

- To achieve and promote the world-wide conservation of animals and their habitats.
- A World where animals are valued and their conservation assured.

Guiding principles:

- Respecting and valuing animals and the natural world.
- Inspiring conservation action.
- Achieving excellence in our field.
- Acting ethically, responsibly and sustainably.
- Valuing everyone we work with.

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ZSL London Zoo

Introducing the Zoological Society of London

The Zoological Society of London was founded in 1826 by Sir Stamford Raffles. Stamford Raffles had a vision of setting up a society for the scientific study of animals. He wanted to establish “a zoological society dedicated to the advancement of zoology and physiology and the introduction of new and curious subjects of the animal kingdom”. He also wanted “a base and centre for research and publications to share zoological knowledge throughout the world”.

By 1828 the society was established and open to fellows and scientists. Charles Darwin was one such fellow of the society, joining in 1837. By 1848 the gates were opened to the public at the cost of one penny entrance fee. The Zoo needed money to support itself and allowing visitors to come in

and see the animals seemed the best way to generate funds.

www.zsl.org/about-us/landmarks-in-zsl-history

Today the Zoo still relies on its visitors to generate funds to support our biological and ecological research and conservation projects.

For a financial statement about the Society see the Annual Review.

www.zsl.org/about-us/zsl-annual-reports

The Society now consists of four major bodies:



The Zoo in the mid 19th century

- ZSL London Zoo
- ZSL Whipsnade Zoo
- Conservation programmes
- Institute of Zoology

ZSL London Zoo is an urban zoo that houses around 16,000 animals from around 750 species. The site covers 36 acres in Regent's Park in London. The Zoo receives around 1,000,000 visitors each year.

ZSL Whipsnade Zoo is situated near Dunstable in Bedfordshire. It is set in a rural location and houses the large species of animal such as Asian elephants and both White and Asian rhinos. This site houses more than 200 species of animal and covers over 600 acres.

ZSL now operates successfully in the 21st century. The society is still dedicated to the enhancement of zoology but has developed its goals to include species and habitat conservation.

The role of a modern zoo

A modern zoo must be involved in the following activities:

Education

Both formal schools and informal visitor education programmes.

Conservation

In-situ field work research, in-situ field work active conservation and ex-situ lab-based data analysis.

Research

Biological and ecological research both in the zoo and in the field. Zoo research includes reproductive, nutrition, epidemiological, behavioural, population biology and pathology research.

Improvements

In husbandry and welfare. Maintaining biologically and genetically healthy animal populations as well as the well being of individual animals.

Communications

Keeping and sharing accurate records for zoo animals, contributing research papers to scientific journals and other publications and being part of the regional and international zoo networks such as EAZA and WAZA.

www.zsl.org/education/the-modern-zoo

In 1926 Sir Stamford Raffles described the newly founded society as:

“a base and centre for research and publications to share zoological knowledge throughout the World”.

London Zoo must retain its identity and highlight its significant history whilst developing and modernising for the benefit of both its visitors and animals.

ZSL's vision

ZSL's guiding principles:

Respecting and valuing animals and the natural world

Our belief is that a diverse and healthy natural world is valuable in its own right and is essential for ensuring secure and healthy lives for people. This motivates ZSL's vision and mission, and our other core values follow from this.

Inspiring conservation action

We seek to motivate others to take conservation action in their daily lives.

To achieve excellence in our field

Building on our heritage and reputation as a learned society, we aim to be an authoritative source of information and good practice for scientific study, conservation and husbandry of animals; and to make efficient and effective use of available resources to achieve the highest possible standards in everything we do in the operation of a successful and innovative conservation organisation.

Acting ethically, responsibly and sustainably

We aim to operate in fair and justifiable ways that do not conflict with our mission/objectives, and which respect the environment.

Valuing everyone we work with

We support and value teamwork and collaboration, strive for fair and equitable treatment of everyone with whom we work and come into contact with, and aim to act with respect and courtesy in all our dealings.

21st century zoo

A large part of ZSL's work is in new developments. Each year we undertake a new exhibit development project to re-build or modernise an animal enclosure. Profits, donations and legacies are used to help fund our development.

Recent areas that have been developed include: Upcoming projects:

Blackburn Pavilion - 2008
Animal Adventure - 2009
Penguin Beach - 2011
Tiger Territory - 2013

In with the Lemurs - 2015
Asiatic Lions - 2016 (major redevelopment)

London Zoo contains many listed buildings which cannot be altered due to their architectural significance.

For example:

The East Tunnel - 1829
Giraffe House - 1837
Reptile House - 1926
Lubetkin Penguin Pool - 1934

Collection planning

Collection planning is used to decide which animals should be kept in each zoo. The type of animal, with its size and husbandry requirements, dictates if and where an animal can be kept. ZSL London Zoo houses smaller species, for example, reptiles, fish, invertebrates and a range of smaller primates, while ZSL Whipsnade Zoo houses large species and herd species such as elephant, rhino, zebra, antelope and cheetah.

Each zoo must evaluate whether it has the appropriate housing conditions for a species before it can be kept. The Collection Planning process looks at the value of keeping each animal in terms of its:

- Education value
- Conservation breeding value and
- Conservation or general research value.

Some animals are kept for public attraction value but must also meet one of the other criteria.

Zoo networks

The following zoo associations are networks that work together to share knowledge, expertise, best practice and animals. These networks are vital for the success of animal welfare and husbandry and the successful breeding of captive animals.

BIAZA

British and Irish Association of Zoos and Aquaria.

BIAZA are the professional body representing the best zoos and aquariums in Britain and Ireland. Their Member Collections pride themselves on their excellent animal welfare, education and conservation work. BIAZA supports them in their work and helps promote the work of good zoos and aquariums.

EAZA

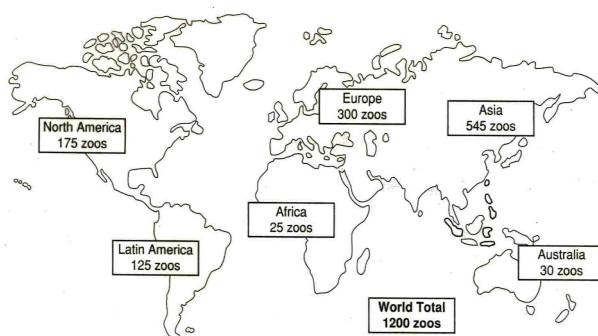
European Association of Zoos and Aquaria.

Aims to: Promote cooperation for furthering regional collection planning and wildlife conservation, particularly through internationally coordinated breeding programmes of wild animals such as the European Endangered Species Programme (EEP). Promote education, in particular environmental education. Contribute to relevant meetings and discussions of the supra-international organisations, such as the United Nations, The World Conservation Union - IUCN, European Union, the Convention of International Trade in Endangered Plant and Animal Species (CITES) etc.

WAZA

World Association of Zoos and Aquaria.

The World Association of Zoos and Aquaria is the umbrella organisation for the world zoo and aquarium community. Its members include leading zoos and aquariums, and regional and national associations of zoos and aquariums, as well as some affiliate organisations, such as zoo veterinarians or zoo educators, from all around the world.



ZSL Case study - Western lowland gorillas

This case study draws in all the elements of the work of a good modern zoo.

ZSL London Zoo houses a breeding group of Western lowland gorillas. At present there are three adult female gorillas, one juvenile female and one male silverback gorilla.



As this species is now categorised as critically endangered, it is important that we maintain genetically healthy captive populations.

Keeping gorillas

A zoo keeper must undertake the following:

- Food selection, preparation and delivery
- Cleaning indoor and outdoor enclosures.
- Health monitoring.
- Medical intervention with the help of veterinary staff
- Training animals to maintain

animal health

- Enrichment activity provision
- Managing breeding groups and programmes
- Enclosure maintenance and development
- Behavioural observations
- Communicating with other zoo staff within the Zoo, the UK and abroad
- Writing daily reports
- Keeping up to date with conservation issues.

A zoo can be described as:

“A professionally managed zoological institution, having a collection of living animals used for conservation, scientific studies, public education, and public displays”

“The need to prevent inbreeding and maintain genetic diversity among our captive populations is central to how we currently manage zoo populations”

Caring for captive populations

The ZSL London Zoo troop currently consists of three adult females - Zaire, Effie and Mjukuu. They are part of a breeding group and share their enclosure with Kumbuka, our 17 year old male gorilla. In December 2014 Mjukuu gave birth to our youngest female, Alika. This combination of animals is decided by a stud-book co-ordinator (see below).

Gorillas live in a social group known as a harem, where one dominant adult male (the

Silverback) controls a number of breeding females. In the captive environment at London Zoo the enclosure provides enough space for one Silverback territory. The enclosure provides a three-dimensional outdoor paddock, indoor day gym and night time 'bedrooms' for sleeping in at night or to have 'time-out' in during the day.

The enclosure offers both indoor and outdoor shelter, climbing and exercise facilities, foraging space,

privacy and location choice. Proximity to visitors can be decided by the gorillas.

The lives of the gorillas are enriched through feeding activities and a training programme. A balanced diet is produced and scattered within the enclosure, allowing the gorillas to forage for their food as they would in the wild. The programme allows the keeping team to do daily health checks on the gorillas whilst allowing the animals some mental stimulation.

Captive management tools

Captive populations can be managed using computer packages. These packages allow keeping staff and curators to input information about each individual animal. The system can record the entire ancestry and life history of each individual. This helps to prevent in-breeding and unsuccessful social groupings.

SPARKS: the SPARKS system is the 'Single Population Analysis and Record Keeping System' tool. This is used regionally within the UK. It acts as a stud book, allowing zoo staff to identify appropriate individuals for transfer to new enclosures and new zoos in order to join breeding groups.

The stud-book co-ordinator should undertake the following role:

- To ensure successful breeding of a species by increasing or decreasing

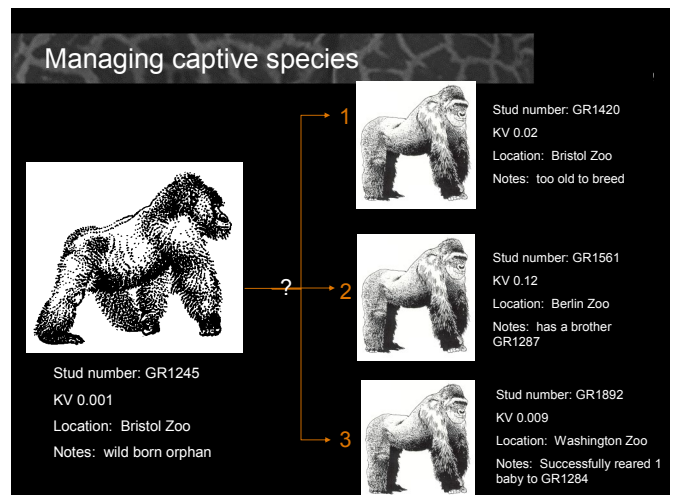
breeding rates.

- Avoid inbreeding and hybridisation.
- Maintain as much wild genetic variability as possible.
- Make decisions about animal moves within EAZA and other zoo associations.

ISIS: this system is the global database, recording the number

of individuals from each species and their global captive distribution.

ZIMS: This system is under development and will replace ISIS. It will be web-based and show populations in real time, so zoo staff can see births and deaths and animal transfers across the globe. Around 2,000,000 animals will be recorded on this system.



Other management options

Where some animals are unable to breed naturally, other management tools are employed.

For example:

- Male and female live together but refuse to mate.
- Zoos are unable to transfer animals.
- Zoos are unable to house a breeding pair of animals.
- There is risk of aggressive behaviour between mates.

Techniques include:

- Artificial insemination (AI)
- In vitro fertilization (IVF)
- Embryo transfer.

AI (Artificial insemination)

In some cases a genetically valuable male may be able to provide sperm that can be used to artificially inseminate a number of captive females.

IVF (In vitro fertilisation)

If a male animal has a low sperm count or low sperm motility, IVF can be used to

produce a 'test-tube' embryo which can then be implanted into the female.

Embryo transfer

Embryos are produced and are then carried by a surrogate female. Very rare species embryos can be carried by domestic equivalents e.g. domestic cattle carry embryos for the Gaur.

Transferring sperm and embryos is cheaper, easier and safer than moving live animals and has welfare benefits, in avoiding the need for sedation, capture, and transport of live animals.

How zoos support conservation in the wild

Western lowland gorillas are now considered a critically endangered species in the wild. They inhabit countries in western Africa including Cameroon, Gabon, Nigeria and Congo. They have shown a population reduction of 80% over the last three generations. They have been exposed to exceptionally high levels of hunting and disease-induced mortality (e.g. ebola). This is compounded by the fact that gorilla reproductive rates are extremely low.

Organisations like ZSL can support *in-situ* conservation in a number of ways, including:

Co-ordinating conservation research

Good zoos often have a conservation division, dedicated to the initialization and control of in-situ conservation projects. Zoos can provide a base for collaborative conservation research and a staff team equipped for active field research.

Active conservation action

Zoos can provide scientists and field workers to undertake field research in-situ as well as undertaking local education programmes and data collection.

Education and Awareness

By exhibiting gorillas in the zoo and providing the visiting public with interpretation (signage and live speakers), we can raise awareness and educate visitors about the threats to wildlife.

Campaigning and Fundraising

By running active campaigns on zoo grounds they can raise vital funds needed to support conservation research and practical conservation action.

A communication tool

The PR department of a zoo can help to get important and high profile conservation stories into local and national newspapers.

They act as 'loud speakers' for conservation issues and can raise national awareness. This in turn can lead to increased support for conservation through local and community action and fundraising.

What about re-introductions?

A zoo's contribution to re-introducing animals to the wild is minimal due to the fact that most wild populations are still under threat and in decline. The aim of a zoos breeding programme is to maintain 90% of genetic diversity of those species for at least 100 years. The assumption is that most re-introduction programmes will not be feasible for most species until well into the future.

However, some recent successes include:

- Golden lion tamarin
- Arabian oryx
- Californian condor
- Field Cricket

“The roles and priorities of zoos have changed substantially in the past 200 years, but most accredited zoos now cite conservation as their

Research is defined as “original investigation undertaken in order to gain knowledge and understanding”

How ZSL supports *in-situ* conservation

Conservation Programmes

ZSL Conservation Programmes are run in over 80 countries world wide. We have a large team of researchers and conservationists working both in the field and within the Zoo. Conservation programmes work closely with the Institute of Zoology.

7 regions where we work

1. UK and Europe
2. Americas
3. Oceania
4. Africa
5. Asia
6. UK and Overseas Territories
7. Antarctica

ZSL is focused on advancing the following large-scale conservation initiatives:

1. Conservation Breeding
2. Top Predators
3. Animals on the EDGE
4. Conservation Technology
5. Conservation for Communities
6. Business and Nature
7. Status of the Planet
8. Inspiring the Next Generation

www.zsl.org/conservation/about-zsl-conservation

Institute of Zoology

The Institute of Zoology is the research division of ZSL, specialising in scientific issues relevant to the conservation of animal species and their habitats. It is a government-funded research institute. The funding comes from the same body that funds universities.

Research themes within the Institute include:

- Behavioural and population ecology
- Biodiversity and macroecology
- Evolution and molecular ecology
- People, wildlife and ecology
- Wildlife epidemiology

www.zsl.org/science/research/

Fundraising and campaigns

Through various activities, ZSL raises much needed funds to support conservation projects. One of our largest campaigns to date is for Asiatic Lions. We aim to raise £5.7m to protect and save the last 500 Asiatic lions left in the wild and create a state-of-the-art Asiatic lion hub and exhibit at ZSL London Zoo.

Fundraising activities for the campaign have included:

- £135,000 raised at a gala night
- £80,000 from comedy night Roar with Laughter

www.zsl.org/support-us/zsls-asiatic-lions-campaign

Some examples of ZSL conservation and research work:

Amphibian disease research

Batrachochytrium dendrobatidis is a chytridiomycete fungus which is causing declines of amphibian populations and species extinctions across the world. ZSL is using field work, population genetics and experiments to determine how infection occurs, what conditions lead to amphibian mortality and what conditions aid, or retard, transmission.

We also want to determine if the Rana virus is spreading, and if so, if disease dispersal is aided by frog movement. We also hope to assess the impact of viral reservoirs on the persistence of the disease in the U.K. Population genetics provides a means by which many of these questions can be answered.

www.zsl.org/users/trenton-w-j-garner

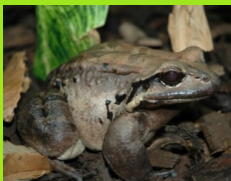
www.zsl.org/conservation/species/reptiles-and-amphibians

Bushmeat research project

The Bushmeat Research Programme at the Institute of Zoology, the research arm of the Zoological Society of London, is involved in research to enhance our understanding of the bushmeat trade in West and Central Africa. A better understanding of the trade will assist both policy makers and project managers to develop effective methods of regulation and management for sustainability. This work is interdisciplinary in its design: it tackles the biological, economic and social aspects of the trade, using a variety of approaches including field research and mathematical modelling.

www.zsl.org/users/marcus-rowcliffe

www.zsl.org/science/research/bushmeat



EDGE of existence

The EDGE of Existence programme is an innovative ZSL research and conservation initiative that focuses on the world's most Evolutionarily Distinct and Globally Endangered EDGE species.

Using a scientific framework to identify the world's most Evolutionarily Distinct and Globally Endangered (EDGE) species, the EDGE of Existence programme highlights and protects some of the weirdest and most wonderful species on the planet. EDGE species have few close relatives on the tree of life and are often extremely unusual in the way they look, live and behave, as well as in their genetic make-up. They represent a unique and irreplaceable part of the world's natural heritage, yet an alarming proportion are currently sliding silently towards extinction unnoticed.

www.edgeofexistence.org

www.zsl.org/conservation-initiatives/animals-on-the-edge



Marine Mammal Stranding

This long-term research on UK-stranded cetaceans (whales and dolphins) enables specific causes of disease and mortality to be identified and permits the evaluation of spatial and temporal trends in indices such as causes of mortality and how they may be influenced by environmental factors such as exposure to chemical contaminants.

www.zsl.org/users/paul-jepson

www.zsl.org/science/research/csip

“The aim of the EDGE project is to put these species on the map and catalyse conservation action to secure their future”

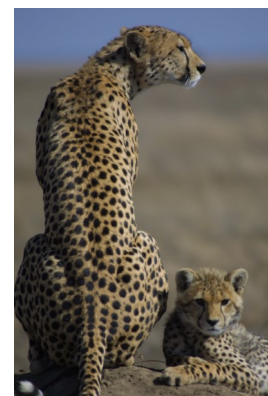
Cheetah research project

The Tanzania Carnivore Conservation Project at the Tanzania Wildlife Research Institute (TAWIRI) is funded by the Zoological Society of London and the British Government through their Darwin Initiative. It aims to build the capacity of the TAWIRI to monitor and conserve carnivores, with a special emphasis on Cheetahs and Wild Dogs, two threatened species of which Tanzania holds globally important populations.

www.zsl.org/conservation/regions/africa/tanzania-carnivore-conservation

www.tanzaniacarnivores.org

www.zsl.org/users/nathalie-pettorelli



Volunteering and work experience at ZSL

Jobs at ZSL, volunteering opportunities and intern positions are advertised online at www.zsl.org/about-us/jobs



Volunteer with our marine and freshwater team in London.

Email marineandfreshwater@zsl.org for more information or visit

www.zsl.org/conservation/habitats/marine-and-freshwater



Enter to
win!

ZSL Prince Philip Award and Marsh Prize

ZSL's annual programme of science and conservation awards recognises achievements in science.

Applicants for the Prince Philip Award and Marsh Prize should be under 19 years old and currently studying at a UK school/other place of education. The award is for the best zoological project involving some aspect of animal biology.

The winner receives a monetary prize and the winner's school or college receives a medal and a certificate

Further details about entry requirements can be found at:
www.zsl.org/science/zsl-science-and-conservation-awards

Photo: Previous winner Carly Brown, Taunton School. Awarded for her project *Can the common garden snail see in colour?*



Useful web links

Operation Charm

www.operationcharm.org

Operation Charm was launched by the Metropolitan Police in 1995. It is the only current initiative against the illegal trade in endangered species in the UK and uses a combination of law enforcement and publicity in London.

The illegal trade in wildlife is huge. Globally, it is estimated to be worth over £5 billion every year and is a major area of international crime. However, the illegal trade in endangered species does not just happen in other countries; it thrives in the UK too and Operation Charm is working to stop this trade in London.

British and Irish Association of Zoos and Aquariums

www.biaza.org.uk

European Association of Zoos and Aquariums

www.eaza.net

World Association of Zoos and Aquariums

www.waza.org

ARKive

www.arkive.org

A unique collection of thousands of videos, images and fact-files illustrating the world's species.

IUCN red list

www.iucnredlist.org

The IUCN Species Programme working with the IUCN Species Survival Commission (SSC) has spent the past fifty years assessing the conservation status of species, subspecies, varieties, and even selected subpopulations on a global scale in order to highlight taxa threatened with extinction, and therefore promote their conservation.

The IUCN Red List of Threatened Species™ provides taxonomic, conservation status and distribution information on plants and animals that have been globally evaluated using the IUCN Red list Categories and Criteria.

International Zoo Yearbook

www3.interscience.wiley.com/journal/117997665/home

The *International Zoo Yearbook* is an international forum for the exchange of information on the role of zoos in the conservation of biodiversity, species and habitats. Investigative and data-collection work into the biology and behaviour of wild animals is increasingly dependant on co-ordinated effort and shared results between all institutions engaged in the study and preservation of wildlife. Published by the Zoological Society of London as a service to zoos around the world.

ZSL quick fact file

Zoological Society of London

- is a registered charity that includes London Zoo, Whipsnade Zoo, Conservation Programmes and the Institute of Zoology.
- runs conservation projects in Britain and over 50 countries, including Cameroon, Costa Rica, Tanzania, Saudi Arabia and parts of Asia and Russia.
- has a research division called the Institute of Zoology.
- produces publications such as the *Journal of Zoology* and has an annual awards ceremony for achievements in zoological research.
- has a library that can be used by staff and visitors. The library houses a large book and journal collection including works from Charles Darwin and Captain Cook.
- has over 100,000 members supporting its work

ZSL London Zoo

- has over 750 species of animal with around 16,000 individuals.
- covers a 36 acre site.
- opened the world's first Reptile House in 1849
- opened the first ever public Aquarium in 1853
- receives more than 1,000,000 visitors per year.
- invests in the visitor and animal experience by generating funds for re-development and new animal exhibits, such as the Asiatic Lions Campaign www.zsl.org/support-us/zsls-asiatic-lions-campaign
- works towards a more sustainable mode of operation through green assessment.

ZSL Whipsnade Zoo

- opened in 1931 as Whipsnade Wild Animal Park - the world's first open zoological park
- has over 200 species of animal and nearly 3,000 individuals
- covers a 600 acre site
- bred the first cheetahs born in Europe in 1967
- the White rhino paddock is the same size as London Zoo!
- receives around 500,000 visitors per year
- has an area of chalk grassland that is registered as a Site of Special Scientific Interest (SSSI) www.zsl.org/conservation/regions/uk-europe/zsl-site-biodiversity

Quick fact:

The White rhino paddock at Whipsnade Zoo is the same size as the whole of London Zoo!

ZSL

LET'S WORK
FOR WILDLIFE



The Zoological Society of London

ZSL London Zoo

London Zoo
Regent's Park
London
NW1 4RY

Institute of Zoology

Outer Circle
Regent's Park
London
NW1 4RY

ZSL Whipsnade Zoo

Dunstable
Bedfordshire
LU6 2LF

Further reading

J. Fraser & J. Sickler Measuring the cultural impact of zoos and aquariums

Int. Zoo Yb. (2009) 43: 103-112

A.G. Clarke The Frozen Ark Project: the role of zoos and aquariums in preserving the genetic material of threatened animals

Int. Zoo. Yb. (2009) 43: 222-230

C. M. Lees & J. Wilken Sustaining the Ark: the challenges faced by zoos in maintaining viable populations.

Int. Zoo. Yb. (2009) 43: 6-18

P. D. Jepson & R. Deaville (2008) Investigation of the common dolphin mass stranding event in Cornwall, 9th June 2008.

Hosey, Melfi and Pankhurst (2009) *Zoo Animals behaviour management and welfare*. Oxford press