

A close-up photograph of a cheetah mother and her cub in a grassy field. The mother cheetah is lying down, and the cub is sitting up, looking towards the camera. The cub has a thick, fluffy coat of fur, characteristic of a young cheetah. The background is a soft-focus field of tall grass.

ZSL
LIVING CONSERVATION

THE YEAR IN REVIEW

2010



Our Vision

A world where animals are valued, and their conservation assured.

Our Mission

To promote and achieve the worldwide conservation of animals and their habitats.

Success in the spotlight

Sir Patrick Bateson reflects on a varied, busy and extremely successful year for ZSL in 2010, which raised the Society's public profile higher than ever before.

In many ways, 2010 was a triumphant year for ZSL, with the broadcasting of a major three-part TV documentary and the announcement of the Chagos Marine Protected Area (MPA). Both projects demonstrated the extraordinary dynamism and passion that ZSL's staff bring to their work.

This same passion and energy can be seen every day at ZSL's bases in London and Whipsnade, and also across the globe.

Our brilliant team at the Institute of Zoology (IoZ) continues to lead the field in scientific research, conducting studies ranging from how damaged ecosystems increase the threat of disease to the likely outcome of a proposed badger cull in the UK. Our field conservationists, meanwhile, continued to support community and conservation projects around the world; among their most exciting successes in 2010 was the rediscovery of the Horton Plains slender loris in Sri Lanka.

Closer to home, both Zoos opened major new exhibits. At ZSL London

Left A Malayan tapir

None of these achievements would have been possible without our staff, supporters, members and volunteers

Zoo, visitors were able to enjoy a wonderfully immersive experience in *Clore Rainforest Lookout* and *Night Life*, while ZSL Whipsnade Zoo welcomed back the beasts of ancient Britain with the opening of *Wild Wild Whipsnade*. We were delighted to receive a prestigious Gold Award from the Green Tourism Business Scheme, and for ZSL London Zoo to be chosen as the overall winner of Best Tourism Experience 2010 by Visit London.

Perhaps the most rewarding development, from a conservation point of view, came in April, with the creation of the world's largest MPA, covering 210,000 square miles of the Chagos Archipelago. These beautiful islands,

500km south of the Maldives, have some of the least polluted waters in the world, offering scientists an unrivalled opportunity to study a near-pristine ocean habitat and monitor the effects of climate change. ZSL was involved in the Chagos campaign from the start, coordinating partner organisations, drumming up support and raising awareness, so the successful conclusion was deeply gratifying for all concerned.

The ITV series, *The Zoo*, which took a year to film, aired in November. This engaging programme brought the work of ZSL to millions of viewers on prime-time television, not to mention giving a boost to visitor numbers.

I need hardly add that none of these achievements would have been possible without the hard work, dedication and enthusiasm of our staff, supporters, members and volunteers. ZSL's worldwide reputation and continuing success is entirely thanks to you.



Sir Patrick Bateson FRS
President, Zoological Society of London

Global reach

In 2010, ZSL ran more than 150 vital field conservation and research projects in more than 50 countries. Here is just a sample of ZSL's work at home and abroad. For more information visit zsl.org.

1 UK: Garden Bird Health Initiative

ZSL is investigating the causes of garden bird deaths and disease across the UK. Assisted by the general public and volunteers, the initiative is working to determine best practice for protecting garden birds.



2 Turkey and Greece: Fish Net

Fish Net exists to save freshwater fish species using a multidisciplinary approach. With a dynamic programme of captive breeding, education, research and field conservation initiatives, Fish Net's highlights include the rediscovery of a fish thought to be extinct.

5 Chad and Niger: Pan Sahara Wildlife Survey

ZSL works with the Sahara Conservation Fund to secure a future for the threatened fauna of the Sahara, including the last documented population of wild addax.

6 Liberia and Sierra Leone: Pygmy hippo

A focal species of ZSL's EDGE of Existence programme, scientists and conservationists have been leading efforts to save the endangered pygmy hippo. With partner organisations, ZSL captured the first photos of the species and has created a specialist group dedicated to conserving it.



7 Namibia: Tsaobis baboon

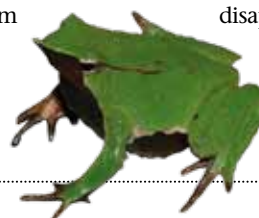
Scientists are undertaking a long-term study that so far has shed light on social foraging, sexual signals and anti-predator behaviour.

8 Cameroon: Wildlife Wood Project

ZSL's Wildlife Wood Project works with logging companies to improve wildlife management in logging concessions. The team's innovative approach helps companies to carry out 'wildlife-friendly' logging, which ensures the industry itself can play an active role in wildlife conservation.

9 Chile: Darwin's frog (EDGE)

Uniquely, when Darwin's frogs reproduce, it is the males that care for the young by incubating them in their vocal sacs. Protecting this special species is a priority for ZSL, and conservation actions include sponsoring a Chilean EDGE Fellow to discover why these frogs are disappearing and the extent to which the deadly chytrid fungus is affecting them.



3 Italy: Sardinian newt



4 Algeria: North African cheetah



12 Mexico: Whales

Scientists have been studying whales to determine the effect of rising levels of ultraviolet radiation on health. They have found that blue, fin and sperm whales exhibit skin damage associated with acute sunburn in humans, and that it appears to be getting worse over time.

19 Philippines: Project Seahorse



20 Russia: Amur tigers and leopards

It is estimated that there are only 30 Amur leopards left in the wild, and just 400 Amur tigers. ZSL is carrying out monitoring patrols to protect and survey Amur tigers and working to prevent fires that are destroying Amur leopard habitats.



13 Antarctica: Penguins

Penguins are under threat from climate change, and our scientists are using innovative techniques to help them.

14 Bangladesh: Tigers

We work with local communities to mitigate human-tiger conflict.

15 India: Gyps vultures

ZSL is providing funding and veterinary expertise to protect the country's Gyps vultures.



10 Dominica: Amphibians

Emerging infectious diseases and the lethal chytrid fungus are decimating amphibian numbers. ZSL is working to mitigate these effects and to protect amphibians on the island by using rapid diagnostic and surveillance technology.

11 Indonesia: Sumatran tiger



16 Nepal: Greater one-horned rhino



17 Thailand: Asian elephant

We work with park rangers and local villagers to mitigate conflicts between humans and elephants.



18 Sri Lanka: Red slender loris

Conservationists are leading work to discover more about the little-known red slender loris, and how to restore the forest areas in which it lives.

21 Saudi Arabia: King Khalid Wildlife Research Centre

The centre is responsible for captive breeding of endangered gazelle species and their introduction into protected areas. ZSL manages the centre on behalf of the Saudi Wildlife Commission.

22 Mongolia: Wildlife Picture Index

We are monitoring conservation programmes using camera trapping techniques.



23 Chagos Archipelago

24 New Zealand: Hihi

Endemic to New Zealand, the endangered hihi bird is one focus of scientists' attention at ZSL, in a bid to discover more about the hihi and how best to conserve it. Researchers have discovered that parent birds which eat plenty of fruit and vegetables are better able to protect their chicks against parasites.

From a major television series to the declaration of the world's largest marine reserve, ZSL continued to enjoy a high profile in 2010.

ZSL in the news



January

Taking stock

Keepers at both ZSL Zoos kicked off the year with a mammoth task – the annual animal stocktake. More than 20,000 animals were totted up across ZSL London Zoo and ZSL Whipsnade Zoo, including new Asiatic lion cubs and a newly arrived Komodo dragon.

Cleaner fish dish out punishment

ZSL scientists discovered male bluestreak cleaner wrasse have no qualms about chasing fellow fish that resort to sneaky food tactics. The study, published in the journal *Science*, found that male fish will chase any females having too much of a nibble on 'client' fish. What seems like a selfless act is anything but, as the males only have their own stomachs in mind.

February

Plotting penguins

Heading to the bottom of the globe, ZSL scientists undertook an Antarctic voyage to discover how best to protect penguins from the effects of climate change. With support from travel company Exodus, scientists are plotting colony movements to devise the best actions for conserving these birds.

Leaving nothing to chance

Tigers at ZSL Whipsnade Zoo became ambassadors for their wild counterparts by sending out a stark message at the start of the Chinese Year of the Tiger. Siberian tigers Mickail and Anastasia had their usual playthings replaced with giant dice to remind people that the species' survival in the wild must not be left to chance and that more must be done to conserve the species.



March

Wildlife outprices gold

Scientists at ZSL shone the spotlight on a wildlife treasure trove in Guyana under threat by gold dredging. Surveys by the team revealed an abundance of threatened wildlife living in the area, which helped the practice become outlawed in the unspoilt Rewa Head region.

The capital gets its very own rainforest

ZSL London Zoo brought the sights, sounds and smells of the Bolivian rainforest to the city, with the opening of a new exhibit. Housed in the *Clore Rainforest Lookout*, the immersive *Rainforest Life* and *Night Life* experiences are proving to be a big hit with intrepid visitors.



Zookeeper Lucy and a pair of meerkats



Sir David Attenborough and Kate Humble

May

Doorstep conservation

Restoration work on ZSL Whipsnade Zoo's ancient chalk grassland – designated a Site of Special Scientific Interest – paid off when Natural England botanically reclassified it from being a site in decline to one in recovery. The Zoo's horticultural team had worked hard to return the site to its former glory and was rewarded with a host of wild visitors.

June

Scientists at Speakers' Corner

ZSL transformed Speakers' Corner in Hyde Park, London, into an arena for public learning and debate centred on the National Science and Engineering Week's 2010 theme of 'Earth'.

Speakers' Corner hosted 16 UK scientists, who stood on their soapboxes to speak to the public about Earth Evolution, Earth Challenges and Earth Solutions.



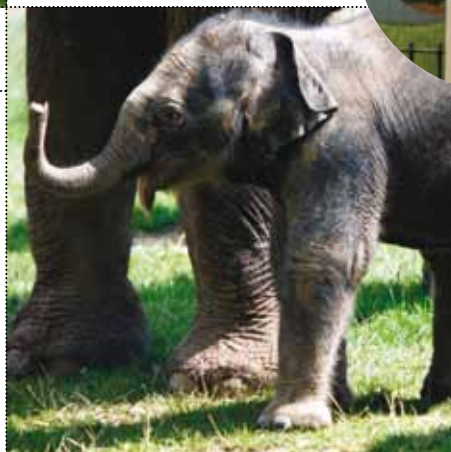
April

History makers

Staff from across the Society joined forces to campaign for the pristine waters of the Chagos Archipelago to receive protection from the UK government. More than 275,000 people lent their support to the campaign, helping to create the world's largest Marine Protected Area.

The beasts are back

Turning the focus closer to home, ZSL Whipsnade Zoo welcomed the beasts of Old England to the Zoo, as part of the new *Wild Wild Whipsnade* exhibit. Lynx, wolverine and moose are some of the species wowing visitors.



eBay elephant

ZSL decided to auction the naming rights to its new elephant calf on eBay to raise money for conservation. Public relations company Ketchum Pleon placed the winning bid of £2,500 and named the calf George, after the company's founder.

Lights, camera, action

The cameras were rolling when ZSL London Zoo hosted BBC2's *Wild Night In* show. Broadcasting live from the *B.U.G.S!* exhibit, the two-hour telethon, which featured Sir David Attenborough, raised over £1 million for conservation projects around the world.

A deathly discovery

Scientists from ZSL revealed that more than 5,000kg of illegal bushmeat are being smuggled each week through one of Europe's busiest airports. The disturbing discovery was made while working with customs officials at France's Roissy-Charles de Gaulle Airport.

July

'Extinct' slender loris caught on camera

After taking the first-ever photos of the subspecies, ZSL conservationists discovered that the elusive Horton Plains slender loris, part of ZSL's EDGE programme and thought by many biologists to be extinct, is alive and living in Sri Lanka.

Chain reaction

A trio of runners from ZSL celebrated the International Year of Biodiversity by chasing each other round the Asics British 10k Run dressed as a leaf, an ant and an anteater. The speedy food chain raised more than £1,000 for the Society.



Horton Plains slender loris



Mammal numbers crash in Africa's parks

Africa's national parks have been hit by declining mammal numbers, discovered scientists from ZSL and Cambridge University. Parks like the Serengeti have seen large mammal populations drop by almost 60% since 1970, with destruction of habitat and increasing bushmeat trade being blamed. The findings demonstrate that more funding is needed for park conservation efforts.



Groundbreaking arrivals

The birth of five critically endangered northern cheetah cubs at ZSL Whipsnade Zoo marked the first time the species has been bred in the UK. Offspring of mother Dubai and father Shiraz, the adorable youngsters are helping to form a crucial captive back-up population of the fascinating felines.

August

The wildest nights of the year

Silent discos, animal talks and after-work merriment were the order of the evening as Zoo Lates took place each Friday in August. More than 25,000 young professionals came along and proved that, for a roaring night out in the capital, ZSL London Zoo is the place to be.

Going wild for BedBUGS

Children experienced ZSL London Zoo in a whole new light, as they settled down for the Zoo's first-ever sleepover. The new BedBUGS events allow children to explore the Zoo after dark, before bedding down next to spiders, cockroaches and the thousands of other creepy-crawlies resident in the Zoo's *B.U.G.S!* exhibit.

September

Learning stinks

Education officers at ZSL Whipsnade Zoo helped to find a fun way to use our animals' poo in the classroom. Giraffes, lions and even a praying mantis are just some of the animals that provided the smelly samples. After being coated in a protective resin, the faeces is used as an unusual prop to help teach children about the different diets and digestive systems of animals.

Miracle rhino birth

Conservationists celebrated the important arrival of the first rhino calf to be born in Bardia National Park, Nepal, since ZSL helped halt poaching two years ago. The birth of the calf also coincided with the arrival of a whopping 13th greater one-horned rhino calf at ZSL Whipsnade Zoo.





October

Evolution Lost

The most comprehensive stocktake of the world's vertebrates was published by ZSL in *Evolution Lost*. Shockingly, the publication revealed that one-fifth of all vertebrate species are threatened with extinction.

Gorilla birth

The birth of a male western lowland gorilla has delighted staff and visitors at ZSL London Zoo. The youngster has become the apple of his mother's eye since joining the group at *Gorilla Kingdom*.

November

Eco-zoo

Fantastic recognition was received for the environmentally friendly methods ZSL employs to run its Zoos. As part of the Green Tourism Business Scheme, ZSL London Zoo received its prestigious Gold award after satisfying a rigorous set of criteria, including water efficiency and energy usage.

ZSL goes on air

Exploring all aspects of life at ZSL, a fly-on-the-wall documentary, called *The Zoo*, hit the screens of prime-time television. Airing on ITV1, the three-part series was as much about the Society's staff as about the animals, and helped to demonstrate just what makes ZSL such a special and unique charity.

ITV filming in Nepal



Ultrasound George

ZSL Whipsnade Zoo released an incredible ultrasound image of George the baby elephant, captured 19 months before he was born. Taken during one of mum Karishma's regular scans throughout her 22-month gestation, keepers and vets were amazed by the unusual clarity of the image.

December

Best tourism experience

Celebrations were under way at ZSL London Zoo after it was crowned the winner of Visit London's award for Best Tourism Experience 2010. The Zoo saw off tough competition from other leading London attractions, including the Science Museum and London Eye, to claim the prestigious award, which celebrates the best of tourism and all that's great about the capital city.

New heights

The number of ZSL members reached an all-time high of 60,000 – more than doubling its numbers from just two years ago.

ZSL's Rich Storton and James Wren





The Living Collections

The Society's two Zoos had a remarkably busy year, with some exciting new developments and breeding successes.

Zoo developments

In November, ZSL London Zoo's invertebrate department received two specimens of snail called *Partula subgonocheila*, originally wild-caught in Polynesia. These precious specimens are the only ones in any zoo, and herald our long-standing conservation focus on *Partula* snails, which will culminate in their reintroduction to the wild.

At the other end of the evolutionary scale, the gorilla family at ZSL London Zoo endured highs and lows in 2010, with the birth of a male gorilla and the death of the sire. Bird keepers, meanwhile, developed an innovative technique to make sure chicks receive the nourishment they need, training different species of birds to feed from differently coloured feeders – which increased breeding successes in turn.

Successful breeding of endangered species, such as the greater one-horned rhinos and northern cheetahs at Whipsnade, or the western lowland gorilla and beaded lizards at London,

Left A new arrival at Gorilla Kingdom

New exhibits are the means to continually improve the care of the animals and to realise the connection between humans and animals

add significantly to the 'insurance' populations held in zoos globally. For other species, such as the mountain chicken frogs or slender loris, successful reproduction in these populations is of international conservation significance.

New exhibits are also the lifeblood of zoos. Not only are they the means to continually improve the care of the animals, but they are also designed to realise the unique connection between humans and other animals that only zoos can deliver. ZSL London Zoo's new *Rainforest Life* and *Night Life* experiences and *Wild Wild Whipsnade* did just that, encouraging visitors to come and see new and different animals. Attracting visitors to our Zoos allows us

to convert entrance fees into mission payback, thus increasing ZSL activities in conservation, education and research. Building updates are important too, and Hall 1 of the Aquarium has been undergoing major improvements.

Zoo staff shared their expertise with international zoos, leading workshops on bird husbandry, chairing committees and initiatives such as the International Species Information System. They also worked with partner zoos in Ghana and Nepal, and maintained their involvement in ZSL's field work, with the Curator of Herpetology, for example, joining field visits to China and Dominica.

Research into our own collections is also growing, with projects conducted during the year focusing on husbandry improvements and behaviour. Nineteen students graduated from our Masters Course in Wild Animal Biology and six from the MSc in Wild Animal Health, which ZSL jointly runs with the Royal Veterinary College. Our vets, meanwhile, are leading research on everything from elephant herpes to iron-storage disease in toucans.



iPhone app
 A brand-new iPhone app was launched for visitors to ZSL London Zoo in October. The free app, which helps plan your day, has gone down a storm, with 20,000 downloads in just three months

Cheetah births

August 2010 witnessed the birth of five vitally important cheetah cubs at ZSL Whipsnade Zoo. Their mother, Dubai, and father, Shiraz, are members of a rare subspecies known as the northern African cheetah: only nine groups exist in captivity worldwide.

With fewer than 1,000 individuals left in the wild, making sure that there's a healthy captive back-up population is crucial to the animal's survival. And as Whipsnade's litter of cubs mark the first time that the subspecies has been bred in the UK, it's an achievement that will go a long way towards increasing that insurance population.

The cubs – three boys and two girls – were named Itjane, Sanne, Tlata, Rabaa and Khamssa, which translates as numbers one, two, three, four and five in the North African language of Berber. The whole litter has been delighting the press since their unveiling in September, featuring extensively on TV, and in newspapers

and magazines, as well as in a number of hugely popular videos on YouTube, watched by more than 16,000 Zoo fans.

Triumph and tragedy

Millions of people tuned in as ZSL became the star of documentary *The Zoo*. For over a year, camera crews filmed day and night for three hour-long episodes, which aired in November on ITV1.

From health checks on frogs and protecting rhinos in Nepal to the

triumphant birth of an elephant calf and the tricky business of breeding Komodo dragons, *The Zoo* explored all aspects of the Society's work.

But with the highs came the lows. During filming, ITV1's cameras also bore witness to a time of sadness. In March, Yeboah, ZSL London Zoo's male western lowland gorilla, died unexpectedly following a short illness. But while his death came as a great shock, the dedication shown by ZSL's veterinary and keeper teams during Yeboah's illness summed up the true spirit of the Society.

Both teams worked tirelessly to save the blackback gorilla. Specialists in haematology, endocrinology and urology were drafted in to help and find a way to save Yeboah, but, sadly, while under general anaesthetic, the 12-year-old took a turn for the worse and never recovered.

Yet life goes on. Yeboah made his impact on the world with the birth of his son. Born in October to mother Mjukuu, the youngster is currently being introduced to new dominant male Kesho. Although always a sensitive period, at the end of 2010 things were

Whipsnade's litter of cheetah cubs mark the first time that the subspecies has been bred in the UK, helping to increase an insurance population



Above (l to r) The cheetah cubs; filming *The Zoo* **Below** Emperor tamarin monkey

looking good, and it's hoped the group will soon be living in the right social structure in the comfort of *Gorilla Kingdom*.

Two new exhibits

Following an extensive redevelopment, ZSL London Zoo's *Clore Rainforest Lookout* was reopened as two new experiences: *Rainforest Life* and *Night Life*.

Entering *Rainforest Life* is to find yourself in the tree canopy of a South American rainforest. The walkways have become part of the whole rainforest feel, with the canopy stretching overhead, giving visitors a sense of the humid atmosphere. Within the foliage is a plethora of animals. Emperor tamarin, mandrill and sloths are just some of the species to call *Rainforest Life* home.



In the detail

Horticulture

SSSI turnaround

Our horticulturists at ZSL Whipsnade Zoo have been on a mission to champion local conservation – and they've started with the Zoo's back garden. The Zoo is home to 26ha of ancient chalk grassland, designated as a Site of Special Scientific Interest (SSSI) by Natural England, but maintaining such a large site is time-consuming, especially as the five-strong team is also responsible for maintaining the rest of the Zoo's 240ha of land. With all these demands, the past few decades had seen the SSSI fall by the wayside in terms of priority. However, by turning the focus back to the SSSI two years ago, the land has begun to flourish once more. Key activities included ridding the SSSI of invasive plant species and returning to traditional methods of chalk grassland management. And the results speak for themselves. During the summer of 2010 the SSSI was awash with butterflies and other wildlife drawn to the site's new abundance of wild flowers.



Best of all, Natural England has reclassified Whipsnade's SSSI from a site in decline to a site in recovery. A fantastic achievement.

After visitors have made their way around the tropical biome, they can then discover what the rainforest is like after dark. From bat caves to naked mole rats, *Night Life* is full of creatures that have adapted to life without sunlight.

The change of scenery also seems to have ignited the animals' libidos. Breeding successes for 2010 at the exhibit include emperor tamarins, Australian water rats, hairy armadillos, seba bats and cotton-top tamarins. And it's not just the exhibit's residents that are appreciating the facelift. Research showed that 57% of visitors went into *Rainforest Life* in 2010, compared with just 9% in 2009. Satisfyingly, it was also rated the most enjoyed exhibit.

Heading north to ZSL Whipsnade Zoo, another fantastic new exhibit was unveiled over Easter 2010. Exploring the Britain of yesteryear, *Wild Wild Whipsnade* introduced exciting new species to the Zoo, including Eurasian lynx, wolverine, moose and wild boar. The exhibit enables visitors to discover more about these animals, understand their origins, and their fight for survival in the modern world.

Sustainability for the future

Reducing our environmental footprint is an ongoing objective for ZSL and, for the second year running, we achieved ISO14001 accreditation for our Environmental Management System. The key areas include reducing water and energy consumption, carbon emissions and waste. Over the past five years, water consumption at ZSL's bases in London and Whipsnade has been halved.

Recycling improvements have been another great success, as we now recycle 15 different waste streams. At ZSL London Zoo, all food waste from our canteens is sent to anaerobic digesters to produce energy, while at ZSL Whipsnade Zoo, animal waste from herbivores is used by a local farm to fertilise crops.

Central to our sustainability programme, however, is communicating the value of acting sustainably to our staff, and the thousands of Zoo visitors we receive each year. By building sustainability into ZSL we are making it stronger for the future.



Rhino boom

ZSL Whipsnade Zoo's breeding success with rhinos continued, with the births of two greater one-horned rhinos.

In September, a 13st male calf arrived and was named Ajang, which is Nepalese for 'enormous'. The youngster was bounding around his enclosure in almost no time at all.

However, it was another story for Ajang's half-sister. After being born breeched, the traumatised calf was unable to suckle properly. Keepers and vets decided to feed her by bottle. After three days she finally responded and began feeding by herself. The calf was named Karamat, 'miracle' in Nepalese.

Whipsnade's wild rhino cousins also experienced a good year. This Critically Endangered rhino is the focus of a ZSL conservation programme, working to protect the species in Nepal's national parks. So it was cause for celebration when the first calf was born in Bardia National Park since poaching was halted almost two years ago.

Research
During 2010, more than 50 research projects were undertaken at ZSL's Zoos. Topics ranged from a BSc on lemur personality to a PhD on primate enrichment

Fish Net

This initiative picked up pace, with the establishment of the Fish Net Turkey project. Memoranda of understanding were signed with Hacettepe University in Ankara and Doga Dernegi, Turkey's leading environmental NGO, as well as with Vienna Zoo.

The project combines ZSL's expertise with the aim of saving some of the world's most threatened freshwater fish. Our staff visited central Turkey to look for the critically endangered killifish, as well as reviewing the crucial locations for other threatened species. This formed the groundwork for what we hope will be a long-term project, which we are seeking funding for.

Back at ZSL London Zoo, a new population of Turkish killifish spawned more than 200 fry, plus good hatches of the critically endangered Corfu killifish and extinct in the wild Potosi pupfish. The populations of two Mexican livebearers – the critically endangered

ZSL Whipsnade Zoo's breeding success with rhinos continued, with the births of two greater one-horned rhinos

crescent zoe and blue-tailed goodeid – were also improved significantly.

Seahorse success

The Aquarium had a record-breaking number of short-snouted seahorse births. New rearing techniques were trialled and improved on through the British and Irish Association of Zoos and Aquariums (BIAZA) Seahorse Focus Group, resulting in more than 3,500 babies being born to three pairs of this native UK seahorse. The juveniles will form part of the UK breeding population by being paired with offspring from other institutions.

Above (l to r) Rhino and calf at Whipsnade; a Fish Net survey team sorting a fish catch



MSc students

Nineteen students graduated from the 2009/10 Masters Course in Wild Animal Biology and six from the MSc in Wild Animal Health, which ZSL runs with the Royal Veterinary College. The graduates have now dispersed to work in wild-animal conservation and welfare. For example, Emmelianna Bujak recently won the Vodafone World of Difference Award and has used it to travel to Vietnam to conduct research and provide education to preserve otter habitats in the southern Mekong Delta, home of the rarest species, the hairy-nosed otter. Overall, our graduates have originated from 50 countries on six continents of the world, illustrating the global reach of these courses.

Each student carries out a research project on a topic related to wild-animal health or biology. For example, from last year's course, Katriona Smith's project was on London Zoo's lemurs, entitled 'Can ring-tailed lemurs (*Lemur catta*) show self-control?'. Many projects give rise to scientific publications and more than 90 have been published.

In the detail

Studbooks



ZSL works with zoos across the globe to ensure there is as much genetic variance in captive populations as possible. We do this by being part of formal breeding programmes, which are organised with the use of a studbook. At ZSL we are the species coordinators, or studbook holders, for a variety of species. This means we use the genetic information in the studbook records to decide which animals should be paired for breeding.

The studbooks we continued to manage in 2010 included:

European studbooks

- Abdim's stork
- Black hornbill
- Chestnut-backed thrush
- Pied hornbill
- Toco toucan

European Endangered Species Breeding Programme

- Amur leopard
- Amur tiger
- Arabian oryx
- Frégate Island beetle
- Golden lion tamarin
- Nile lechwe
- Sumatran tiger

Global Species Management Programmes

- Partula* snail
- Sumatran tiger



New for 2010

These are just some of the new arrivals/births for 2010:

BIRTHS

- Northern cheetah cubs
- Western lowland gorilla
- Ostrich chicks
- Moon jellyfish (left)
- Asian elephant
- Turkish killifish
- Red river hoglet
- Large hairy armadillos (left)
- Greater one-horned rhinos
- Hooded pittas

ARRIVALS

- Hunting dogs
- Lynx (left)
- Dancing shrimps
- Scimitar horned oryx
- Wolverine
- Western lowland gorilla
- Sea lions
- Copper sunbird
- Bactrian camel
- Toe-biter water bugs



Field Conservation

ZSL works around the world to help governments, business and local communities to protect animals and their habitats from environmental damage and degradation.

A year in action

ZSL's mission is to promote the worldwide conservation of animals and their habitats. In addition to our UK base, we have conservation projects and collaborations in more than 50 countries. 2010 was a very successful year that saw the creation of new protected areas, the discovery of new species and the publication of important research defining the status and trends of our planet's biodiversity.

At the species level, we focus on Evolutionarily Distinct and Globally Endangered (EDGE) species and address a number of international crisis areas. We laid the groundwork for our EDGE Coral Reefs programme and launched the updated EDGE Mammals list, which includes new focal species ranging from bat-eared bushbabies to scaly anteaters. We developed conservation strategies for the Chinese giant salamander, Bactrian camel, red slender loris and pygmy hippo. We started exciting new projects to conserve the Ganges River dolphin in

Left Hawksbill sea turtle

2010 saw the creation of new protected areas, the discovery of a new species and important work on trends in global biodiversity

India and the elusive okapi in the Democratic Republic of the Congo. As part of the Pan Sahara Wildlife Survey, ZSL confirmed the presence of a small population of addax in Chad, only the second known to persist in the wild. In Nepal, we provided training to continue the monitoring, surveillance and anti-poaching work for rhinos. We also strengthened our commitment to tiger conservation, building capacity in the last tiger strongholds.

At the ecosystem level, we conserve the remaining wilderness areas and the ecosystems that are essential for supporting both human populations and high levels of biodiversity. In West and Central Africa, we worked with

logging and mining companies to help reduce their impact on forest ecosystems, while in Southeast Asia we worked with the Roundtable on Sustainable Palm Oil to support biodiversity on and around concessions. Fish Net was launched, focusing on freshwater habitat restoration and conservation breeding of highly threatened fish. We also conducted studies on the bushmeat trade to investigate acceptable alternatives.

2010 was also the year of the 10th Conference of the Parties to the Convention on Biological Diversity, which set 20 targets to be achieved by 2020 if we are to stem the loss of biodiversity. ZSL is uniquely placed to help governments and agencies meet the new targets. Our strong science and convening base, active field conservation presence and more than a million visitors a year to our two Zoos enables us to highlight and communicate the major issues facing our generation, identify solutions and respond effectively. By building on our past successes and forging new partnerships, we hope to conserve our planet's amazing biodiversity for future generations.



Chagos – the world's largest Marine Protected Area

The British Indian Ocean Territory (BIOT), also known as the Chagos Archipelago, is a group of islands approximately 500km south of the Maldives. The Chagos have some of the least-polluted waters on Earth, the world's largest coral atoll, exceptional undersea geological features and internationally important colonies of breeding seabirds. As a result, they offer a unique opportunity for scientists to study the impact of climate change and other pressures on ocean habitats.

In late 2009, the Foreign Office opened a public consultation that presented a range of options for future management of the Chagos. ZSL engaged with this consultation as part of the Chagos Environment Network (CEN), which represents a number of high-profile science and conservation organisations. CEN strongly supported the cessation of all commercial fisheries in order to create the world's largest

'no-take' Marine Protected Area (MPA), covering 210,000 square miles.

ZSL led the CEN communication strategy, which included a website encouraging people to sign up in support for the no-take MPA, as well as a postcard campaign, letters of support from marine conservation organisations and scientists, and features in the national and international press.

More than 275,000 people and organisations declared their support, and on 1 April 2010, it was announced that a full no-take MPA had been designated to protect the Chagos Archipelago.

ZSL has subsequently hosted a workshop to devise a future research and management strategy for the Chagos/BIOT MPA. ZSL is now exploring ways of strengthening management and conservation within the no-take MPA.

On 1 April 2010, the world's largest 'no-take' Marine Protected Area was announced

Global wildlife stocktake

The most comprehensive stocktake of the world's vertebrates, produced by ZSL, enables us to estimate the conservation status of all vertebrates for the first time.

Evolution Lost reveals that populations have declined on average by 30% over 40 years, and one-fifth of all species are threatened with extinction. Terrestrial mammal populations have declined by about a quarter, marine fish by a fifth and freshwater fish by as much as 65%.

The book is illustrated throughout using ZSL's extensive collection of zoological plates and prints dating from the 18th century. Each chapter concludes with examples of Evolutionarily Distinct and Globally Endangered (EDGE) species, to give an overview of the evolutionary history the world will lose if current extinction rates continue.

The new IUCN Red List data in *Evolution Lost*, which was published in the journal *Science*, also highlighted the fact that biodiversity would have declined by an additional 20% if conservation processes had not been in place.



Wildlife Picture Index
 Using camera-tracking technology to measure the success of species conservation in protected areas, in 2010 WPI was extended to two new reserves in Mongolia

EDGE new discoveries

Rediscovering the Horton Plains slender loris

As part of ZSL's red slender loris project in Sri Lanka, the research team rediscovered the virtually unknown Horton Plains slender loris. Originally documented in 1937, it had been glimpsed only four times in the past 72 years.

The capture by the team resulted in the first detailed examination of this subspecies, which demonstrates adaptations to montane forest, with short limbs and long, dense fur.

The team is now focusing its efforts on the conservation and restoration of the montane forest, where this loris still exists. Currently, this accounts for less than 1% of the land area of Sri Lanka.

Elusive elephant shrew found in Kenya

When a Kenyan student received an EDGE Fellowship to study the golden-rumped elephant shrew, she had little

idea that she would discover a mammal potentially new to science.

The endangered golden-rumped elephant shrew is one of only four such species surviving today and is endemic to the highly fragmented coastal forest of eastern Kenya. The project began in the Arabuko-Sokoke Forest and then moved to the less-studied Boni and Dodori Forests.

The expedition discovered that the Boni Forest is indeed home to a species of elephant shrew, but brief glimpses suggested it might be different enough to be classified as a new species.

A joint ZSL/Kenya Wildlife Service (KWS) expedition corroborated the initial suspicions when scientists documented a number of distinguishing features. Now ZSL, KWS and partners need to determine conclusively if this is a new species.

The findings of the study highlight the conservation status and poor state of the current knowledge of the forests: the area is highly threatened by ongoing development and urgently needs an effective conservation strategy.

In the detail

ZSL EDGE of Existence

ZSL's EDGE of Existence programme highlights and conserves one-of-a-kind species that are on the verge of extinction. To determine the species most in need of conservation actions, the team has scored the world's mammals and amphibians according to how Evolutionarily Distinct and Globally Endangered (EDGE) they are.

The EDGE programme raises the public profile of these species, and catalyses action to secure their future. Each year, a number of the most poorly known and neglected EDGE species are selected by ZSL for conservation attention.

A key strategy of the EDGE team is the support of EDGE Fellows, chosen from in-country scientists, who help to conserve EDGE species.

EDGE is dependent on the kind support of many funders, including Synchronicity Earth and Save Our Species, a joint initiative between IUCN, World Bank and the Global Environment Facility. For more information, go to zsl.org/edge.

Above (l to r) Chagos survey; Horton Plains slender loris; Mongolian marmot on WPI



Mangrove eco-park

On the island of Panay in the Philippines, ZSL has been working with local communities to help them replace vital mangrove forests.

Mangrove swamps are important nursery grounds for a host of fish and invertebrate species. Unfortunately, in recent years, around 36% of the world's mangrove swamps have been devastated for logging, and commercial fish and shrimp ponds. The mangroves also help protect the land from the force of the sea.

In January, an 800m boardwalk was opened for visitors to explore deep into the mangrove swamps. Part-funded by ZSL, the boardwalk forms an eco-park, which raises visitor awareness, and provides income for local communities who helped construct the boardwalk and now manage the eco-park.

The eco-park attracted more than 1,200 visitors in September alone, and has been voted a 'must-see' attraction by a national airline, bringing much-needed income to communities and supporting conservation of the forest.



Tiger-friendly carbon credits

The Berbak Carbon Initiative project received a boost when the British Embassy in Indonesia hosted a reception to showcase the work to government officials and potential investors. Ambassador Martin Hatfull spent three days visiting ZSL's base camp in the national park, accompanied by senior Indonesian government officials, his support raising the project's profile significantly. The Berbak project is now recognised by the Indonesian government as a REDD+ pilot project.

The project aims to conserve the Berbak ecosystem and its wildlife,

In January, an 800m boardwalk was opened on the island of Panay for visitors to explore deep into the mangrove swamps

including the iconic Sumatran tiger, by creating a financial incentive to stop forest clearance through emerging carbon markets – 'tiger-friendly carbon credits'. Berbak is a peat swamp and, if protected, will sequester large volumes of carbon from the atmosphere instead of, as at present, emitting huge amounts of CO₂ to the atmosphere through illegal fires, draining and logging activities.

ZSL intends to assist the Indonesian government to turn the Berbak system from a drain on government resources into a major revenue generator – without chopping it down.

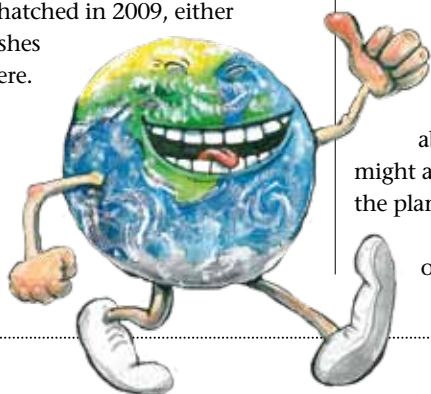
Clockwise from top left Panay's mangrove boardwalk; Berbak National Park, Indonesia; corncrake; Martin Hatfull at ZSL's Berbak camp



Corncrake breeding

2010 was a challenging year for the corncrake reintroduction programme as the extended period of cold weather hindered breeding efforts. However, the team managed to turn the season around, with the release of 48 corncrakes, bred at Whipsnade, on the Nene Washes.

Studies on the corncrakes on the Washes early in the year found 21 singing males, of which 14 were bred at Whipsnade. One male was released in 2007, one in 2008 and 12 in 2009. A female caught in the summer was bred at Whipsnade and released in 2006. Two wild-bred chicks captured with her may have been her young. Five unringed singing males were probably hatched in 2009, either at the Washes or elsewhere.



Nagoya CBD-COP 10

A delegation from ZSL attended the 10th conference of the parties of the Convention on Biological Diversity (CBD-COP 10) in Nagoya, Japan, which aimed to address the global diversity crisis, with representation from all the 190 signatory countries present.

ZSL presented work on the status and trends of the world's vertebrates, National Red Lists, the coral reef crisis and innovative approaches to investing in natural capital. The conference provided the perfect opportunity for ZSL to launch two films, three major collaborative reports and two books, including *Stories for our Children: The world in 2050*. Presented in the style of a children's book, but aimed at adults and illustrated by cartoonist Martin Rowson, it is designed to make us think about the questions our children might ask us in 40 years' time if we leave the planet to them in such a state.

Go to zsl.org/solutions to find out more.



In the detail

Lazo's Amur tigers

In the Russian Far East, ZSL's Amur tiger team was delighted to discover eight resident tigers living in the Lazovsky State Nature Reserve. Last year, only six tigers were found on the reserve, the fewest number in 10 years.

The large male tiger shown left, called Griesha – photographed in the reserve in December – is exhibiting a flehmen response, a behaviour used to help detect scents left by other animals. By looking at his teeth, the team determined that he is probably around 10 years old, which is a good age for a tiger.

The future of the project and Lazo's tigers looks bright, thanks to a new collaboration with Wildlife Conservation Society (WCS) Russia and local NGO Phoenix Fund.

Software, known as MIST, which has been funded by the Save the Tiger Fund, will help us to combat poaching in Lazovsky and three other reserves, while a three-year grant from the Dorothy Howard Charitable Trust is enabling expansion of our work into nearby Zov Tigra National Park.

With publicity from the Global Tiger Summit in St Petersburg and political backing from Prime Minister Putin, we hope this trend of increasing tiger numbers in Russia continues.



In the detail

Range Wide Okapi Conservation Project

ZSL, together with the Congolese Institute for Nature Conservation (Institut Congolais pour la Conservation de la Nature), started leading a three-year collaborative multi-partner project to carry out an assessment of the conservation status of the little-known okapi across its range in central and north-eastern Democratic Republic of the Congo.



Conservation Science

The Institute of Zoology is the scientific research wing of ZSL, which carries out leading-edge research and education for the conservation of animal species and their habitats.

The Institute of Zoology (IoZ) specialises in scientific issues relevant to the conservation of animal species and their habitats. IoZ's core funding comes from the Higher Education Funding Council for England (HEFC), the same body that supports universities. Early in the year, a review of IoZ's research by HEFC concluded that IoZ is a unique, distinctive, world-class research facility. Additional funding comes from UK research councils and research charities.

Our research is focused on five areas: biodiversity and macroecology; behavioural and population ecology; genetic variation, fitness and adaptability; reproductive biology; and wildlife epidemiology. This work not only advances our understanding of the natural world, but also helps to achieve applied conservation objectives and influence conservation policy.

A new collaborative study between IoZ scientists and a number of other wildlife research institutions has revealed that the loss of animals and plants is bad for our health. The results, published in

Left King penguins at Hound Bay

IoZ's research not only advances our understanding of the natural world, but also helps to achieve applied conservation objectives

Nature, reveal that the species most likely to disappear as biodiversity is lost are often those that buffer infectious disease transmission; species that remain tend to be the ones that magnify the transmission of infectious diseases. The work provides evidence of yet another service that the natural world carries out for humanity for free.

Research carried out at IoZ and Imperial College has found that badger culling is unlikely to be a cost-effective way of helping control bovine TB in Britain. One problem is that the

remaining badgers tend to travel further, increasing their contact with cattle both inside and outside the culling area. This undermines the benefits of culling to the extent that it is not financially viable.

In June, IoZ scientists transformed Speakers' Corner in Hyde Park, London, into an arena for public learning and debate. Scientists at Speakers' Corner hosted 16 UK scientists, who stood on soapboxes to speak about their science. The event, reported in the journal *Science*, was well received by passers-by and the media.

Sam Turvey received a University Research Fellowship award from the Royal Society to study quaternary mammal extinctions; Elli

Leadbeater was awarded an Early Career Fellowship from the Leverhulme Trust to carry out research on social honey wasps; Andrew Cunningham received a Royal Society Wolfson Research Merit Award; and Nathalie Pettorelli won a L'Oréal Women in Science Fellowship.





Indicators and Assessments Unit

The Indicators and Assessments Unit is a ZSL initiative that fields around 20 staff, students and interns. The five main projects of the unit are designed to produce scientifically robust biodiversity indicators for global targets, such as the Convention on Biological Diversity and the UN Millennium Development goals. Projects are designed to produce useful biodiversity information for national conservation planning and to focus conservation attention. Full details can be found in the scientific report, *Science for Conservation 2009-2010*, at zsl.org/science.

Animal Conservation offers rapid publication of research into the conservation of animal species and their habitats

Publications

Journal of Zoology

The *Journal of Zoology*, our pre-eminent journal dedicated to academic zoology, continues to attract an increasing number of high-quality research papers and reviews.

In 2010, the *Journal of Zoology* introduced the first *Thomas Huxley Review*, which aims to celebrate Huxley's outstanding contributions to zoological research. The first Review, *How stupid not to have thought of that: post-copulatory sexual selection*, by Tim Birkhead, was published in June.

Other developments for the Journal included the digitised back volumes of *Proceedings and Transactions of the Zoological of London* being made available online. The *Journal of Zoology* podcasts can be heard at www.wiley.com/bw/podcast/jzo.asp.

Animal Conservation

Animal Conservation offers rapid publication of novel research into the conservation of animal species and their habitats. A special issue,



Top (l to r) Survey work in Guyana; a camera trap; red-eyed tree frog **Above** ZSL journals



In the detail

'Whale snot' helicopter scoops Ig Nobel Prize

A novel research technique that uses a remote-controlled helicopter to carry out health checks on whales has been awarded one of the 2010 Ig Nobel Prizes.

IoZ scientist Karina Acevedo-Whitehouse and Diane Gendron, from the Mexican National Polytechnic Institution, used a

remote-controlled helicopter to collect samples of whale blow to monitor the health of individual whales.

The technique involves stationing the helicopter above a surfacing whale and catching the blow in Petri dishes attached to the underside of the helicopter. The Ig Nobel Prizes honour achievements that first make people laugh, and then make them think.



'Excerpts from the Sixth World Conference of Herpetology', was published in November. The special Feature Paper and commentaries, published in each issue, continue to be well received.

International Zoo Yearbook

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. Published in 2010, Volume 44 focuses on *ex-situ* husbandry and management of bears and canids. By bringing together the best of current practice and welfare, the volume is intended to encourage dynamic *ex-situ* programmes that complement effective *in-situ* conservation.

Meetings

Science and Conservation Events

ZSL's popular Science and Conservation Events are held on the second Tuesday of each month through the academic year. Involving some of the most renowned experts worldwide, the meetings present developments in

the field of conservation science, discuss research avenues and explore the practical implications of new knowledge.

The 2010 programme included *The human animal: the biological basis of mate choice*; *Re-wilding Europe and the return of predators*; and *Success and failure in conserving species of extreme rarity: lessons to be learned?* Scientific events are free and open to anyone who would like to attend. Further information can be found at zsl.org/science/scientific-meetings.

Symposia

International symposia bring together experts to discuss important topics in conservation science. Three were held during 2010. *Foundations of Biodiversity: saving the world's non-vertebrates* focused on the importance of non-vertebrate

biodiversity from ecological, social and economic perspectives.

At the symposium, *Linking biodiversity conservation and poverty reduction: what, why and how?*, the audience heard that, despite apparent consensus at the international policy level, there is considerable divergence of opinion at the practical level as to the nature and scale of biodiversity-poverty links and the role and responsibilities of different interest groups in addressing them.

Disease invasion: impacts on biodiversity and human health described how wildlife pathogens threaten biodiversity and human health, where future threats will arise and how these can be mitigated. Key speakers included Professor Roy Anderson FRS and Professor Lord May of Oxford. The event was held in partnership with the Royal Society as part of its 350th anniversary celebrations.





Communicating science

An important part of loZ's work is to promote communication between scientific researchers, professional zoologists and the public

Stamford Raffles Lecture

The 2010 Stamford Raffles Lecture was given by Professor Linda Partridge, Director of the UCL Institute of Healthy Ageing. *The new biology of ageing* described how research has been rejuvenated by the discovery of mutations in single genes that extend the lifespan of animals.

ZSL Scientific Awards

ZSL recognises outstanding achievements in conservation and zoological research through its annual presentation of awards and prizes to all levels of achievement, from the Prince Philip Award and Marsh Prize for the best A-Level or Higher student project (awarded in 2010 to Grace O'Donovan), and the Charles Darwin Award and Marsh Prize for best undergraduate thesis (Haihan Tan), to the Thomas Henry Huxley Award and Marsh Prize for an exceptional PhD thesis (Tom Fayle).

Significant and original contributions by professional zoologists are

acknowledged with the Scientific Medal (Oliver Pybus and Greg Hurst) and Frink Medal (Charles Godfray FRS). The Marsh

Awards for Conservation Biology (Ana Rodrigues) and Marine and Freshwater Conservation (Peter Mumby) recognise exceptional contributions of fundamental science and its application to conservation of animal species and habitats. The Thomson Reuters/Zoological Record Award (Nick Arnold and Tony de Saulles) and ZSL's Silver Medal (David Macdonald) are awarded for distinguished contributions to the understanding of zoology and wildlife conservation. The Stamford Raffles Medal, awarded for



contributions by an amateur zoologist, was presented to Robert Swann. The ZSL Award for Outstanding Contributions to the Zoo Community was presented to EAZA Executive Committee Chair Leobert de Boer. We would like to thank the Marsh Christian Trust and Thomson Reuters for their continued support of ZSL's awards.

More than 2,560 new books were added to the online catalogue, which was used 30,700 times

Top Scientific Awards (l to r): Greg Hurst, David Macdonald, Oliver Pybus, Charles Godfray, Nigel Robinson (Thomson Reuters), Nick Arnold, Sir Patrick Bateson, Ana Rodrigues, Tom Fayle, John Hutchings (The King's School), Grace O'Donovan, Brian Marsh (Marsh Christian Trust) and Leobert de Boer **Above** Hippo Obaysch



Library

During 2010, more than 2,560 new book titles were added to the online catalogue, 2,800 journal issues accessioned and 2,300 loans were made to Fellows and ZSL staff. The ZSL Library online catalogue was used 30,700 times.

With the launch of the new online catalogue at the end of 2009, we began a retrospective book cataloguing project for our online catalogue at www.library.zsl.org. This began in May 2010 and, by the end of the year, more than 1,870 records had been added. This project is being funded thanks to a bequest from Connie Nutkins, a former member of staff who left a generous gift in her will to the ZSL Library.

Wireless internet access went live in the Library during May, allowing Library visitors to use their laptops to access the internet while in the Reading Room. Library staff have been developing the catalogue to include links to additional resources, such as useful websites, open-access electronic journals, a list of studbooks in the ZSL Library, RSS feeds, recently received journals and new books.

Interest in ZSL's archives has continued to increase with a variety of researchers visiting the Library. Visiting researchers looked at material on subjects ranging from polar bears to early Zoo architecture.

Items from ZSL's archives were featured in *Zoo Stories – Wild Animals for Europe*, an exhibition at the Westphalian Horse Museum in the Allwetterzoo Münster, which was attended by more than 67,000 people. An adapted and reduced version of *Zoo Stories* will tour several German cities until September 2011.

Meet the Archives events were held for Fellows and a wide range of external



Above Red panda **Top** loZ's Andrew Cunningham in the field **Bottom** A honey wasp nest

In the detail

Cetacean strandings



In 2010, researchers celebrated 20 years of the Defra-funded UK Cetacean Stranding Investigation Programme (CSIP), which is coordinated by ZSL.

Since the CSIP's inception, its team of scientists has responded to more than 9,000 public reports and has produced one of the biggest open-access scientific datasets. Key discoveries made by the CSIP includes some of the first evidence of dolphin deaths in fishing nets, links between chemical pollutants and deaths due to infectious diseases and the discovery of 'decompression sickness' in deep-diving whales.

The team's research has allowed it to build up a picture of how human activities impact on marine life, while improving our understanding of why whales, dolphins and porpoises strand on UK coasts. This has led to changes in policy and best practice around fishing activities, chemical pollutants and even military operations.

In addition to cetaceans, the species studied by the CSIP have now been expanded to incorporate stranded marine turtles and basking sharks.

Visiting researchers looked at material on subjects ranging from polar bears to early Zoo architecture

visitors. During these tours, which generate much enthusiasm and interest, visitors can see items from the archives and some of the historic books.

The ZSL website continued to feature the series *Artefact of the month*, which, in 2010, included a celebration of the bicentenary of Philip Henry Gosse, with beautiful illustrations from two of his books. The series also featured a model of Obaysch the hippopotamus, made from Nile mud to celebrate his arrival in 1850.

We are extremely grateful for the help of our dedicated team of volunteers and the many Fellows and Friends of ZSL who continue to support the Library with their time, by donating books, archives, zoo ephemera and funds for the conservation of our collection items.



Discovery and Learning

A busy schedule of events, teaching sessions and new interpretation projects helped Discovery and Learning experience another successful year.



Zoo developments

The education officers, once again, broke all previous records for schools attendance, with 118,510 pupils visiting ZSL London Zoo alone. Of this number, 98,925 pupils visited on the subsidised entry scheme financed by the Greater London Authority (GLA). The remaining 19,585 pupils were from private schools, colleges, universities and schools that are outside London. In addition to this, 20,751 GLA pupils were taught about conservation and climate change within their own schools as part of the ZSL Outreach scheme.

ZSL Whipsnade Zoo also saw an increase in visits, with a total of 31,604 pupils visiting the Zoo with their schools, representing an increase of 5% on the 2009 total. In addition, nearly 900 pupils and members of community groups received outreach visits. The team also set to work on a diverse array of educational events, including Rainbows Go Wild, Special Children's Day and National Insect Week.

Left Zoo visits are popular with pupils

The study confirmed that zoos have a significant impact on improving children's understanding of animals and their habitats

The value of ZSL's Discovery and Learning work was recognised following an extensive three-year external study at ZSL London Zoo, which confirmed that zoos have a significant impact on improving children's understanding of animals and their habitats. The study gained international recognition at EAZA and International Zoo Educators' conferences, and achieved publication of the first peer-reviewed paper of its kind.

New methods of teaching about conservation were explored in 2010, with investigations into live link-ups and online learning. A lesson for pupils from Swiss Cottage, London, was conducted live from the Amazon and beamed into our rainforest exhibit by the explorer

Ed Stafford, who talked to the school's special needs pupils. This was made possible through collaboration with the company Digital Explorer.

Adult learning continued with support for the professional development of zookeepers. Other activities included the ongoing support to trainee teachers, with an entire class of Postgraduate Certificate in Education students receiving a day's training on how to bring a school group on a zoo visit.

The opening of new exhibits at London and Whipsnade is always a major development, but additional interpretative innovations serve to educate and inspire visitors. ZSL's Interpretation team developed a range of talks, presentations and activities, which are proving to be an effective way of communicating ZSL messages to visitors.

Unfortunately, at the very end of the year, the loss of GLA funding was announced. However, the school education provision at ZSL London Zoo will continue (though no longer free to state schools), and a range of new learning opportunities will be developed over the next year.



Learning
 In 2010, ZSL Whipsnade Zoo arranged 59 two-week placements, while seven college students embarked on six-week placements. At ZSL London Zoo, 35 pupils completed two-week placements

Zoo gets top marks

ZSL London Zoo was the subject of an external pilot study carried out by Dr Brady Wagoner of Aalborg University and Dr Eric Jensen of the University of Warwick to research the effect that zoos have on children and their education. The findings, published in *Psychology and Society*, revealed that children who visited the Zoo developed a new and deeper understanding of wildlife.

The report, *Science Learning at the Zoo: Evaluating Children's Developing Understanding of Animals and their Habitats*, focused on children taking part in ZSL London Zoo's formal learning programme, and was targeted at Key Stage Two pupils. It's the first time such a study has ever been undertaken at a zoo. Children (aged 9-11) were asked to draw pictures of animals in their habitats at the beginning of

their Zoo visit and class session, and then complete the same task directly afterwards. The results showed clear developments in the pupils' understanding following a visit to the Zoo's exhibits and participation in a Zoo lesson.

Interestingly, the report also flagged up the influence of cultural resources, such as mass media, on children's knowledge of wildlife, with one key example being sloths. Originally being drawn in icy habitats, which children noted they'd seen in the Hollywood film *Ice Age*, the pupils then depicted the sloths hanging upside down in a more accurate rainforest setting after attending the Zoo's education session in *Clore Rainforest Lookout* exhibit.

Ongoing studies into the impact of Zoo visits on children's understanding of wildlife are being carried out, to further identify the key effects of education within the unique learning environment of a Zoo. The findings will be published in late 2011.

Interpretation for new exhibits

During 2010, ZSL London Zoo's team of interpretation experts focused on the refurbishment of *Clore Rainforest Lookout*.

New interpretation in *Clore Rainforest Lookout* creatively tells the tale of rainforests, from their history through to the threats they face and the actions ZSL is taking to help protect them.

Afterwards, visitors can descend into *Night Life*, where the anticipation of the twilight world is built up with a mesmerising light installation.

At Whipsnade, the new exhibit, *Wild Wild Whipsnade*, incorporated three species already in the collection (brown bear, European bison and wolves) with four brand-new additions (moose, wolverine, wild boar and European lynx), all of which would have once roamed around the area. Interpretation brought out the mystery and folklore surrounding these species and offered new interactive opportunities.

The Zoo's Explainers also provided talks to *Wild Wild Whipsnade* visitors, which were well received. Their talks also



Above (l to r) Rainforest Life interpretation; education session; Special Children's Day at London Zoo; **Right** Interpretation for the new *Wild Wild Whipsnade* exhibit



featured in staff and member previews and a promotion for Heart Radio.

Big Draw

The Big Hairy Bug Draw competition ran for five days at ZSL London Zoo over Halloween half-term, and generated more than 1,700 'bug' drawings by children.

Working closely with Cool it Schools founder Jane Langley and her volunteers, ZSL's education officers oversaw the event, which involved children setting up camp in the Zoo's *B.U.G.S!* exhibit, to draw their favourite invertebrates. The five days culminated in zookeepers from the *B.U.G.S!* exhibit judging the best creepy-crawly creations.

Live interpretation

The Explainer teams took live interpretation to giddy new heights under the enthusiastic guidance of two new Lead Explainers. The London Events Board and Dayplanner were bursting with activities. Of particular note was the Big Cat talk, giving visitors

At this year's Special Children's Day, touch tours were organised for children with sight impairments

a chance to see our Asian lions being fed, as well as finding out about their astonishing athletic leaps and the damage they can cause to a boomer ball.

Halloween provided opportunities at both sites. At ZSL Whipsnade Zoo, pumpkin carving proved extremely popular with the public, while ZSL London Zoo held a ghost tour around the Aquarium and Reptile House, before delivering intrepid explorers to the Halloween hub in *Animal Adventure*.

Christmas came to Whipsnade courtesy of the *Jumbo Express*, with Explainers telling the visitors about animals' adaptations to the cold and what would be their ideal Christmas present. Christmas Journeys at London was a truly collaborative event, building on the past success of the Schools' Living Nativity and involving Explainers, Volunteers and Membership.

Both sites were hampered by the wintry weather, but the visitors who made it in were well rewarded; and Christmas Journeys was even featured as Critic's Choice in *Time Out* magazine.

Junior Citizen event

The annual Junior Citizen event, run with Westminster Council, was hosted at ZSL London Zoo by the education officers for the 11th year. The event is for primary school pupils who are about to make the transition to secondary school, and is designed to teach them how to become responsible citizens through taking part in 'real life' scenarios around the Zoo.

More than 1,000 pupils took part from 37 Westminster schools, with training scenarios provided by London Fire Brigade, Transport for London and ZSL Education Officers, who ran an interactive scenario about recycling. The

Deputy Mayor of Westminster presented a donation to ZSL during the VIP day, which was attended by ZSL Director General Ralph Armond and the Deputy Commissioner of the Metropolitan Police Service.

Children's Day

In June, the annual Special Children's Day took place at ZSL London Zoo. More than 5,000 visitors enjoyed the events and tailored experiences for children with disabilities.

Staff at London have organised Special Children's Day since 1994, and the event continues to go from strength to strength. Over the past three years, attendance figures have doubled, helping to generate more than £32,000 in ticket sales alone for the 2010 event. At this year's event, visitors were welcomed by a Dixie swing jazz band, along with volunteers dressed as zookeepers and animals. Animal talks were communicated in sign language, while special touch tours were organised for children with sight impairments.

Volunteers

New recruits

Over the course of 2010, ZSL's volunteer programme welcomed 133 new recruits.

At Whipsnade, a new touch table was created to complement the *Elephantastic* display, incorporating tusks, teeth and the ubiquitous elephant faeces. The volunteers also helped out at various events including Rainbows Go Wild, Zoo Nights and making Christmas crackers as enrichment for the chimps.

At London, 83 Learning volunteers were recruited.

They provided valuable assistance at the Zoo Lates and for the *Christmas Journey*. They also helped in *Gorilla Kingdom*, following the gorilla birth. Volunteers gave their time on Special Children's Day, and selected volunteers assisted on 'Wish Visits', where terminally ill children come to the Zoo with their families for a special day out.



Finances

ZSL recorded a 2010 consolidated surplus on operations of £0.9m (2009 – £0.4m) and a total surplus, before loss on Pension Fund, of £1.2m (2009 – £0.9m) after a £0.3m (2009 – £0.4m) gain on investments. The actuarial loss on the Pension Fund was £0.2m (2009 – £0.2m). This leaves a Net Movement in Funds as a surplus of £1m (2009 – £0.7m).

Incoming resources increased by £0.3m in the year, including slightly higher levels of animal collections, trading, conservation programmes and interest and investment income. However, voluntary income was £0.2m lower than in 2009.

ZSL remains dependent on its two Zoos for the bulk of its income. In 2010, ZSL London Zoo visitor numbers were 1,011,257, a decrease of 47,913 (4.5%) on 2009. ZSL Whipsnade Zoo visitor numbers were 428,684, a decrease of 46,352 (9.8%) on 2009. The total number of visitors to the two Zoos in 2010 was 1,439,941 (2009 – 1,534,206).

Incoming resources included Gift Aid recoveries on day entry to our Zoos, which amounted to £1.5m (2009 – £2m) and in total on all sources of income £1.9m (2009 – £2.6m).

The Institute of Zoology, within Science and Research incoming resources, and Conservation Programmes maintained their revenues with new grants received in 2010, but these primarily relate to specific projects and, whilst supporting the mission of the Society, they do not contribute to the unrestricted funds of the Society to fund future development.

The £0.2m reduction in ZSL costs compared to 2009 included lower levels of costs incurred on the animal collections, whilst there were higher levels in respect of Science and Research and Conservation Programmes activities.

The total capital spend of £2m (2009 – £3.8m) included completion of the *Rainforest Life* and *Night Life* experiences, in the *Clare Rainforest Lookout*, and the improvements to the *Big Cat Terrace* exhibit at ZSL London Zoo, and completion of *Wild Wild Whipsnade* at ZSL Whipsnade Zoo.

Capital expenditure commenced late in the year on Project Barclay, which is the collective name for our 2011 project combining *Penguin Beach*, our main animal exhibit for 2011 located at ZSL London Zoo, and extending the main

gift shop together with a new exit into Regent's Park for visitors to the Zoo.

We continue to invest in our infrastructure to improve visitor experience, the Society's compliance with Disability Discrimination legislation and its sustainability profile.

The ZSL pension scheme remains fully funded and had a small (£0.3m) surplus on a Financial Reporting Standard 17 basis at the end of 2010 (2009 – £0m). The funding levels continue to be regularly monitored by ZSL and the Pension Fund Trustees.

The next Tri-annual valuation of the Pension Fund will be based on the position at the end of June 2011.

Our main trading subsidiaries, Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited, produced improved results over 2009, despite the continuing difficult economic conditions.

Turnover at £9.9m was much as in 2009, but cost reductions helped total Net Profits rise to £1.9m (2009 – £1.7m).

Generally, retail was a little disappointing on both sites, but this was offset by much-improved catering results in London, due in part to a much better conference and banqueting performance.

Group Summarised Financial Statements

Summary Group statement of financial activities for the year ended 31 December 2010

	Year to 31.12.10 £000	Year to 31.12.09 £000
Incoming resources		
Incoming resources from generated funds:		
Voluntary income	1,993	2,152
Activities for generating funds:		
Subsidiaries' trading turnover	9,908	9,896
Other	2	10
Interest and investment income	294	217
Incoming resources from charitable activities:		
Animal collections	22,306	22,033
Science and research	4,839	4,857
Conservation programmes	1,746	1,632
Other incoming resources – Biota	–	1
Total incoming resources	41,088	40,798
Resources expended		
Cost of generating funds:		
Costs of generating voluntary income	588	579
Fundraising trading		
Subsidiaries' cost of goods sold and other costs	8,009	8,162
Investment management costs	14	22
Charitable activities:		
Animal collections	22,402	23,139
Science and research	5,715	5,418
Conservation programmes	3,275	2,881
Governance costs	158	169
Other resources expended – Biota	2	–
Total resources expended	40,163	40,370
Net incoming resources before other recognised gains/(losses)	925	428
Other recognised gains/(losses)		
Gain on investments	312	440
Actuarial loss on pension scheme	(200)	(200)
Net movement in funds	1,037	668
Reconciliation of funds		
Total funds balance brought forward	46,462	45,794
Total funds balance carried forward	47,499	46,462

The above results are all in respect of continuing operations.

No statement of total recognised gains and losses has been prepared as all such gains and losses have been included above.

Group Summarised Financial Statements (continued)

Summary Group Balance Sheet at 31 December 2010

	31.12.10 £000	31.12.09 £000
Fixed assets		
Tangible assets	35,066	36,199
Investments	3,879	3,581
	38,945	39,780
Current assets		
Stocks	647	498
Debtors	3,719	2,347
Cash at bank and in hand	9,397	9,201
	13,763	12,046
Creditors: amounts falling due within one year	(5,509)	(5,364)
Net current assets	8,254	6,682
Net assets excluding pension scheme asset	47,199	46,462
Defined benefit pension scheme asset	300	–
Net assets	47,499	46,462
Funds		
Unrestricted – General	5,459	3,699
– Designated	35,084	36,219
Unrestricted funds excluding pension asset	40,543	39,918
Unrestricted – Pension reserve	300	–
Total unrestricted funds	40,843	39,918
Restricted – Endowments	661	622
– Other	5,995	5,922
Total funds	47,499	46,462

Trustees' statement accompanying the group summarised financial statements

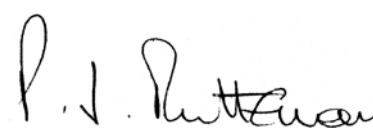
The group summarised financial statements are not the statutory accounts but a summary of information relating to the group statement of financial activities and the group balance sheet.

The full Trustees' Report and financial statements, from which the summarised financial statements are derived, have been externally examined by Baker Tilly UK Audit LLP and its audit report on them is unqualified.

The full Trustees' Report and financial statements and Baker Tilly UK Audit LLP's audit report on them were approved on 19 April 2011 and 26 April 2011 respectively and will be submitted to the Charity Commission.

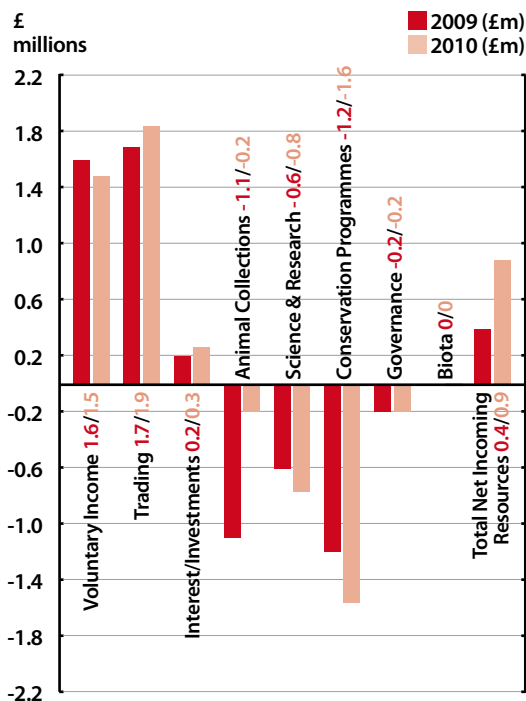
Copies can be obtained from the Finance Director at The Zoological Society of London, Regent's Park, London NW1 4RY.

Signed on behalf of the Trustees on
26 April 2011

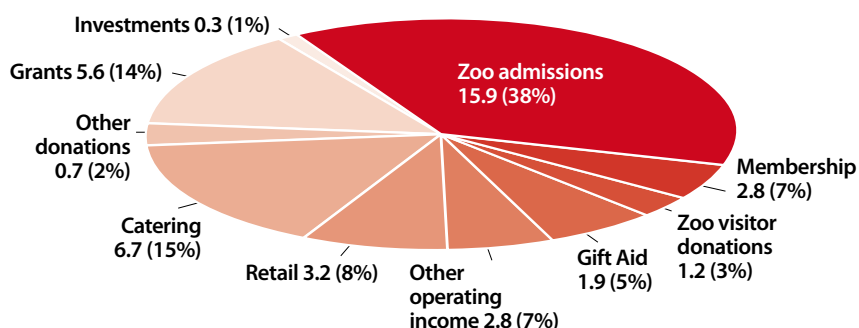


Paul Rutteman CBE BSc (Econ) FCA
Treasurer

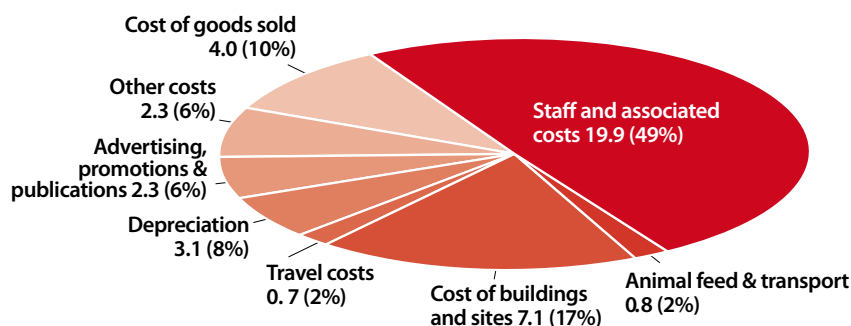
Net income/expenditure by Activity



ZSL Income 2010 £41.1m



ZSL Costs 2010 £40.2m



Independent Auditor's Statement to the Trustees of the Zoological Society of London (an Unincorporated Charity)

We have examined the summarised financial statements of the Zoological Society of London set out on pages 32-35.

Respective responsibilities of Trustees and auditor

The Trustees are responsible for preparing the summarised financial statements in accordance with applicable United Kingdom law and the recommendations of the charities Statement of Recommended Practice (SORP).

Our responsibility is to report to you our opinion on the consistency of the summarised financial statements within the summarised Annual Report with the full annual financial statements and Trustees' Annual Report.

We also read the other information contained in the summarised Annual Report and consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the summarised financial statements. The other information comprises only the financial review ('Finances').

We conducted our work in accordance with Bulletin 2008/3 issued by the Auditing Practices Board.

Opinion

In our opinion, the summarised financial statements are consistent with the full financial statements and the Trustees' Annual Report of the Zoological Society of London for

the year ended 31 December 2010. We have not considered the effects of any events between the date on which we signed our report on the full annual financial statements (26 April 2011) and the date of this statement.

Baker Tilly UK Audit LLP

Baker Tilly UK Audit LLP
Statutory Auditor
1st Floor, 46 Clarendon Road
Watford, Herts WD17 1JJ
26 April 2011

Thank you for your support

As a charity, we are dependent on the generosity of our supporters. Here are a few examples of the many ways to get involved with ZSL.

Supporters at the heart of ZSL

ZSL Patrons and donors Bob and Sarah Rihal were drawn to ZSL London Zoo through Sarah's love of giraffes. Their generosity funded the giraffe feeding platform, and then the Secret Garden in *Animal Adventure*. They also encourage other friends to share their infectious enthusiasm for the Zoo – to ensure that their children, and their children's children, can still visit and be inspired by the animals around them.

Become a ZSL Patron – enjoy close encounters with our animals, peek behind the scenes of zoo life, and hear from the conservationists and scientists working around the world to save amazing species. For more information, call 020 7449 6406 or email patrons@zsl.org.

Giraffe Restaurants – raising money the delicious way

In 2010, ZSL was delighted to have announced a fantastic new partnership with Giraffe Restaurants, which raised almost £30,000 in its first six months. Our partnership with this growing family



chain is possible thanks to the very generous pledge of the company owners, Juliette and Russel Joffe, to donate 50p from the sale of every Falafel 'Deluxe' Burger towards ZSL.

We hope to continue this valuable partnership with Giraffe for many years to come and, in recognition of their amazing support, we will be working with Giraffe on a wide range of initiatives, including ticket promotions, PR, web pages and a Family Fun Day. You can help, too, by ordering the Falafel 'Deluxe' Burger when you visit Giraffe.



Leave a gift in your will

ZSL is grateful to have received a generous legacy gift of £28,000 from Mr Norman Charles Frank Frost, who bequeathed a share of the residue of his estate to ZSL to use wherever the need is greatest.

Legacy gifts are important to ZSL, and can be the most valuable gift that a supporter makes. They help us achieve our mission, not only through our living collections at ZSL London Zoo and ZSL Whipsnade Zoo, but also through conservation programmes, scientific research and our library.



Long-term support enables the development of effective, sustainable conservation projects

The Erasmus Darwin Barlow Expedition Awards

For students of conservation, it can be difficult to bridge the gap between theoretical study and practical field experience. The Erasmus Darwin Barlow Expedition Awards nurture the zoologists and conservationists of the future by funding short field surveys.

Founded in 2006 by ZSL supporters Camilla Whitworth Jones and Phyllida Peake to commemorate their late father Erasmus, who was both a ZSL Fellow and Secretary, the Awards also celebrate their ancestor Charles Darwin's famous expedition on the *Beagle*, which shaped so much of his later thinking.

To date, 22 students have undertaken expeditions around the world, ranging from Gabon to the Philippines, investigating subjects as diverse as the impact of invasive fire ants, the status of the silky sifaka (an extremely rare lemur) and threatened fishes endemic to Lake Tawar in Indonesia. None of these expeditions would have been possible without the generosity of Camilla, Phyllida, their friends and family, and ZSL supporters, who make a regular donation each year to ensure the continued future of the Awards.

The Awards culminate in an annual spring reception, during which students report back from their expeditions, presenting displays of their research, field studies and findings. In 2010, supporters learned about the first biological exploration of the interior of North Negros National Park in the Philippines, a survey of species found in Lake Chilingali in Malawi and the threats facing them, and the first detailed survey of the Mahamavo forest and wetlands in western Madagascar.



Top ZSL teams work with timber companies in Cameroon **Above** An expedition to Madagascar **Far left** Patron Sarah Rihal and her daughters during a visit to *Animal Adventure* **Left** Giraffe Family Fun Day at ZSL London Zoo

Participate in ZSL events

2010 saw our most successful fundraising year for challenge events yet, with the ZSL Zoo Stampede raising over £20,000 and more than 800 people registering in record time for the 10km and 2km races. It was also the first year of our sponsorship partnership with Santander, which proved to be a great success for the event. Runners enjoyed a sprint around ZSL Whipsnade Zoo while getting up close and personal with some of our exotic residents. Thank you to Santander, the Dunstable Road Runners, and to the many organisations that gave gifts in kind to the finishers.

Invest in conservation

In 2010, ZSL welcomed a new award from the Arcus Foundation. Arcus works closely with organisations globally to conserve and protect great apes. Its grant will help address wildlife management in timber production forests of Central Africa, where three of the four remaining great apes can still be found. ZSL works with timber companies, communities

and forestry authorities in Cameroon to promote sustainable logging practices and practical measures to conserve the region's wildlife. ZSL is also grateful to the Rufford Foundation and the US Fish and Wildlife Service for their support of the Wildlife Wood Project.



Big Lottery Fund

Long-term support enables the development of effective, sustainable conservation projects. In 2010, the Big Lottery Fund has continued to support ZSL's Community-Based Mangrove Rehabilitation Project in the Philippines. With a strong team in place and impressive levels of community involvement, this project is on target and making real progress, engaging government and local communities in the rehabilitation of mangrove forests, resulting in increased food resources, livelihood income and coastal protection.

ZSL would like to thank all our supporters, Members, Friends, Patrons, Fellows and volunteers for their contribution and commitment in 2010. We simply could not carry out our mission without your ongoing dedication and support. Special thanks go to those mentioned on these pages.

Legacies from estates of:

Mrs Doris Leslie Bowen
 Mr Hugh David Clark
 Mr Stanley Gordon Cohen
 Mr Norman Charles Frank Frost
 Mr Leonard Thomas Keith
 Mrs Maisie Esmee Knott
 Mrs Joan Alexandra Midgley
 Mrs Dorothy Grace Mary Wade

Statutory and other grant-making bodies

Agreement for the Conservation of Small Cetaceans in the Baltic and North Seas (ASCOBANS) Conservation Fund
 Big Lottery Fund
 Biodiversity and Agricultural Commodities Programme
 Biotechnology and Biological Sciences Research Council (BBSRC)
 Conservation Leadership Programme
 Darwin Initiative
 Department for Environment, Food and Rural Affairs (Defra)
 Economic and Social Research Council (ESRC)
 Environment Agency
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 Environmental Planning Dept, Falkland Isles government
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Amphibian Ark
 Arizona State University
 Attica Zoo
 Birdlife International
 British Ecological Society
 Dunstable Road Runners
 European Union of Aquarium Curators
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 SeaWorld & Busch Gardens Conservation Fund
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 Taronga Foundation
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 The Hobson Charity
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 The Mohamed bin Zayed Species Conservation Fund
 The Rose Foundation
 The Rufford Foundation
 The Worshipful Company of Grocers
 UK Trust for Nature Conservation in Nepal
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Bob and Sarah Rihal
Camilla Whitworth Jones

Further thanks

ZSL would like to thank all of our supporters who could not be named individually and to those who specifically wish to remain anonymous.

*stepped down during 2010

+joined the Board during 2010

**via American Friends of London Zoo (AFOLZ)

Patron

Her Majesty The Queen

Council members 2010

The following were Council members at 19 April 2011 or served during the year to 31 December 2010:

President Professor Sir Patrick Bateson PhD, ScD, FRS

Secretary Professor Paul H Harvey BA, MA, DPhil, DSc, FRS
(to 25 January 2011)

Treasurer Paul Rutteman CBE, BSc (Econ), FCA

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(to 14 September 2010)

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MIBiol, FLS

Elizabeth Passey MA, FRGS
(from 23 February 2010)

Robert Wingate MSc +

Mark Ridgway BSc, PGCE, FLS
(from 2 November 2010)

+ To 15 June 2010

* From 15 June 2010

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Communications Director

Rich Storton MA

Conservation

Programmes Director

Professor Jonathan Baillie PhD

Zoological Director

David Field MBA, FBS, FLS

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Design and editorial coordination: Think

Managing editor: Amy Harris

Editor: Christopher Stocks **Designer:** Ian Hart

Sub-editor: Marion Thompson

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Cover image: Northern cheetah cub by Daniel Sprawson

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ZSL London Zoo 020 7722 3333

ZSL Whipsnade Zoo 01582 872171



London Zoo, Regent's Park,
London NW1 4RY

www.zsl.org

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The Zoological
Society of London
Registered Charity in
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no 208728

Regent's Park
London NW1 4RY
and at
ZSL Whipsnade Zoo
Dunstable
Bedfordshire LU6 2LF

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