rehabilitate wild birds (Birdlife Malta website, 2008). At the time of the assessment, the Malta Falconry Centre was freely selling barn owl (*Tyto alba*) and harrier hawk (*Polyboroides typus*) chicks to the public at €100 each and €500 each, respectively. This does not appear to be part of a species conservation programme and these actions, although not regulated by LN265/2003, appear to contravene the specifications of Part VIII of the AWA.

Scientific research is another possible option for Maltese zoos to meet their obligations to conserve biodiversity. The Competent Authority apparently advises the zoos on relevant research activities on an annual basis (Standard Member State Questionnaire). However, findings indicate that none of the zoos are actively participating in research from which conservation benefits accrue to the species concerned (as required by Article 3(1), LN265/2003). This is despite claims by Mediterraneo Marine Park that it invests 'a lot in research', which focuses 'primarily on the conservation of marine species'. The only identified research published by this facility involved investigating fecal progesterone as a tool to monitor reproductive activity in captive female bottlenose dolphins (*T. truncatus*) (Biancani *et al.*, 2009), which would not appear to benefit the conservation of the species.

EDUCATION

Zoos in Malta are not only required to promote public awareness and educate the public about the conservation of biodiversity, but further ensure the availability of species information for all species exhibited (Article 3(2), LN265/2003). These are also the requirements of Article 3(2) of the Directive.

Of the three zoos, two (Mediterraneo Marine Park and the Malta Falconry Centre) provided additional programmes advertised as being educational, for both school children and members of the public, which apparently focused on learning through fun and animal interaction. There were no identified educational activities at Il-Melita Gardens.

Mediterraneo Marine Park appeared to offer the most extensive programme of educational activities, which included a classroom to accommodate visiting schools and a variety of animal interactive presentations. The animal presentations which involved sessions with bottlenose dolphins (*T. truncatus*), sea lions (*O. flavescens*) and a variety of species of parrot (*Ara ararauna*, *Ara chloropterus*, *Amazona amazonica* and *Cacatua moluccensis*) were available to both school groups and members of the public. The Park also had a reptile house, where people were offered the opportunity to hold and touch a variety of reptiles, amphibians and spiders.

School groups are encouraged to engage with the 'Learning through Edutainment' programme, which offers a variety of 'Edutainment Programmes', 'Interactive Programmes' and public presentations throughout the day. The 'Edutainment Programmes', at an additional cost of up to €4.50 per student, involve a workshop where the characteristics and lifecycle of dolphins, sea lions or birds are compared to those of humans; whilst the 'Interactive Programme', priced at €30 per student, also includes the opportunity to touch, feed and/or have an opportunity 'to try the positive reinforcement technique' with the dolphins, feed the sea lions and touch and feed the parrots. Both programmes have a capacity of up to 25 people and are promoted as an opportunity to 'appreciate the environment around us' and claimed to advocate a 'duty of care' towards animals (Mediterraneo Marine Park Edutainment booklet). All animal contact is under the supervision of zoo staff (Mediterraneo Marine Park website). The Mediterraneo Marine Park website also advertises the opportunity for members of the public to participate in the 'Interactive Programmes', which appear to have a similar format to those offered to schools, and involves a 15 to 20 minute interactive session priced at an additional cost of between €25 to €105 (which includes the park entrance fee), dependent upon the type, the number of Programmes booked and the season. The investigator was unable to participate in these Programmes and therefore assess their quality. However, it was noted that the species information signage at the zoo and the species-specific information on the website was very limited, and largely anecdotal, whilst photographs on the website displayed animals performing unnatural behaviors, such as beached dolphins, a sea lion standing on its back flippers, a sea lion 'kissing' a child and a macaw riding a bicycle along a tightrope (Mediterraneo Marine Park website). This is not consistent with the statement made by the Park's Manager that Mediterraneo Marine Park will place a greater emphasis on public educational programmes (Times of Malta, 2010b).

Mediterraneo Marine Park also offers the public the opportunity to swim with their dolphins in specially organised sessions costing up to €120 per person for a 30 minute 'swim', under the supervision of a dolphin trainer. It is noted that the participant is presented with a recording of an educational documentary (Mediterraneo Marine Park website). Swim with sessions with the five adult dolphins take place up to five times daily, in addition to the two public presentations.

The Malta Falconry Centre also offered a variety of activities. This included interaction and direct contact with a variety of species of birds of prey (e.g. Bengal eagle owl), 'behind the scenes' tours (for their members only) and outreach educational talks at schools, where a variety of birds are taken out of the zoo and into the classroom (Malta Falconry Centre website; Times of Malta website, 2008b).

Animal shows

Mediterraneo Marine Park and the Malta Falconry Centre both host animal shows to entertain the visiting public.

Mediterraneo Marine Park has six daily 'animal presentations', two shows for each of the presentations: bottlenose dolphins (*T. truncatus*), Patagonian sea lions (*O. flavescens*) and a variety of parrots (*A. ararauna*, *A. chloropterus*, *A. amazonica* and *C. moluccensis*). The presentations reportedly offer an 'entertaining and educational performance', 'blended with humor and an informative commentary' that includes 'colours, sounds and secrets' of the performing animals (Mediterraneo Marine Park website). The cost of an adult 'Day Show Block' is €16. Each animal presentation

was approximately 25 minutes in length, it was accompanied by loud music and it consisted of the animals performing largely unnatural, circus-like and comical 'anthropomorphic' behaviour.

Figure 5

Mediterraneo Marine Park.
During the 'Parrot Show', parrot species, like this blue-and-yellow macaw (*A. ararauna*) performed unnatural behaviour to the public. Such activities do not comply with legal requirements that require zoos to 'provide information about the species exhibited and their natural habitats'.



Descriptions:

The *parrot show* involved the animals performing somersaults and acrobatics, head-bobbing in time to clapping, 'playing' basketball and 'driving' a variety of toy vehicles including a truck, scooter and roller-skates, to entertain the audience. Commentary mainly narrated 'the story', but it did include information on their diet, the way species use their beak and their intelligence. However, there was no reference to the conservation of the species. Parrots were able to be handled by the public after the show for souvenir photographs.

The *sea lion show* consisted of a variety of tricks and stunts, including standing upright on their back flippers. Their unique biological characteristics and information regarding conservation were not included in the commentary. Photographic opportunities were available after the show, where members of the public could touch and 'kiss' the animals.

Figure 6

Mediterraneo Marine Park.
Bottlenose dolphins (*T. truncatus*) performed a variety of circus-style tricks and stunts to loud music twice a day.



The *dolphin show*, described as ‘everything you need to know about bottlenose dolphins’ (Mediterraneo Marine Park website), did not include information about the species biology or conservation status. Instead the show largely consisted of unnatural behaviour: waving to the audience, rotating on the spot, lying on their backs, carrying a trainer on their backs, beaching, somersaults and acrobatics and flapping tails in time to the accompanying music. Photographic opportunities with the dolphins were available following the performance.

The *bird of prey show* at the Malta Falconry Centre featured a barn owl (*T. alba*), Harris hawk (*Parabuteo unicinctus*), hooded vulture (*Necrosyrtes monachus*) and a Bengal eagle owl (*Bubo bangalensis*) and included their flight around the arena. There was no music accompaniment and 41% of the presentation included informative commentary about the species’ biological characteristics and conservation status.

Minimal species information

A basic requirement of a zoo is to inform its visitors about the animals exhibited. Both the Directive and LN265/2003 require zoos to provide information about all the species exhibited, including information about their natural habitats (Article 3(2), LN265/2003).

Proportion of Species Information Signage Present

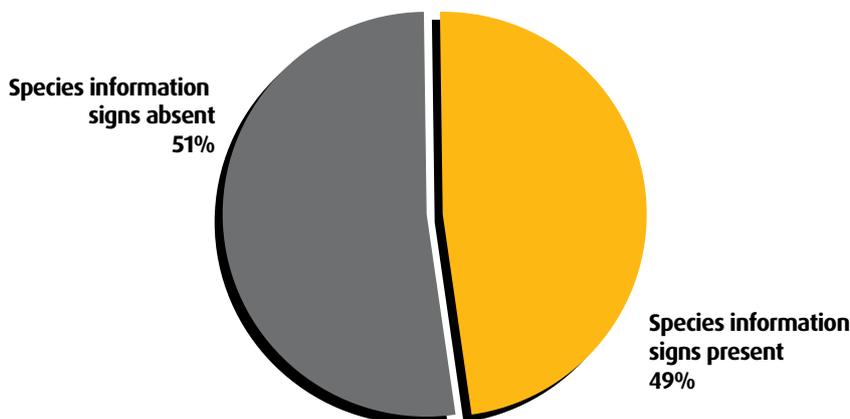


Figure 7

The average percentage of species information signage present or absent (for all 28 *species holdings*) in the three Maltese zoos.

On average, 51% of *species holdings* completely lacked any form of species information signage (Figs. 7 & 9). Species information signage was absent for all *species holdings* observed in Il-Melita Gardens, 33% in Mediterraneo Marine Park, and 20% in Malta Falconry Centre. Signage for 11% of *species holdings*, over the three zoos, was incorrect (inaccurate species’ scientific names), whilst others displayed only minimal information about the species. Figure 8 provides an overview of the content of the signage in the zoos.



Figure 8

Il-Melita.

At the three zoos, information about the species exhibited was often absent, despite the requirements of Article 3(2) of LN265/2003 and Article 3(2) of the Directive. These two enclosures exhibited tamar wallabies (*Macropus eugenii*), budgerigars (*Melopsittacus undulatus*) and Eurasian collared doves (*Streptopelia decaocto*)

Quality of Species Information Signs

As mentioned above, Article 3(2), LN265/2003 requires information about all the *species holdings* to be present, but it sets out no specific criteria as to what type of information should be made available to the public (other than information on the species' natural habitat). Analysis of the signage in 24 enclosures in the three zoos was conducted using the requirements of the SMZP (as has been the case throughout the EU Zoo Inquiry 2011).

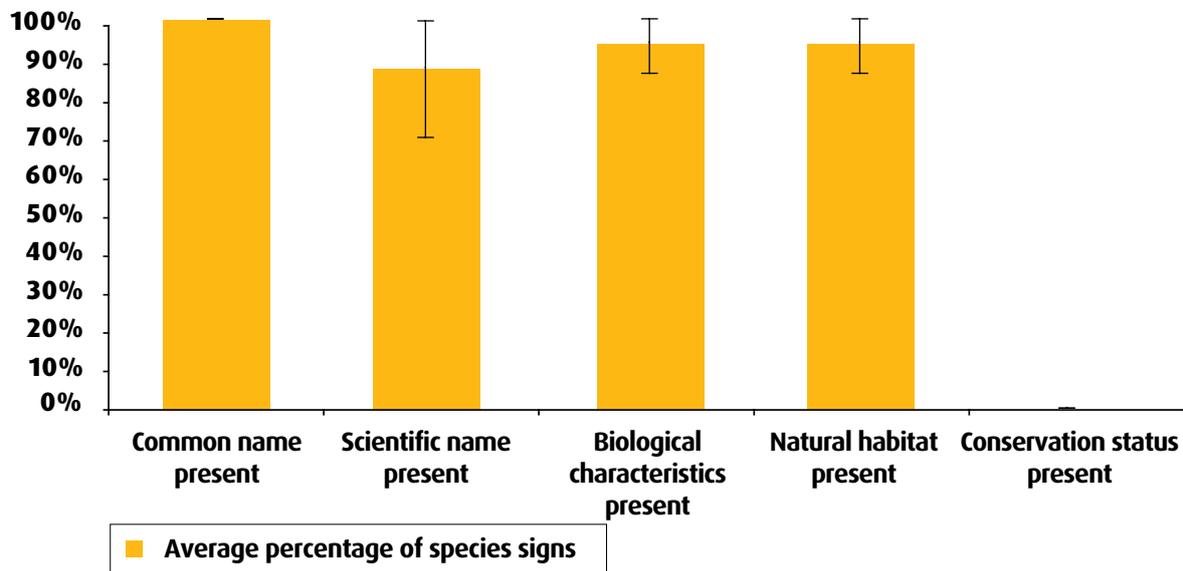


Figure 9 Content of species information signage within the three Maltese zoos. Each column represents specific information, as indicated by best practice criteria (SMZP). Each value (e.g. Scientific name present, 88%) represents the average of the 16 species information signs observed in 24 enclosures in the three 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 scientific name varied considerably between zoos in comparison to the presence of species common name)..

The results (Fig. 9) show that, of the signage present on the enclosures, 100% **did not** contain all the required information, with 100% not including reference to the species conservation status and 12% not including reference to species scientific name.

EVALUATION OF ANIMAL ENCLOSURES

To evaluate the suitability and quality of each of the 24 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 as required by LN265/2003.

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)

Drinking water for some of the animals in all the zoos was observed to be dirty and unhygienic.

Freedom from Discomfort: Provision of a Suitable Environment

Accommodate their animals under conditions which aim to satisfy the biological and conservation requirements of the individual species'

(Article 3(3), LN265/2003)

For many animals in the three zoos, conditions were often cramped and did not adequately take into account the needs of the species, especially wide-ranging species and in particular the marine mammals at Mediterraneo Marine Park. Few enclosures appeared to have sufficient shade to allow the animals to escape the extreme temperatures in both the Malta Falconry Centre and Mediterraneo Marine Park, and some of the pools in Mediterraneo Marine Park appeared to be of an insufficient depth relative to the needs of the species contained. As well as inadequate cover to escape from the high temperatures, enclosures in all three zoos were also lacking shelters to allow the animals to seek refuge and privacy from view.



Figure 10

Malta Falconry Centre.

Although regarded as common practice, tethering a bird of prey, as opposed to housing it in an aviary, restricts movement and prevents the bird from expressing natural behaviour. The barn owl (*T. alba*) is predominantly a nocturnal species, most active at night (Barn Owl Conservation Trust website).

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

'Providing 'a developed programme of preventive and curative veterinary care and nutrition,'

(Article 3(3) of LN265/2003)

Poor levels of hygiene, including an unacceptable build-up of faeces and unhygienic drinking water, were observed in enclosures in each of the selected zoos. Of particular note were the enclosures containing the collared dove (*S. decaocto*) and budgerigar (*M. undulatus*) at Il-Melita Gardens, and the enclosure exhibiting cockatiel (*Nymphicus hollandicus*) at Mediterraneo Marine Park. Also at Mediterraneo Marine Park there was a male pheasant (*Phasianus colchicus*) that appeared unusually lethargic, lying at the base of its cage in direct sunlight.

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

'Providing species-specific enrichment of the enclosures; and maintaining a high standard of animal husbandry'

(Article 3(3), LN265/2003)

Many enclosures lacked the appropriate facilities, furnishings and environmental enrichment that would permit and encourage the animals to rest, seek shelter or privacy, exercise and carry out natural behaviours. Species requiring adequate features to climb, bathe, dive, fly or that needed a suitable substrate to dig or burrow in, were often housed in conditions where such natural behaviours were compromised or prevented.

Some enclosures at the Malta Falconry Centre were noticeably overcrowded and at Mediterraneo Marine Park the pools for the sea lions (*O. flavescens*) appeared of an inadequate size and depth.

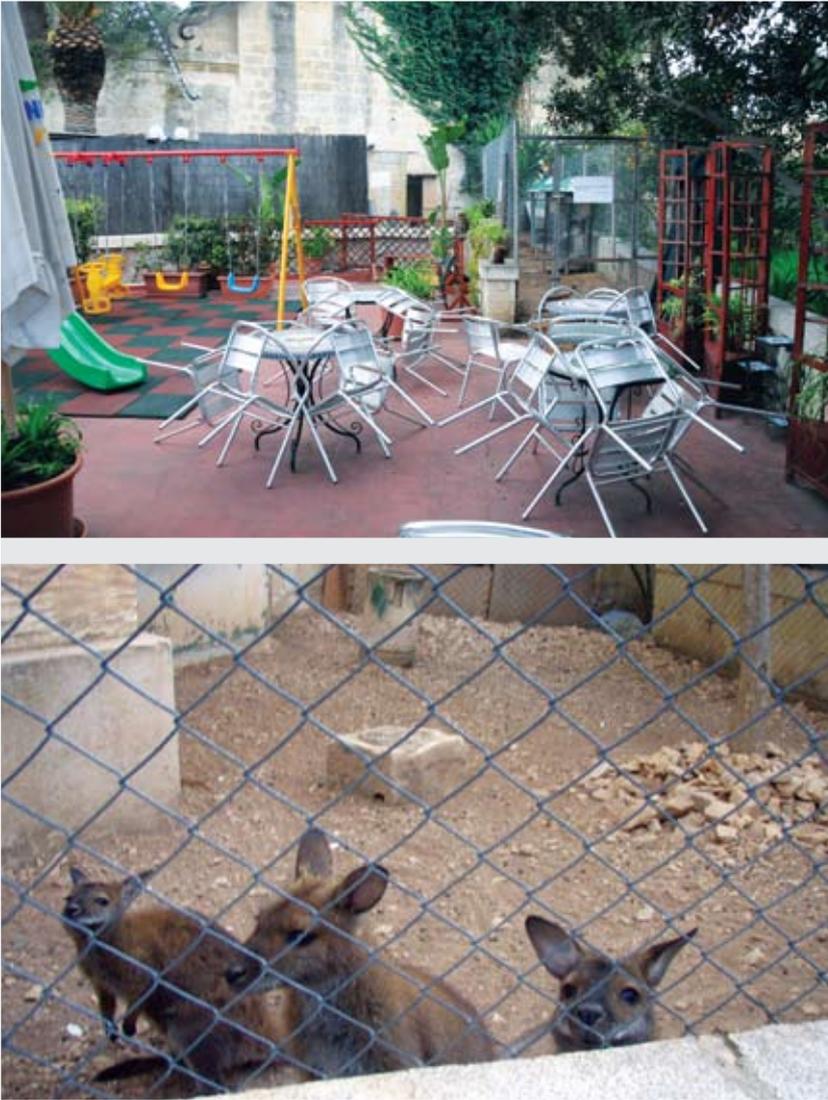


Figure 11

Il-Melita.

This enclosure is not only adjacent to a bar and children's play area, but it lacks environmental complexity and the ability for these nocturnal animals to express natural behaviour. Originating from Australia, the tammar wallaby (*M. eugenii*) spends the night-time in grassland and the daytime in shrub. Under these conditions, the welfare of these animals is likely to be compromised.

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

Article 8 of AWA, specifies the need for the animals to be appropriately cared for and their protection from pain, suffering and distress, imposing a 'duty of care' on any person who keeps any animal or who agrees to look after an animal.

The constant loud music playing during performances and around the enclosures at Mediterraneo Marine Park is a concern as it could cause the animals unnecessary distress. This may also be the case for the animals at Il-Melita Gardens, which were housed in the outside area of a bar and food outlet known to host functions and parties. Although there was a sign asking people not to feed the animals, discarded food wrappers littered the floor of the wallabies' cage. Inappropriate foods may cause the animals harm.

Concerns exist regarding the possible stress caused to animals as a result of direct public contact, particularly encouraged at Mediterraneo Marine Park and the Malta Falconry Centre. This situation is possibly exacerbated by the fact that the animals were often unable to seek shelter or privacy from view or distance themselves from cage companions.

Numerous observations were recorded where the animals appeared agitated or displayed abnormal, repetitive behaviour associated with stress and poor welfare. In particular, the bottlenose dolphins (*T. truncatus*) continually circled the pool, and the Patagonian sea lions (*O. flavescens*) sat motionless in their holding pens at Mediterraneo Marine Park.

Environmental Quality of Enclosures

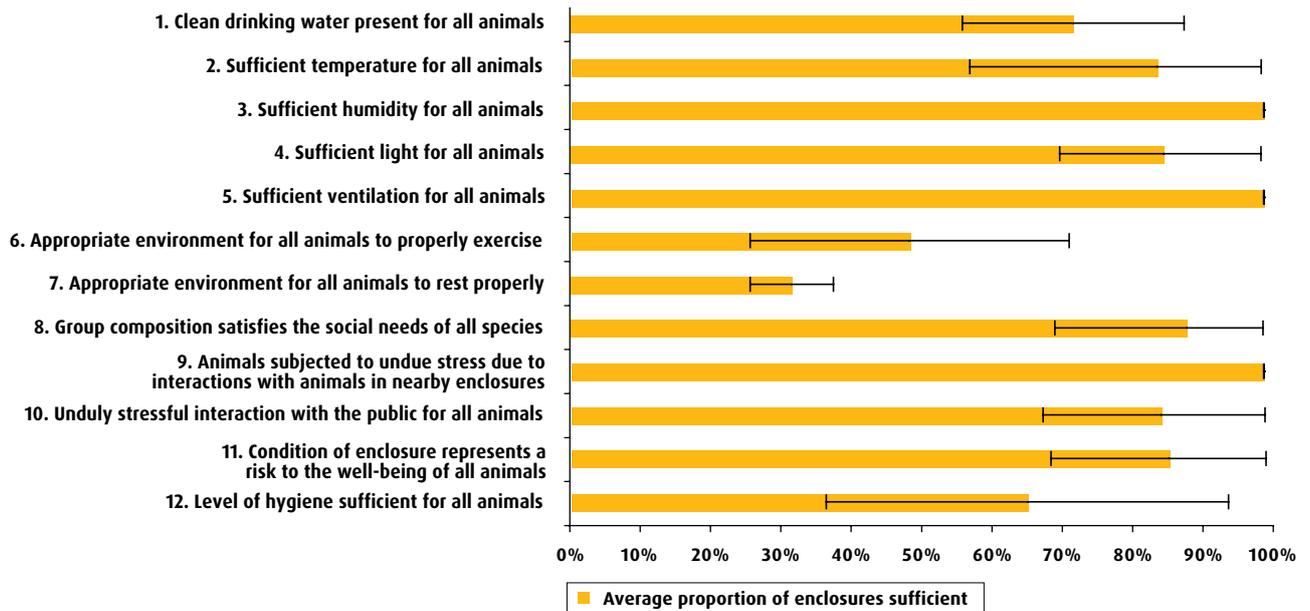


Figure 12 *Environmental quality* of the 24 enclosures from three Maltese zoos. Each column represents a criterion used to assess the suitability of the enclosures to meet the needs of the animals contained. Error bars are a visual representation of the standard deviation from the mean value, demonstrating the variation in performance amongst selected zoos (e.g. the ability for the animals to exercise in the enclosures varied considerably between zoos compared to the humidity which was consistently adequate). Where the presence of a condition or factor could not be determined, data were not included.

The results (Fig. 12) demonstrate that while most enclosures appeared to provide the animals with adequate light, ventilation and humidity at the time of assessment, lower values were recorded for: the availability of suitable facilities to allow the animal(s) to rest (on average, 68% of the randomly-selected enclosures failed to provide appropriate structures or facilities to allow the animals to rest properly); the opportunity for the animal(s) to exercise and express their natural locomotive behaviour (on average, 51% of the randomly-selected enclosures were of an inadequate size and complexity); the general cleanliness of the enclosures (on average, 34% of enclosures were considered unhygienic); provision of clean drinking water (on average, 27% of enclosures did not provide this basic requirement); interactions with the public (on average, 15% of enclosures subjected the animals to possible undue stress due to proximity of the public); and sufficient temperature (on average, 15% of enclosures subjected the animals to extremes of temperature).



Figure 13

Malta Falconry Centre.

There were numerous enclosures in all the zoos that were too small for the animal(s) exhibited. These Ruppell's griffon vultures (*Gyps rueppelli*), with an average wingspan of 2.5m, were unable to express normal behaviour. Cramped, captive conditions can compromise both their physical and mental health of animals (Carlstead & Shepherdson, 2000; Clubb & Mason, 2003).



Figure 14

Mediterraneo Marine Park. Much like the bottlenose dolphins and the macaws at this zoo, the Patagonian sea lions were also required to perform unnatural, circus-style acrobatics to entertain, rather than educate, the public. These activities can subject the animals to unnecessarily high levels of stress.

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%)

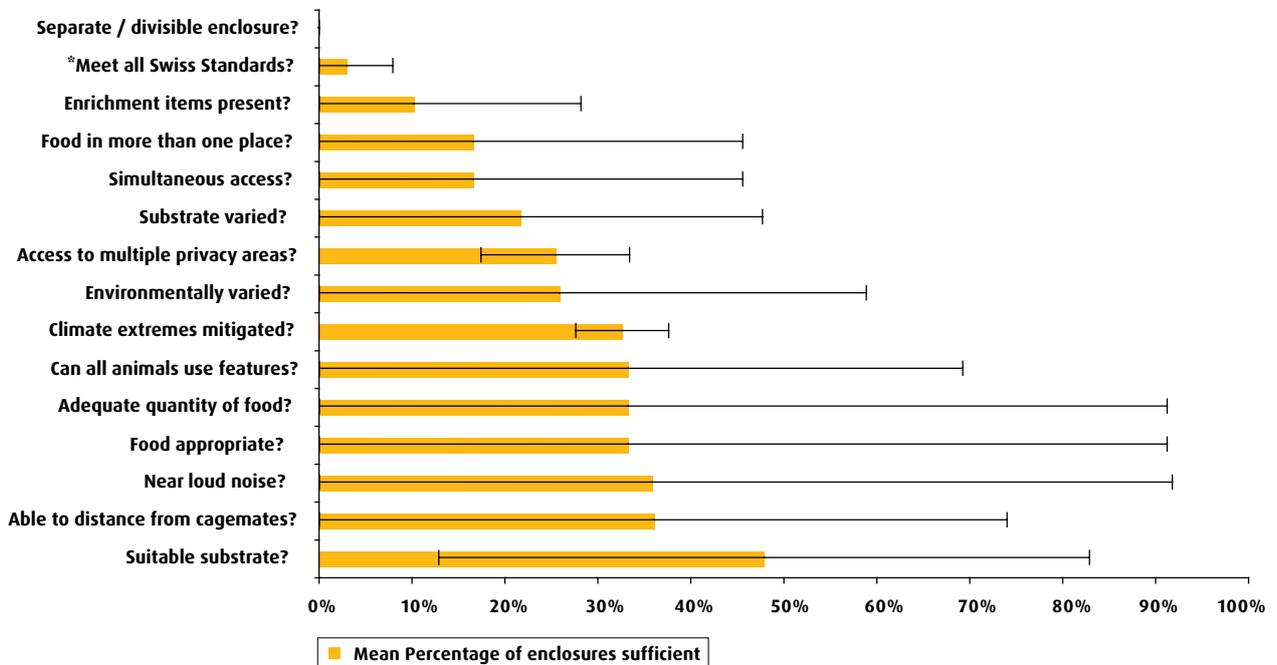


Figure 15 Issues requiring immediate attention following assessment of 24 enclosures from the three Maltese zoos. Error bars are a visual representation of the standard deviation from the mean value, demonstrating the variation in performance (e.g. the proximity to loud noise varies considerably between 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 the 24 enclosures in the three 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

and LN265/2003, which would encourage natural behaviour. 100% of enclosures did not provide the opportunity to divide or separate the animals if necessary; 90% of the enclosures did not include any behavioural or occupational enrichment items or techniques such as toys or feeding devices; 83% of enclosures did not supply the species' food in more than just one place or allow simultaneous access to it by all animals; 78% of enclosures did not provide the animals with a varied substrate; 74% of enclosures did not provide the animals with access to multiple privacy areas; 74% of enclosures were not considered environmentally-varied; 67% of enclosures did not provide facilities to mitigate climatic extremes, allow all animals within access to species-specific furnishings at the same time, provide an adequate quantity of food, or provide appropriate food; 64% of enclosures subjected the animals within to loud noise or did not allow the animals to obtain sufficient distance from their cage companions and 52% of enclosures did not provide the animals exhibited with a suitable substrate.

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

- On average, 47% of enclosures did not provide shelters to accommodate all animals at the same time.
- On average, 43% of enclosures allowed the public to come into close proximity with the animals.
- On average, 38% of enclosures had an unacceptable build-up of excrement.
- On average, 36% of enclosures were not considered to be large enough for the species contained.
- On average, 31% of enclosures did not provide the animals with access to clean drinking water.
- On average, 31% of enclosures did not contain species-specific furnishings that could be moved around the enclosure, commonly recognised as a way of providing a more stimulating captive environment.

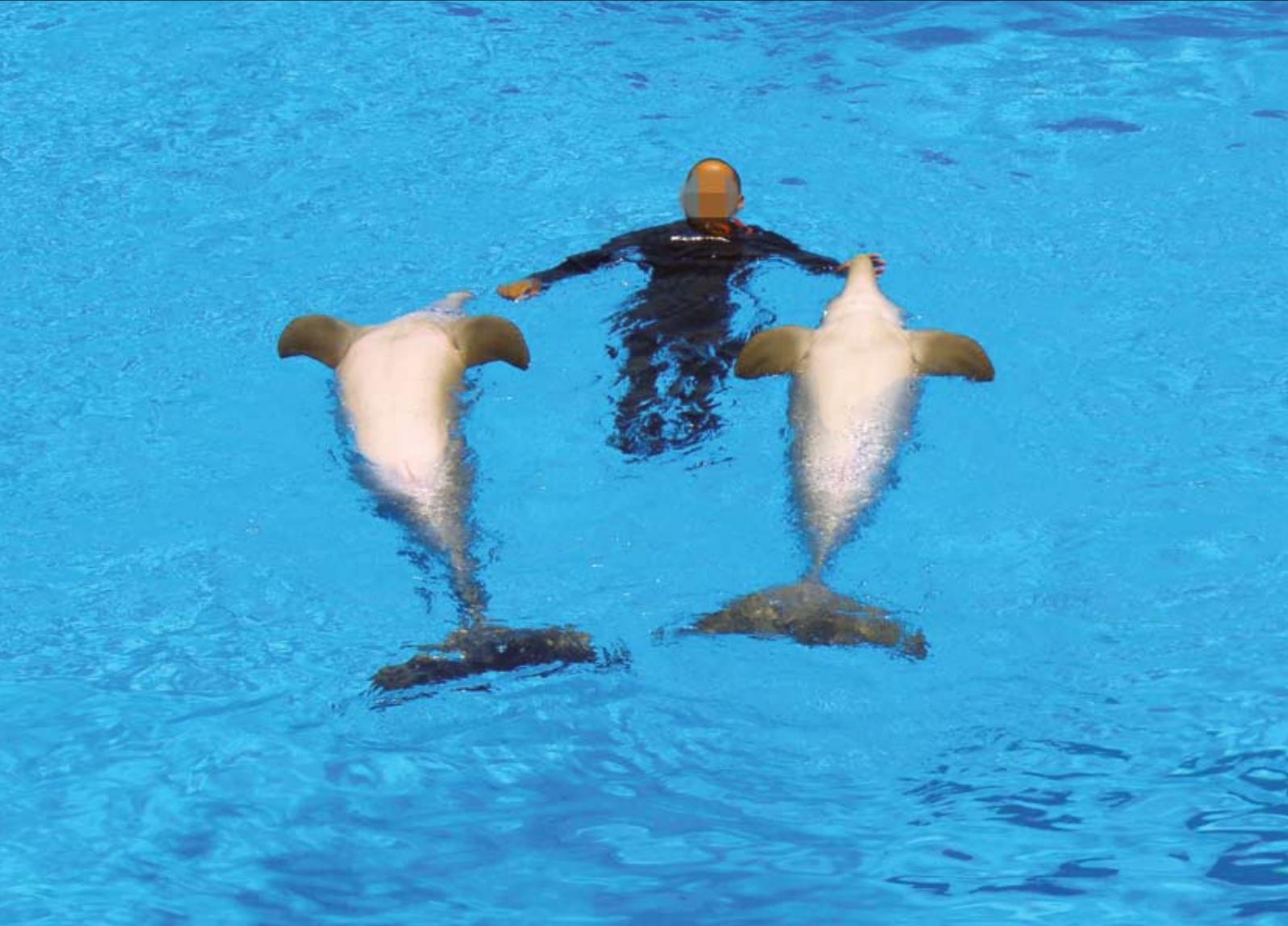
Less Widely Represented Issues of Concern (where the percentages of enclosures failing to comply is less than 30%)

- On average, 29% of enclosures allowed the public a 360° view of the enclosure (and therefore the species exhibited had very little privacy).
- On average, 26% of enclosures did not contain adequate species-specific furnishings to allow all animals in the enclosure use of the furnishings at the same time.
- On average, 23% of enclosures contained animals that appeared to be disinterested by their surroundings (possible apathy).
- On average, 22% of enclosures did not provide suitable lighting for the species.
- On average, 11% of enclosures were considered overcrowded.

Findings indicate that few of the enclosures analysed as part of this investigation provided the species contained with adequate living conditions and therefore most were not in compliance with the minimum requirements as specified by Article 3(3), LN265/2003.

*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, 97% of enclosures that exhibited species listed on APOS did not meet these minimum requirements.**

CONCLUSION



This investigation assessed two of the three licensed (at that time) zoological collections in Malta (Standard Member State Questionnaire) and one unlicensed, but operational zoo. The investigation evaluated the implementation and enforcement of the Directive and the subsequent Legal Notice nr 265 of 2003 ('LN265/2003'), enacted through the Animal Welfare Act (Chapter 439), which confirmed accurate transposition of the Directive's requirements. An exact transposition of the Directive, LN265/2003 provides no additional provisions or guidance to aid its effective application. Despite claims by the Competent Authority that extra guidance and advice is provided to the zoo operators on a case by case basis, the conditions in and actions of those assessed zoos were found to fall short of their legal obligations. This has therefore raised doubts about the effective enforcement of the law and the regularity and quality of the zoo inspection process.

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

1. Implementation of the Directive

Implemented through the LN265/2003, enacted by the Animal Welfare Act (AWA), the Directive has been accurately transposed into Maltese legislation, which aims to strengthen the role of zoos in the conservation of biodiversity. Zoos are regulated by the Veterinary Regulation Directorate of the Agriculture and Fisheries Regulation Department, within the Ministry of Resources and Rural Affairs ('the Competent Authority'), advised by the Animal Welfare Council ('the Council') and under the guidance of the Council's Director ('the Director'). Zoo inspections are required before the granting, refusing, extending the period of, or significantly amending a zoo licence. These inspections are undertaken by Animal Welfare Officers, who are also under the authority of the Director.

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 them. Unlike other EC Directives, Directive 1999/22/EC includes no guidance or explanatory notes and, therefore, effective application relies on the interpretation of - and 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. Malta is no exception.

The LN265/2003 stipulates the same requirements as those of the Directive. **There are no additional provisions, or written guidance to bring clarification to definitions, explanation of the ambiguous requirements, or instruction on its application and enforcement.** Guidance and advice are instead provided by the Competent Authority on a case by case basis and when the zoo is annually inspected (Standard Member State Questionnaire). This apparently includes guidance on research and conservation activities, the quality of educational materials, standards in animal husbandry and care, as well as general zoo licensing matters. However, findings from this investigation indicate that LN265/2003 is not being consistently applied, with at least one zoo seemingly unlicensed, and none of the licensed zoos included in the investigation, appearing to comply with all their legal obligations. This suggests that the implementation of LN265/2003, in particular the licensing and inspection of zoos (Article 4 of LN265/2003) is minimal and inconsistent with the claims of the Competent Authority (Standard Member State Questionnaire).

Il-Melita Gardens consist of a small collection of enclosures containing animals of wild species: tammar wallabies (*M.eugenii*), budgerigars (*M.undulatus*) and Eurasian collared doves (*S.decaocto*) located within the outside public area of a bar and restaurant, which are apparently also hired out for private occasions. Recognising that the Competent Authority has not set a threshold on numbers of animals for the requirement of the licence (Standard Member State Questionnaire), Il-Melita Gardens should be regulated and licensed as a zoo. It is for this reason it was included in the EU Zoo Inquiry investigation.

The lack of additional provisions to LN265/2003 may well contribute to the identified noncompliance of the three zoos. The ratification of only the framework legislation of the Directive in Malta, without additional requirements, explanation

and guidance, was a key oversight of the Government, particularly when there are legal means to implement more stringent regulations through the AWA. As described, AWA requires the Government to protect the health and welfare of animals and specifically to regulate the appropriate housing and keeping of animals (Article 7(2)b and Part VII of AWA); requirements relating to the breeding and sale of animals (Part VIII of AWA); and the appropriate use of animals (Part X of AWA), yet these measures have not been adopted. If applied, these would have added 'flesh to the bones' of the weak and ambiguous requirements of LN265/2003.

Furthermore, LN265/2003 provides no indication of the duration of a zoo licence, the regularity, procedure and reporting of zoo inspections, or what information is required in order to apply for an operating licence (other than the requirement in the AWA to provide animal welfare guarantees). The regulation of zoos in Malta is under the control of, but also at the discretion of, the Council and its Director. The fact that Il-Melita Gardens remains unjustifiably unlicensed is evidence of failures inherent in the system.

The lack of additional legislative support and legal requirement has meant that the burden of ensuring effective implementation falls to the Council and its Director. **Whilst advice might be given, as reported in the Standard Member State Questionnaire, there is no guarantee of consistency and transparency in application, or a legal obligation for the zoos to comply.**

Whilst the majority of the zoos surveyed are licensed in accordance with the provisions of LN265/2003, the findings of the study demonstrate that zoos in Malta are still failing to fully comply.

2. Ineffective enforcement

All zoos in Malta were required to comply with the requirements of the Directive, AWA and specifically, LN265/2003, by April 2005. After April 2005, any zoo found not licensed in accordance with the Directive and LN265/2003 should face closure (Article 4(5) of the Directive and LN265/2003).

According to the Veterinary Regulation Directorate of the Agriculture and Fisheries Regulation Department, all zoos in Malta are licensed (Standard Member State Questionnaire) but, as indicated above, at least one remains unlicensed (at the time of the investigation). This indicates that the LN265/2003 is inconsistently applied, at the discretion of the Competent Authority irrespective of legal requirement.

Implementation and enforcement of zoo legislation falls to the Veterinary Services and the Council in conjunction with the Animal Welfare Officers, who are required to carry out regular inspections (every year) to ensure zoo compliance (Article 4(4), LN265/2003) (Standard Member State Questionnaire). According to the Competent Authority, inspections take place at the discretion of these national authorities, who apparently have sufficient knowledge and training in all matters relating to zoo operation and animal care (Standard Member State Questionnaire). Although it is assumed that zoo inspections have been regularly undertaken at all licensed zoos since the implementation of LN265/2003, findings indicate that there is a need to improve the enforcement of the law.

Zoos are currently not meeting their legal obligations. Identified problems include failure to: undertake meaningful scientific research and conservation activities; provide sufficient information about all the species exhibited; provide meaningful public education and keep and treat animals in an appropriate manner. Furthermore, there have been significant accusations of bad practices involving animals at the Mediterraneo Marine Park and the Malta Falconry Centre by international NGOs (Birdlife Malta website; Times of Malta, 2008c; WDCS website), which may be as a result of irresponsible practices and poor animal husbandry that have not been sufficiently addressed by the Competent Authorities.

Overall, the findings call into question the regularity and quality of the zoo inspection. If the requirements of the law were being effectively enforced, all identified zoos would be licensed and any zoo found to be non-compliant would either have had the time (not exceeding one year) to comply with their obligations, or face closure.

The Veterinary Regulation Directorate and the Council should consider a review of the procedures relating to zoo inspections and develop a centralised system of reporting, recording and monitoring of such inspections to ensure that all information can be properly and transparently scrutinised and compared. **Further training in the effective inspection of zoos, identification of poor welfare and the care of wild animals should be considered as a priority. This should, in addition, include the development of national guidance for zoos which will encourage consistency in the application of, and compliance with, the law.**

3. Prevention of animal escapes

There are two recognised barriers that prevent the escape of an animal in 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 animal might pose to the natural environment, or to native species, is recognised by LN265/2003, which are consistent with the requirements of Article 3(4) of the Directive. Despite these legal requirements and the fact that the majority of the assessed zoos do appear to have an appropriate perimeter fence, indications show that only minimal measures are taken by the zoos to prevent animal escapes. For example birds have been known to escape from the Malta Falconry Centre during displays (a golden eagle (*Aquila chrysaetos*) in 2008 according to the Federation for Hunting and Conservation in Malta, 2008) and the Centre's staff are known to take the birds for flights outside the Centre for hunting purposes (Times of Malta, 2008d).

The Competent Authorities in Malta need to enforce the requirements of the law to ensure sufficient measures are in place to prevent animal escapes and to ensure 'bird flying' is confined to the boundaries of the zoos.

4. Public placed at risk of injury and illness

The two licensed zoos included in the investigation actively encouraged members of the public to have direct contact with potentially dangerous animals and although these activities were supervised, the large numbers of public participants believed to take part in these activities would make any situation difficult to control (e.g. swimming and contact with dolphins at Mediterraneo Marine Park). Equally, it was clear that members of the public were ill-prepared prior to contact with the animals, through the provision of information concerning the potential risks of physical injury or transmission of zoonoses and the need to respect the animals. **Article 8 of AWA, specifies that animals are appropriately cared for and protected from pain, suffering and distress, but this inquiry indicates that this requirement is being ignored.** The Malta Falconry Centre also offers the public opportunities to handle a variety of birds of prey. **These activities, a focus of the attractions, clearly encourage the exploitation of animals as opposed to the promotion of species conservation and the protection of global biodiversity - the aim of LN265/2003.**



Figure 16

Mediterraneo Marine Park.

A child has a souvenir photograph taken with a Patagonian sea lion (*O. flavescens*) unaware of the potential risks. Females of this species weigh, on average, 110kg and are recognised as a Category 1 Hazardous animal (SMZP). Malta zoo legislation does not regulate this kind of activity, despite the obvious dangers.

During the zoo visits, the public were observed being encouraged to have direct contact with birds of prey, reptiles, macaw parrots, sea lions and bottlenose dolphins. Although these sessions were supervised, at no time during the observed animal handling activities were members of the public asked to wash their hands. The risk of physical injury and disease transmission, particularly zoonoses is often overlooked. Animals, particularly wild animals, are thought to be the source of >70% of all emerging infections (Kuiken *et al.*, 2005). For example, numerous bacterial and fungal diseases are associated with marine mammals, including streptococci, staphylococci, pseudomonas, mycobacteria and lobomycosis, and pose serious health threats to people who have contact with, or enter pools containing infected animals (Buck & Schroeder, 1990). The risk of infection for people who swim-with, stroke or 'kiss' the dolphins is, therefore, highly probable (WDCS, 2011). Similar concerns have been substantiated regarding zoonoses through direct contact with reptiles and birds (Montali *et al.*, 2001; Mermin *et al.*, 2004; Chomel *et al.*, 2007; Stirling *et al.*, 2008; Pedersen *et al.*, 2009).

The transmission of zoonotic disease is not generally taken into consideration by zoos but where the public can have direct or indirect contact with wild animals (a practice generally to be discouraged), precautionary measures (such as hand-washing prior to and after supervised contact with approved species) should be taken. **All public contact with 'Hazardous Animals', and those species known to harbour zoonoses, should be prohibited.**

Maltese zoo legislation appears to be failing to take adequate preventative measures to protect the public against potential injury and disease. Zoos should be required to take a far greater responsibility for the safety of the visiting public.

5. Poor record for conservation

The objectives of LN265/2003 are to protect wild fauna and to conserve biodiversity, through strengthening the role of zoos in the conservation of biodiversity (Article 1, LN265/2003). This is 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). Zoos in Malta are required to participate in one or more specified activities to achieve these objectives, which include scientific research, the exchange of information relating to species conservation or captive breeding and the reintroduction of species into the wild (Article 3(1), LN265/2003).

Findings indicate that Malta's zoos are not contributing to the conservation of biodiversity and the protection of fauna. A few species kept by the zoos are classified as globally or European Threatened species (IUCN Red List of Threatened Species™ categorisation) with the remainder being of low conservation significance. None of the zoos appear to undertake scientific research, benefitting species conservation. One of the 23 species observed has been reportedly bred in captivity as part of a '*species propagation programme*', although no evidence could be found that these three *T. truncatus* calves were part of the EEP and no evidence could be found to confirm that any of the zoos were involved in *in situ* conservation programmes.

Two of the zoos, Mediterraneo Marine Park and the Malta Falconry Centre, have reportedly acquired animals from the wild. Removal of animals from the wild is likely to have implications on the dynamics of local wild populations of the species concerned as well as on the survival of the individual animals involved. In 2003, Mediterraneo Marine Park imported six wild-caught bottlenose dolphins from Cuban waters to replace four male wild-caught Black Sea dolphins, which were reportedly involved in a captive breeding programme (WDCS website). Malta is a Party of ACCOBAMS (Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area), and the Government's permission to import these wild-caught animals from other waters was viewed as irresponsible and hypocritical (WDCS, 2011). In 2008, the Malta Falconry Centre also reportedly held wild birds in its facility illegally, apparently following their rehabilitation at the Centre's unlicensed bird hospital. The birds have since been confiscated (Malta Today, 2008; Times of Malta, 2008a; Birdlife Malta website). In both 2010 and 2012 visits, the Malta Falconry Centre was recorded as selling barn owl (*T.alba*) chicks for pets, a species in '*Decline*' according to BirdLife International. These actions by the two zoos not only raise doubts about their commitment to conservation, but further call into question whether they can be regarded as being responsible in their attitude towards the protection of wild fauna.

The Competent Authority claims to discuss the involvement of licensed zoos in research and conservation activities on an annual basis (Standard Member State Questionnaire) but indications are that none of the selected zoos are involved in either research or conservation activities. Conservation of biodiversity, the main objective of LN265/2003, does not appear to be one of them.

These findings again raise doubts about the effective enforcement of LN265/2003 and the ability of the Competent Authorities and Animal Welfare Officers concerning the application of the law. Furthermore, it is not clear if the Government has implemented provisions and controls over the breeding and sale of animals, as per Part VIII of the AWA.

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 in relation to the conservation of biodiversity, particularly by providing information about the species exhibited and their natural habitats (Article 3(2) of the Directive). LN265/2003 requires zoos to promote education and public awareness concerning the conservation of biodiversity and, furthermore ensure all species on display are properly described, including details of their natural habitats (Article 3(2), LN265/2003).

The results of this investigation strongly suggest that despite some efforts to educate zoo visitors about the species exhibited, educational value was generally poor. Half of the signage for *species holdings* exhibited was absent across the three zoos, and where it was present, reference to species conservation was not included, despite the requirement of Article 3(2) of LN265/2003 to '*promote public education and awareness in relation to the conservation of biodiversity*'.

Other 'educational' programmes, operated by the licensed zoos, included a number of animal presentations and a variety of animal interaction programmes (including swimming with captive dolphins and souvenir photographs with animals). Many of these activities were promoted as both entertainment and educational experiences that demonstrated a 'respect for animals'. However, the majority appear not only to exploit the public's natural desire to encounter wild animals, but also exploit the animals themselves. Observing dolphins, sea lions and parrots performing circus-style tricks, stunts and comedy antics to music, provides a distorted view of an animal's natural behaviour and, as a result, the public are less likely to learn about the animal's natural attributes (Frohoff 2004; Barney *et al.* 2005; Curtin & Wilkes 2007; WDCS 2011). This is the conclusion of the European Association of Aquatic Mammals, which recommends that in dolphinarium '*commentary... should focus on biological facts. Any confusing or foolish comments should be omitted. Anthropomorphic and comic performances should be omitted*' (EAAM 1995). This is a recommendation ostensibly ignored by Mediterraneo Marine Park, an EAAM Member.

Overall, Maltese zoos must dramatically improve the quality of public education and in a way that does not compromise any animal's welfare. Additional detailed guidance for zoos is required encouraging best practice, which should as a basic requirement, stipulate that all *species holdings* are properly labelled, as required by the Directive.

7. Unsuitable living conditions for animals

The assessment of zoo enclosures in Malta identified substandard conditions in the three assessed zoos. Overall, the *environmental quality* of the assessed enclosures often failed to provide the species with a suitable environment. Natural behaviour was compromised or prevented. Of particular concern:

- Many far-ranging species were kept in small enclosures that did not attempt to meet their spatial needs;
- Many enclosures lacked sufficient shelter or refuge from the extreme daytime temperatures;
- Poor levels of hygiene were observed, including unhygienic drinking water, which could cause a potential build-up of harmful pathogens;
- 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;

- Many enclosures were devoid of furniture, apparatus and materials to allow the species to exercise, express natural behaviour, rest and seek privacy;
- Loud music playing close or adjacent to animal enclosures may cause unnecessary distress.

The protection of the health and welfare of animals, through the Animal Welfare Act (AWA), is an obligation imposed on all keepers of animals in Malta. Furthermore, LN265/2003 stipulates that animals in zoos must be kept in conditions which meet their species-specific welfare needs, whilst maintaining a high standard of animal husbandry.

The findings from this investigation have identified that the health and welfare of many animals within the three zoos may well be compromised. Overall, Maltese zoos are not meeting their obligations and a majority of the enclosures did not adequately provide for the needs of the species contained. **On average, 97% of the assessed enclosures failed to meet the Animal Protection Ordinance of Switzerland, Tierschutzverordnung 2008 (APOS)**, globally recognised standards that aim to ensure animals are housed in acceptable conditions in captivity. Enclosures were found to lack static furnishings and environmental complexity to encourage natural animal behaviour, food delivery and available shelter failed to adequately provide for all the individual animals within the enclosure, and environmental enrichment items, devices and apparatus to physically and mentally stimulate the captive animals, were largely non-existent.

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 abnormal behaviours were observed in bottlenose dolphins (*T. truncatus*) and Patagonian sea lions (*O. flavescens*) at Mediterraneo Marine Park, which could be a consequence of an impoverished environment. Interestingly there have been numerous reports of poor conditions for the dolphins and sea lions, in particular, at Mediterraneo Marine Park (Times of Malta, 2004, 2005a, 2007 and 2008e). These reports specifically raised concerns about the welfare of the animals; their small, shallow tanks; and the high temperatures they must endure. Mediterraneo Marine Park has previously responded stating conditions are adequate (Times of Malta, 2005b) but in 2008, an estimated €1.6 million was apparently spent on improving the conditions (Times of Malta, 2008f). Nevertheless, EU Zoo Inquiry investigations (2010) found restrictive living conditions for both bottlenose dolphins (*T. truncatus*) and Patagonian sea lions (*O. flavescens*), identifying that natural behaviours were compromised or prevented, minimal opportunities existed for the animals to escape the high temperatures, and in general that the animals were forced to inhabit a 'predictable' captive environment without necessary environmental enrichment.

In a recently published report by the Whale and Dolphin Conservation Society (WDCS, 2011), it was concluded that no captive environment can ever provide cetaceans (whales, dolphins and porpoises) with conditions that meet their biological requirements, or provide an appropriate species-specific enriched environment, as required by the Directive (Cook, 2011). The report highlighted the fact that, perhaps to facilitate ease of cleaning, the pools are mostly smooth-sided, miniscule in comparison to the volume of water the species naturally occupy and devoid of stimuli, such as rocks, substrate, live weed and fish. The inclusion of such features is made impossible by the need to keep the water filtered and chemically treated and, in all likelihood, financial constraints. Despite their ability to learn new behavioural patterns and interact with other captive dolphins within the social group, stress and stereotypic behaviour are very common among captive cetaceans. This is notably caused by sounds of a mechanical origin, such as pumps, filters and music (EAAM, 1995), an unnatural social structure of unrelated individuals (Waples & Gales, 2002), a conditioned and disciplined training regime (Desmond, 1999) and interaction with humans (Brakes & Williamson, 2007), all of which can result in behavioural changes, such as heightened aggression (Frohoff, 2004; Morgan & Tromborg, 2007), weight

loss and a variety of other health issues (Rose *et al.*, 2009). Recognising that conditions in EU dolphinariums cannot meet the requirements of the Directive and the substantial evidence that the captive environment is severely damaging to cetaceans, it is surprising that such facilities are deemed appropriate by the authorities. **Further investigation is necessary by the Competent Authorities as to whether the Mediterraneo Marine Park is able to meet the requirements of LN265/2003.**



Figure 17

Mediterraneo Marine Park.

The captive environment can never provide cetaceans (whales, dolphins and porpoises) with conditions that meet their biological requirements, or provide an appropriate species-specific enriched environment.



Figure 18

Malta Falconry Centre.

Direct contact is known to cause wild animals significant distress. The leather straps tied around this Bengal eagle owl's (*Bubo bengalensis*) legs are firmly held, and prevent the animal from escaping.

A further concern is the use of a variety of animals in handling sessions at Mediterraneo Marine Park and the Malta Falconry Centre. Although there is no evidence to suggest improper use of animals, there are seemingly no regulations (other than the 'duty of care' in AWA) or restrictions to ensure individuals are not subjected to high stress levels, or are not exploited to such a degree that their welfare is compromised. **It is recommended that the Council for Animal Welfare (Article 4, AWA) review such activities and propose guidelines to the Competent Authority as to whether it is appropriate to use individual animals in these kinds of activities and, if so, under what circumstances.**

In February 2012, a follow up visit was made to the Malta Falconry Centre and Il-Melita Gardens to determine if there had been any changes since the previous visit in 2010. No significant changes were observed at either the Malta

Falconry Centre, or the animal enclosures at Il-Melita Gardens. Barn owl and Harris hawk chicks were still openly sold to members of the public at the Malta Falconry Centre, along with a variety of bird feathers. The living conditions for the wallabies at Il-Melita remained basic, and the sign asking people not to 'poke the animals' had seemingly been removed from the enclosure. Additional visits were also made to three other zoos in Malta, LWS Animal Park, Kitchen Gardens and 'Montekristo Zoo'. Although open to the public, according to official records, 'Montekristo Zoo' has yet to be allocated a zoo licence. Conditions in all three zoos were poor, including inadequate levels of hygiene and cramped conditions. A number of animals were observed displaying stereotypic behaviour and others appeared to require veterinary intervention and improved husbandry.

These overall findings once again call into question the regularity and quality of the zoo inspections, which are supposed to occur on an annual basis, as well as the competency and knowledge of the zoo veterinarians, keepers and management; and their ability to guarantee adequate conditions and appropriate animal care. **It is recommended that the Council establish a working group (Article 4(7), AWA) to develop species-specific standards for the keeping of animals in captivity (including zoos) that will safeguard animal welfare and protection, and seek to provide additional training and guidance wherever required.**

More must be done by the Competent Authority and the Council to ensure effective enforcement of the LN265/2003, to adopt the recommendations contained in this report, to make the necessary improvements and to apply relevant penalties (Part XIV, AWA), including zoo closure, where necessary.

REFERENCES

- Barney, E.C., Mintzes, J.J. and Yen, C.F. (2005). Assessing knowledge, attitudes and behaviour toward charismatic megafauna: the case of dolphins. *The Journal of Environmental Education* **36**(2): 41-55.
- Barn Owl Conservation Network website. Are Barn Owls Nocturnal? Available at: http://www.bocn.org/factfile_detail.asp?id=45 (last accessed 28th March 2012).
- Biancani, B., Da Dalt, L., Lacave, G., Romagnoli, S. & Gabai, G. (2009). Measuring fecal progesterones as a tool to monitor reproductive activity in captive female bottlenose dolphins (*Tursiops truncatus*). *Theriogenology* **72**(9): 1282-1292.
- BirdLife International (2004). Birds in the European Union: a status assessment. BirdLife International, Wageningen, The Netherlands.
- BirdLife Malta website (2008). BirdLife Malta debunks Malta Falconry Centre's claims. Available at: <http://www.birdlifemalta.org/media/press/hunting/view.aspx?id=205> (last accessed 19th March 2012).
- Brakes, P. and Williamson, C. (2007). Dolphin Assisted Therapy. Can you put your faith in DAT? A report for the Whale and Dolphin Conservation Society. Available at: http://www.wdcs.org/submissions_bin/datreport.pdf (last accessed 8th April 2011).
- Buck, C.D. and Schroeder, J.P. (1990). *Public Health Significance of Marine Mammal Disease* in Dierauf, L.A. (editor), CRC Handbook of Marine Mammal Medicine: Health, Disease and Rehabilitation. CRC Press Inc., Boston, USA.
- Carlstead, K. and Shepherdson, D. (2000). Alleviating Stress in Zoo Animals with Environmental Enrichment. In Moberg, G.P & Mench, J.A. *The Biology of Animal Stress: Basic Principles and Implications for Animal Welfare*. 2nd edition. CABI Publishing, Oxfordshire, UK.
- Cetabase.com website (2012). Phinventory. Available at: http://www.ceta-base.com/phinventory/phins_mediterraneo.html (last accessed 19th March 2012).
- Chomel, B.B., Belotto, A. & Meslin, F.X. (2007). Wildlife, exotic pets, and emerging zoonoses. *Journal of Emerging Infectious Diseases*, **13** (1). Available at: <http://www.cdc.gov/ncidod/EID/13/16.htm> (last accessed 28th October 2010).
- Clubb, R. and Mason, G. (2003). Captivity Effects on Wide-Ranging Carnivores. *Nature* **425**: 473.
- Crockett, C., Bielitzki, J., Carey, A. & Velez, A. (1989). Kong toys as enrichment devices for singly-caged macaques. *Laboratory Primate Newsletter* **28**: 21-22.
- Convention on Biological Diversity (CBD) website. <http://www.cbd.int/> (last accessed on 12th May 2011).
- Cook, K. (2011). Advice provided to the Whale and Dolphin Conservation Society re: dolphinarium, compliance with European Union Legislation. Matrix Chambers, London. March 2011.
- Council Directive (EC) 1999/22/EC of 29 March 1999 relating to the keeping of wild animals in zoos.*
- Curtin, S. and Wilkes, K. (2007). Swimming with captive dolphins: current debates and post-experience dissonance. *International Journal of Tourism Research* **9**: 131-146.
- Department for Environment, Food and Rural Affairs (2004). *Standards of Modern Zoo Practice 2004*. Available at: <http://www.defra.gov.uk/wildlife-pets/zoos/zf-handbook.htm> (last accessed 12th May 2011).
- Department for Environment, Food and Rural Affairs (2008). *Zoos Forum Handbook*. Available at: <http://www.defra.gov.uk/wildlife-pets/zoos/zf-handbook.htm> (last accessed 12th May 2011).
- Desmond, J.C. (1999). Staging tourism: Bodies on Display from Waikiki to Sea World. University of Chicago Press, Chicago, Illinois, USA.
- Dudley, N. (2008). Guidelines for Applying Protected Area Management Categories. IUCN, Gland, Switzerland.
- ENDCAP (2009). *Animal Welfare Excellence in Europe*. Available from www.endcap.eu (last accessed on 12th May 2011).
- Eurogroup for Animals (2008). *Report on the Implementation of the EU Zoo Directive*. Available from <http://www.eurogroupforanimals.org/pdf/reportzoos1208.pdf> (last accessed 12th May 2011).
- European Association of Zoos and Aquaria (EAZA). www.eaza.net (last accessed on 12th May 2011).
- European Association of Zoos and Aquaria (EAZA) (2008). Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria. Available at http://www.eaza.net/about/Documents/Standards_2008.pdf (last accessed on 28th September 2011).
- European Association for Aquatic Mammals (EAAM) website. <http://eaam.org/> (last accessed 19th March 2012).

- European Association for Aquatic Mammals (EAAM) (1995). E.A.A.M. *Standards for Establishments Housing Bottlenose Dolphins*. Available at: http://www.marineanimalwelfare.com/EAAM.htm?option=com_content&task=view&id=19&Itemid=35#9e (last accessed 8th April 2011).
- European Cetacean Bycatch Campaign (2003). Marine park denies wrongdoing over dolphin's captive conditions. Available at: http://www.eurocbc.org/marine_park_mediterraneo_denial_re_captive_dolphin_conditions_22oct2003page1347.html (last accessed 19th March 2012).
- Farrugia, L. (2008). Are Birdlife also running MEPA and ALE? Available at: <http://www.independent.com.mt/news2.asp?artid=80258> (last accessed 19th March 2012).
- Federation for Hunting and Conservation in Malta (2008). Golden eagle escapes from Malta Falconry Centre. Available at: <http://forum.huntinginmalta.org.mt/YaBB.pl?num=1227116969/0> (last accessed 12th March 2012).
- Fowler, M. E. & Mikota, S. K. (2006). *Biology, medicine, and surgery of elephants*. Blackwell Publishing Ltd., Oxford, UK.
- Frohoff, T.G. (2004). Stress in Dolphins. *Encyclopedia of Animal Behaviour*. Greenwood Press, Westport, Connecticut, USA.
- Glendell, G. (2008). *The Birdkeepers' Guides: African Greys*. TFH Publications, New Jersey, USA.
- Glowka, L., Burhenne-Guilman, F., Synge, H., McNeely, J.A. & Gündling, L. (1994) A Guide to the Convention on Biological Diversity. Environment Policy and Law paper No. 30. IUCN, Gland, Switzerland.
- Harris, M., Harris, S. & Sherwin, C. (2008). The welfare, housing and husbandry of elephants in UK zoos. Report to DEFRA. University of Bristol.
- InfoZoos, (2006). *La salud de los zoos, adecuación de los parques zoológicos españoles a Ley 31/2003*.
- InfoZoos, (2008). *La salud de los zoos, adecuación de los parques zoológicos de las Islas Canarias al real decreto 31/2003*.
- International Animal Rescue, pers. comm., October 2009
- International Union for Conservation of Nature (IUCN) Red List of Threatened Species™. www.iucnredlist.org (last accessed on 12th May 2011).
- International Union for Conservation of Nature (IUCN), pers. comm., 21st July 2011.
- Jordan, B. (2005). Science-based assessment of animal welfare: wild and captive animals. *Rev. sci. tech. Off. int. Epiz.*, **24**(2): 515-528.
- Kuiken, T., Leighton, F. A., LeDuc, J. W., Peiris, J. S., Schudel, A., *et al.* (2005). Public Health: pathogen surveillance in animals. *Science* **309**: 1680-1.
- Lewis, M., Presti, M., Lewis, M. & Turner, C. (2006). The neurobiology of stereotypy I: environmental complexity. In Mason, G. & Rushen, J. *Stereotypic animal behaviour: fundamentals and applications to welfare 2nd edition*. Cromwell Press, Trowbridge, Cornwall, UK.
- Mallapur, A., Qureshi, Q. & Chellam, R. (2002). Enclosure design and space utilization by Indian leopards (*Panthera pardus*) in four zoos in southern India. *Journal of Applied Animal Welfare Science*, **5**(2): 111-12.
- Malta Animal Welfare Act Chapter 439 (2002). Available at: http://www.commonlii.org/mt/legis/consol_act/awa128.pdf (last accessed 19th March 2012).
- Malta Falconry Centre website. <http://www.maltafalconrycentre.com/> (last accessed 19th March 2012).
- Malta Today website (2008). Birds confiscated from falconry centre now safe in Sicily. Available at: <http://www.maltatoday.com.mt/2008/12/10/t5.html> (last accessed 19th March 2012).
- Mason, G. & Rushen, J. (2006). *Stereotypic animal behaviour: fundamentals and applications to welfare. 2nd edition*. Cromwell Press, Trowbridge, Cornwall, UK.
- Mediterraneo Marine Park pers. comm., June 2010.
- Mediterraneo Marine Park website. <http://www.mediterraneopark.com/> and <http://www.marineparkmalta.com/home?!=1> (last accessed 19th March 2012).
- Mediterraneo Marine Park Edutainment Booklet (2012). Available at: <http://www.mediterraneopark.com/pdf/bookletWebMediterraneo.pdf> (last accessed 19th March 2012).
- Mermin, J., Hutwagner, L., Vugia, D., Shallow, S., Daily, P., Bender, J., Koehler, J., Marcus, R. & Angulo, F.J. (2004). Reptiles, amphibians and human salmonella infection: a population-based, case-control study. *Clinical Infectious Diseases* **38**(3): 253-61.

- Montali, R.J., Mikota, S.K. & Cheng, L.I. (2001). Mycobacterium tuberculosis in zoo and wildlife species. *Revue Scientifique et Technique* **20**(1): 291-303.
- Morgan, K. and Tromborg, C. (2007). Sources of stress in captivity. *Applied Animal Behaviour Science* **102**: 262-302.
- Pedersen, K., Lassen-Nielsen, A.M., Nordentoft, S. and Hammer, A.S. (2009). Serovars of *Salmonella* from captive reptiles. *Zoonoses and Public Health* **56**(5): 238-242
- Pruetz, J. D. & Bloomsmith, M. A. (1992). Comparing two manipulable objects as enrichment for captive chimpanzees. *Journal of Animal Welfare* **1**: 127-137.
- Rose, N.A., Parsons, E.C.M. & Farinato, R. (2009). The case against marine mammals in captivity (4th edition). The Humane Society of the United States and the World Society for the Protection of Animals.
- Standard Member State Questionnaire from Veterinary Regulation Directorate of the Agriculture and Fisheries Regulation Department, pers. comm., 17th November 2009.
- Stirling, J., Griffith, M., Dooley, J.S.G., Goldsmith, C.E., Loughrey, A., Lowery, C.J., McClurg, R., McCorry, K., McDowell, D., McMahon, A., Millar, B.C., Rao, J., Rooney, R.J., Snelling, W.J., Matsuda, M., and Moore, J.E. (2008). Zoonoses Associated with Petting Farms and Open Zoos. *Vector-Borne and Zoonotic Diseases* **8**(1): 85-92.
- Swaigood, R. & Sheperdson, D. (2006). Environmental enrichment as a strategy for mitigating stereotypies in zoo animals: a literature review and meta-analysis. In Mason, G. & Rushen, J. *Stereotypic animal behaviour: fundamentals and applications to welfare 2nd edition*. Cromwell Press, Trowbridge, Cornwall, UK.
- The Keeping of Wild Animals in Zoos Regulations (2003). Available at: <http://www.doi.gov.mt/en/legalnotices/2003/09/LN265.pdf> (last accessed 19th March 2012).
- The Swiss Federal Council (2008). *Animal Protection Ordinance of Switzerland (Tierschutzverordnung)*. Available from <http://www.admin.ch/ch/d/sr/4/455.1.de.pdf> (last accessed on 12th May 2011).
- Times of Malta website (2004). Hazardous conditions. Available at: <http://www.timesofmalta.com/articles/view/20040826/letters/hazardous-conditions.114204> (last accessed 19th March 2012).
- Times of Malta website (2005a). Focus on the animals. Available at: <http://www.timesofmalta.com/articles/view/20050312/letters/focus-on-the-animals.96628> (last accessed on 12th March 2012).
- Times of Malta website (2005b). The Maltese love animals too! Available at: <http://www.timesofmalta.com/articles/view/20050527/letters/the-maltese-love-animals-too.89141> (last accessed 19th March 2012).
- Times of Malta website (2007). Cruise liner tours. Available at: <http://www.timesofmalta.com/articles/view/20071126/letters/cruise-liner-tours.185747> (last accessed 19th March 2012).
- Times of Malta website (2008a). I'm being preyed upon, investigated falconer claims. Available at: <http://www.timesofmalta.com/articles/view/20081218/local/im-being-preyed-upon-investigated-falconer-claims.237674> (last accessed 19th March 2012).
- Times of Malta website, (2008b). Animal Awareness Day at Zebbug School. Available at: <http://www.timesofmalta.com/articles/view/20080217/education/animal-awareness-day-at-zebbug-school.196646> (last accessed 16th March 2012).
- Times of Malta website (2008c). Malta dolphin park listed among 'cruellest' destinations. Available at: <http://www.timesofmalta.com/articles/view/20080803/local/malta-dolphin-park-listed-among-cruellest-destinations.219290> (last accessed 19th March 2012).
- Times of Malta website (2008d). Passion migrates. Available at: <http://www.timesofmalta.com/articles/view/20080427/environment/passion-migrates.205819> (last accessed 19th March 2012).
- Times of Malta website (2008e). Dolphins' conditions. Available at: <http://www.timesofmalta.com/articles/view/20080810/letters/dolphins-conditions.220187> (last accessed 19th March 2012).
- Times of Malta website (2008f). Claims against dolphin park 'baseless' and 'senseless'. Available at: <http://www.timesofmalta.com/articles/view/20080817/local/claims-against-dolphin-park-baseless-and-senseless.221153> (last accessed 19th March 2012).
- Times of Malta website, (2010a). A welcome first in the Mediterraneo Lagoon. Available at: <http://www.timesofmalta.com/articles/view/20100808/environment/a-welcome-first-in-the-mediterraneo-lagoon.321426> (last accessed 16th March 2012).
- Times of Malta website, (2010b). Second dolphin born at Mediterraneo Park. Available at: <http://www.timesofmalta.com/articles/view/20100911/local/second-dolphin-born-at-mediterraneo-park.326456> (last accessed 16th March 2012).

- Waples, K. A and Gales, N.J. (2002). Evaluating and minimising social stress in the care of captive bottlenose dolphins (*Tursiops aduncus*). *Zoo Biology* **21**(1): 5-26.
- Whale and Dolphin Conservation Society (WDCS). (2011). Dolphinarium – A review of the keeping of whales and dolphins in captivity in the European Union and EC Directive 1999/22, relating to the keeping of wild animals in zoos. Available at: http://www.bornfree.org.uk/fileadmin/user_upload/files/reports/Dolphinarium_Report_engl_FINAL.pdf (last accessed 11th July 2011).
- Whale and Dolphin Conservation Society (WDCS) (2012). Malta. Available at: http://www.wdcs.org/stop/captivity/eu_campaign/malta.php (last accessed 12th March 2012).
- World Association of Zoos and Aquariums (WAZA) (2005). Building a Future for Wildlife - The World Zoo and Aquarium Conservation Strategy. WAZA Executive Office, Switzerland.
- World Organisation for Animal Health (2010). *Terrestrial Animal Health Code 2010*. Available from http://www.oie.int/eng/normes/mcode/en_sommaire.htm (last accessed on 12th May 2011)



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.

www.bornfree.org.uk

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

Produced for the ENDCAP coalition www.endcap.eu by international wildlife charity the Born Free Foundation, Charity No: 1070906 www.bornfree.org.uk

The Born Free Foundation wishes to thank the following for their help and support in delivering the EU Zoo Inquiry 2011: ENDCAP Member Organisations; International Animal Rescue Malta, Bill Procter, Gabriel Fava and Nina Kanderian.

