

CONSERVATION

What is a zoo?

A zoo is an establishment that displays animals and is open to the public (for at least seven days per year). This includes traditional zoos, wildlife parks, aquariums and bird collections.

What is conservation?

Conservation is man's attempt to preserve and manage the natural environment and biological diversity. Why do we want to conserve animals?

- Economic
- Moral/ethical
- Scientific
- Recreational
- Aesthetic



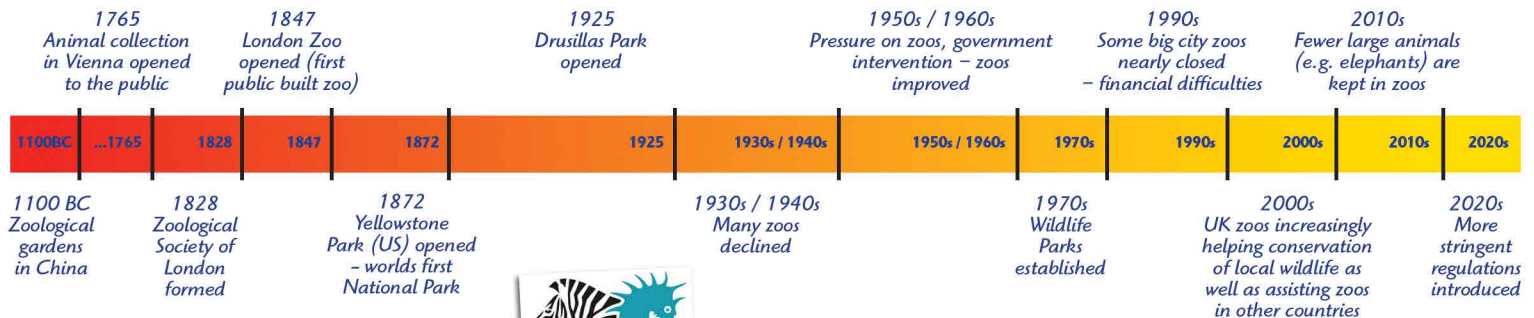
History of zoos

People have kept animals for hundreds of years; sometimes showing them off as status symbols. In Victorian times zoos were built for the public's benefit and education. Zoos were very popular but many later declined in the 1940s and 50s. In the 1960s pressure was put on zoos to improve, this has led to improved conditions and zoos becoming conservation hotspots. Today, zoos must be involved in conservation and education work, and higher animal welfare standards are expected.

Why are some animals endangered?

- Habitat destruction
- Pet trade
- Global warming
- Competition with man / livestock
- Introduction of non-native species
- Hunting
- Pollution
- Over harvesting

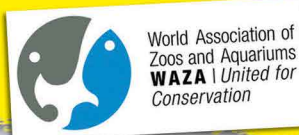
Zoo Time Line



Zoos today

Zoos are linked under umbrella organisations:

- BIAZA** - British and Irish Association of Zoos and Aquariums
- EAZA** - European Association of Zoos and Aquariums
- WAZA** - World Association of Zoos and Aquariums



Conservation today

Many conservation organisations exist, for example:

- Local** - Sussex Wildlife Trust, Sussex Bat Group, Butterfly Conservation - Sussex Branch
- National** - The Wildlife Trusts, Peoples Trust for Endangered Species, Marine Conservation Society, The Mammal Society, Wildfowl and Wetlands Trust, RSPB
- International** - WWF, Birdlife International, Wetlands International, Conservation International, Amphibian Ark



IUCN (International Union for Conservation of Nature) supports conservation projects and organisations (including zoos, charities and government departments), as well as developing its own conservation work. It is also an important source of information, including the Red List of Threatened Species.

Why do we still have zoos? • CONSERVATION • EDUCATION • RESEARCH

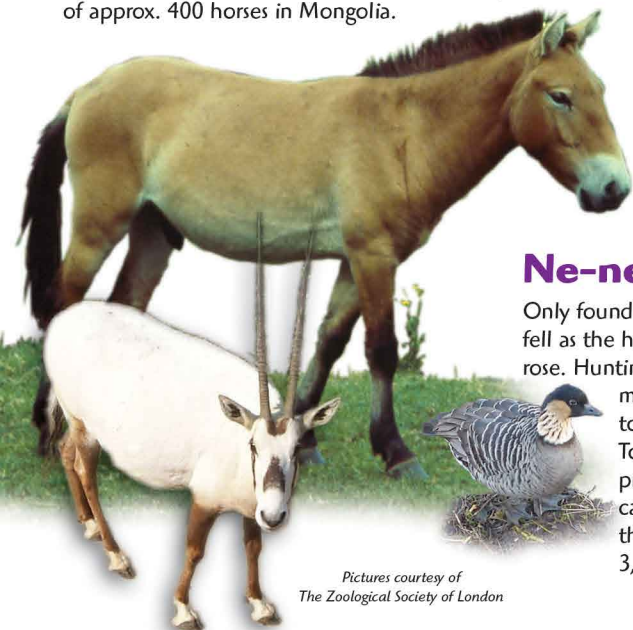
Conservation

Zoos worldwide work together on captive breeding programmes aiming to increase the numbers of zoo animal populations. These are organised in studbooks. Approximately 400 species have Europe-wide captive breeding programmes; surplus animals are loaned or donated to other zoos. Captive breeding reduces pressures on wild populations and helps to maintain genetic diversity. Zoos rarely introduce animals into the wild themselves, but instead work alongside other conservation organisations. It is very unusual for zoos to take animals from the wild, this only happens when a population becomes so critically low that intervention is required.

Captive breeding

Przewalski's horse (*Equus ferus przewalskii*)

Numbers fell due to habitat loss, hunting and conflict with humans. In 1968 it was declared extinct in the wild. The remaining captive horses bred well and some have been released; today there is a wild population of approx. 400 horses in Mongolia.



Pictures courtesy of
The Zoological Society of London

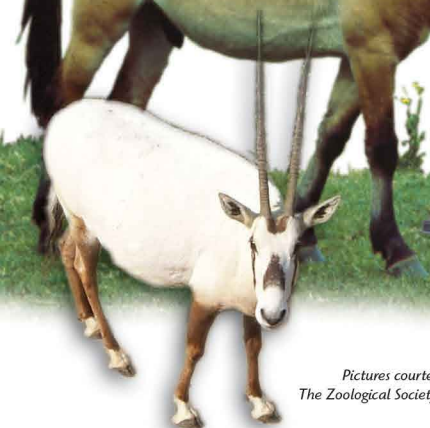
Ne-ne (*Branta sandvicensis*)

Only found in Hawaii, numbers fell as the human population rose. Hunting and habitat loss meant numbers fell to 20-30 individuals. Today, due to protection and captive breeding there are now over 3,000 wild birds.



Arabian oryx (*Oryx leucoryx*)

Numbers dramatically fell in the 1950s and 60s due to hunting and in 1972 the last wild oryx was shot. However the problem had been spotted, 'Operation Oryx' began in the early 1960s – wild individuals had been caught and bred in zoos. In 1982 the first oryx were successfully re-introduced into the wild. Today there are small wild populations as well as managed populations in the Arabian peninsula.



Golden lion tamarin (*Leontopithecus rosalia*)

Found in Brazil's Atlantic coastal rainforest. In 1980 only 100 golden lion tamarins remained. A large captive breeding programme commenced, since 1984 zoo bred individuals have been released into the wild. There are now over 1,000 individuals in the wild. Drusillas has golden lion tamarins living in its bat enclosure.

Mountain chicken (*Leptodactylus fallax*)

Once found on many Caribbean islands, but now only found on Montserrat and Dominica. Traditionally eaten by people, this frog is affected by Chytrid fungal disease. At the last survey in 2017, only 132 mature adult frogs were found. A number of zoos, including ones in the UK are helping to conserve this species.



Partula snails (*Partula* spp.)

From French Polynesian islands, many species became extinct after being preyed on by the introduced rosy wolf snail (which was released to control introduced giant African land snails). Of the 76 species listed on the IUCN Red List, 32 are extinct, 13 are extinct in the wild, 19 are critically endangered, 7 are endangered, 1 is vulnerable, 2 are least concern and 2 are data deficient.



Bali starling (*Leucopsar rothschildi*)

Endemic to Bali, Indonesia, their numbers declined largely due to illegal trapping for the cage-bird trade. Whilst they have bred in zoos and been released, the threat continues and fewer than 100 wild birds remain.

British species

Zoos spend lots of time and effort on exotic animals but also care for British species. Many zoos have wildlife areas and nest boxes, whilst at Drusillas Park we have taken part in breeding programmes for European beavers, harvest mice and red squirrels.



In-situ conservation

BIAZA members currently support over 850 field conservation projects. In 2020 the Drusillas Conservation in Action Fund was launched; this encompassed our existing ex-situ projects along with a new 'rolling' conservation charity of the year.

Drusillas in Africa – Over £75,000 has been raised for conservation and education programmes in Kenya, we are currently helping to fund Kenyan students that are carrying out important research work into endangered species such as Grevy's zebras.

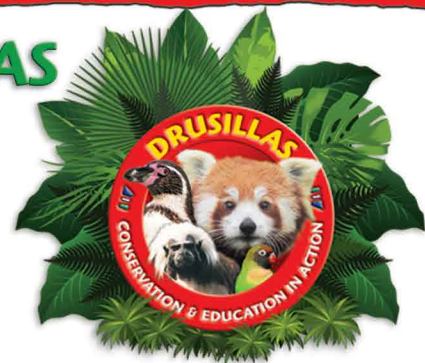
Lion Tamarins of Brazil Fund – raising awareness of and funds to support conservation work in Brazil's heavily depleted coastal rainforests.

Falklands Conservation – fundraising to help support the wildlife of the Falkland Islands, including the five species of penguin that are found there.

SloCo – originally our first conservation charity of the year, our funding has since continued. SloCo is dedicated to helping sloths in the wild, by building wildlife bridges, insulating power lines, planting trees, rearing orphaned sloths and through education programmes.

Local Conservation Projects – Drusillas is involved in local water vole and dormouse projects, the latter of which involves building, putting up and checking dormouse nest boxes. Both of these are in conjunction with the Peoples Trust for Endangered Species.

ENDANGERED ANIMALS at DRUSILLAS



Ring-tailed lemur

(*Lemur catta*)

Found in the scrubby forests of southern Madagascar, these lemurs are threatened by habitat destruction and are classed as endangered. Like some other lemur species, they breed well in captivity, but there is insufficient protected habitat to allow releases.



Humboldt penguin

(*Spheniscus humboldti*)

Found on the coasts of Chile and Peru in South America, these penguins are classed as vulnerable. Their numbers fluctuate (particularly with El Nino events), and there is thought to be a maximum of 12,000 wild birds. They are threatened by over-fishing and being caught in nets, illegal capture and disturbance of their nests sites. They often nest in piles of guano (droppings), this is collected as a fertilizer and limits where they can nest.

Cotton-topped tamarin

(*Saguinus oedipus*)

Found in forests in north-west Colombia, these tamarins are classed as critically endangered (by IUCN). Numbers have decreased by 80% in the past 20 years, now there are approximately 6,000 individuals in the wild. Currently threatened by habitat loss, previously declined due to capture for pet trade and use in biomedical research.



Rodrigues fruit bat

(*Pteropus rodricensis*)

Only found on the island of Rodrigues in the Indian Ocean. In 1976 there were fewer than 100 Rodrigues fruit bats in the world. There is now a large captive population, due to a well organised and successful captive breeding scheme. Many bats have been released onto Rodrigues and there is now a wild population of about 4,000 bats.



Sulawesi crested macaque

(*Macaca nigra*)

Found in Sulawesi (Indonesia). Classed as critically endangered, their wild population has decreased by more than 80% in the last 33 years due to hunting and habitat destruction.



Red panda

(*Ailurus fulgens*)

Found in mountainous forests in countries around the Himalayas including India and China. Their population is thought to have decreased by 50% over the last 20 years and so are classed as endangered. They have specific habitat and dietary needs, feeding 98% on bamboo.

Lar gibbon

(*Hylobates lar*)

Found in south-east Asian forests, lar gibbons are an endangered species due to hunting for food, capture to be pets, and habitat destruction. They were also previously found in forests in China, but they are now believed to be extinct there. They usually live high in the canopy, swinging from branch to branch using their long arms in a process called brachiation.





Education

Zoos are fantastic places
for all ages to learn

Visitor Education

- More than 35 million people visit BIAZA collections every year, worldwide the figure is thought to be 700 million.
- Interpretation shows the natural habits and conservation status of a species.
- Keeper talks are often entertaining and a valuable learning tool.
- Many zoos display animal artefacts on loan from HM Revenue & Customs that have been seized under CITES (Convention on International Trade in Endangered Species) regulations.
- Local wildlife issues can be championed along with practical advice on how individuals can help the environment. Many zoos promote sustainability and have public recycling facilities on site.
- Coming close to exotic animals is a fantastic experience in itself.

School visits

- 1.2 million children visit BIAZA zoos on an organised trip every year (including 15,000 visiting Drusillas annually).
- Pupils can learn:
 - To respect animals and how to look after them
 - The variety of life and different habitats
 - Awareness of environmental and conservation issues
 - About other people around the world and their cultures
- Education sessions (e.g. Animal Encounters) enable children to stroke animals and handle artefacts.
- Zoos are a fun day out for informal learning.



Research

- BIAZA collections carry out over 1,300 research projects every year, many of these measuring behaviour with the aim of improving animal welfare.
- Recent research at Drusillas includes:
 - Introduction of anteaters to each other
 - Lar gibbon enclosure usage
 - Effect of UV light on species
 - Observing emperor tamarins before and after UV light installation
 - Binturong and flamingo breeding
 - Effect of visitors on ring-tailed lemurs
 - How do dietary enrichment schedules affect Capuchin monkeys

Animal Records

- All records are kept on a database called Species 360 ZIMS (Zoological Information Management System). This is a web-based database used by more than 1,200 zoos, aquariums and wildlife institutions in 101 countries that contains millions of records on more than 22,000 species and ten million individual animals.
- Information stored includes births, deaths, behaviour, movements and medical history.



Economic value

- A recent Economic Impact Assessment on BIAZA zoos shows that:
 - 120 zoos are full BIAZA members
 - Zoos are worth over £650 million annually to the economy
 - Zoos employ 11,000 people and are supported by 4,700 volunteers
 - Over £30 million is spent annually by BIAZA zoos on conservation

Your Conservation session @ DRUSILLAS

Drusillas offers a session about conservation for classes from Key Stage 1 to Post-16. The session will involve an age appropriate PowerPoint presentation, a chance for pupils or students to handle a range of HM Customs seized animal artefacts, and animal encounters.

Naturally, health and safety is considered throughout and everyone is asked to clean their hands after touching animals and artefacts.



Alfriston, East Sussex BN26 5QS

Tel: 01323 874117 Fax: 01323 874101

e-mail: education@drusillas.co.uk

www.drusillas.co.uk

FIND OUT MORE...

Useful websites:

www.drusillas.co.uk

www.biaza.org.uk

www.eaza.net

www.waza.org

www.iucnredlist.org

