

ZSL

LIVING CONSERVATION

2007-2008

A year of achievements

With another dynamic year behind us, Sir Patrick Bateson describes how ZSL has continued its growth – with a range of new exhibits at the Zoos and significant gains across conservation and science.

As President of ZSL, it again gives me great pleasure to bring you our annual review. The year has been remarkable, with significant conservation successes in the field, great advancements in science through the Institute of Zoology, and many exciting new additions and developments at both ZSL London Zoo and ZSL Whipsnade Zoo.

I would like to pay tribute to all the hard work of our staff and supporters. The commitment and enthusiasm they consistently show helps the Society to achieve more and more, year upon year, as you will discover in the pages that follow.

As ever, our work is global, since we strive to achieve and promote the worldwide conservation of animals and their habitats. Our revolutionary new EDGE of Existence programme, first unveiled at the beginning of 2007, is perhaps one of the best examples of our international reach. The EDGE programme focuses on animals that are not just endangered, but also genetically distinct. If we lose them, there is nothing left in the world anything like them. From Mongolia to Haiti, Liberia to Thailand, we have been generating, funding and supporting conservation plans for a wide range of species and, importantly, training and empowering local people to continue the work for the long term. With EDGE fellows now set up in many countries, the programme is a true example of the dictum ‘Think globally, act locally’.

Local focus in Britain, of course, is often centred on the two sites themselves – ZSL London Zoo and ZSL Whipsnade Zoo – and both have enjoyed excellent years. *Gorilla Kingdom* and the *Clare Rainforest Lookout* were highly anticipated additions to London, while *In with the Lemurs* has proved a magnetic new attraction at the Bedfordshire site. These developments, as well as our research, science and conservation achievements, enabled ZSL to win many awards and commendations from the British and Irish Association of Zoos and Aquariums (BIAZA) and the European Association of Zoos and Aquaria (EAZA), as you will be able to read on pages 15, 16 and 20.

We have enjoyed great breeding success, too. Young red titi monkeys, Gila monsters, greater one-horned rhinos, Egyptian tortoises and a baby elephant were all welcome additions to the populations at both Zoos (which have a combined total of over 800 species, as was revealed at the annual animal stocktaking). With the new *Blackburn Pavilion* and *Cheetah Rock* opening in 2008, as well as a new home for our one-horned rhinos, our sites are truly growing from strength to strength.

No plans for the future would be acceptable, however, without a commitment to sustainability and, with a new sustainability manager in place, ZSL has made a number of steps in this respect. We are currently working towards ISO 14001 certification of our Environmental Management System across our two Zoo sites, we have signed up to the Green Tourism for London Award scheme (and indeed ZSL London Zoo will be one of the first organisations to be graded through this scheme), and we have made substantial reductions in our landfill waste and water consumption at each site. In addition, among those awards I mentioned earlier were two sustainability awards for the design and construction of *Gorilla Kingdom*. We will be running more surveys at both sites during 2008 to look at further reduction of our consumption.

None of this exciting and fulfilling progress, however, would be possible without the ongoing support of members and volunteers, for which we are truly grateful. Their commitment to the Society’s role in education and conservation is, as ever, of immense benefit.

I hope that you will enjoy this year’s review and share in our whole team’s sense of pride about what has been achieved, both here and abroad.



Sir Patrick Bateson FRS

President, Zoological Society of London

Highlights of our Year

2007 was an exciting and eventful year for ZSL. Here are some of our significant achievements and activities which happened throughout the year. For more information go to www.zsl.org.

January

| Stocktaking at both Zoos confirms a combined tally of over 800 different species

All keepers are involved in this annual event, totting up a list which, in 2007, was boosted by four new lion cubs, recently born giraffes, the opening of *Butterfly Paradise* and more.

| The launch of EDGE introduces a radical new method of measuring conservation needs

ZSL's new EDGE of Existence programme is set up to protect some of the world's most bizarre and unusual animals, many of which are completely ignored by current international conservation efforts. EDGE stands for Evolutionarily Distinct and Globally Endangered.

| ZSL embarks on a programme to save rare ant from extinction

The Heritage Lottery Fund (HLF) awards ZSL £49,900 to head up a project to save the red-barbed ant, which is on the brink of extinction in mainland Britain, due to loss of suitable heathland habitat.

February

| Roxy the penguin gets MySpace page

One of ZSL London Zoo's penguins makes history by riding the wave of technology to find a mate on Valentine's Day. Roxy the rockhopper is the first zoo animal to set up a profile on social networking page MySpace.com to search for the perfect partner.

| Two new, and large, births at ZSL Whipsnade Zoo

An Asian rhino calf born on New Year's Eve 2006 to mother Behan, and an Asian elephant calf which arrived in January to proud mum Kaylee are introduced to the public.

March

| Much-anticipated launch of Gorilla Kingdom

ZSL London Zoo's new gorilla enclosure is given the royal seal of approval when HRH The Duke of Edinburgh officially opens it. *Gorilla Kingdom* is the brand-new £5.3m enclosure that is now home to a group of stunning western lowland gorillas.

| Visitors get up close with the lemurs

BBC radio host Dominic Byrne opens ZSL Whipsnade Zoo's *In with the Lemurs* exhibit, a new walk-through experience which allows the public to follow a path through the primates' enclosure.

April

| ZSL meets Sir Alan Sugar

The fourth episode of the third series of *The Apprentice* is aired. It

took place at ZSL London Zoo, with contestants being challenged to design and manufacture sweets and then sell them at the site.

| Gorillas' house guests top 100,000

A whopping 120,000 people have been to ZSL London Zoo to see *Gorilla Kingdom* since Bobby, Zaire and Effie moved in to their new home at the end of March. That's an average 8,300 people popping in to see the place each day.

| Bactrian camels born at ZSL Whipsnade Zoo

No fewer than four Bactrian camel calves are born and can be seen snuggling up to their mothers at the *Asian Drive-through*. These two-humped species, a domestic breed of the Bactrian camel, were born to four separate mothers.

May

| Opening of the Clore Rainforest Lookout

Visitors come face to face with the world's smallest monkeys at ZSL London Zoo's *Clore Rainforest Lookout*. A £2.1m redevelopment of the former Small Mammals House, it features a transparent biome housing living rainforest trees that are home to groups of monkeys, sloths and birds.

| Coral spawning bodes well for future conservation

A bit of coral sex at ZSL London Zoo's aquarium gets conservationists hot under the collar, as the pink sea fans living in the aquarium begin spawning for the first time, bringing plans to replenish coral stocks in British seas one step closer.

| ZSL research reveals infidelity in cheetahs

ZSL scientists studying cheetahs in the Serengeti, Tanzania, find that almost half of all litters were made up of cubs with different fathers. The benefit to the females is that their offspring are more genetically diverse, important in an unpredictable environment such as the Serengeti.

June

| ZSL reports human-like gorilla behaviour

ZSL field staff in Gabon report that Baka pygmy trackers helping to habituate wild gorillas, trail the apes by spotting gorilla serviettes! It transpires that when gorillas feed on oily detarium fruit, they use giant leaves to wipe their hands.

| Zoo Nights at ZSL Whipsnade Zoo a great success

A steel band, stilt-walkers and fire jugglers delight visitors as they enjoy a twilight evening among the animals big and small at the annual Zoo Night.

July

| Zoo Nights at ZSL London Zoo equally successful

A jam-packed schedule of animal talks and feeds throughout the evening, plus performances by fire jugglers and a steel band, were among the highlights of ZSL London Zoo's Zoo Night, enjoyed by thousands.

| 'Extinct' animal rediscovered by ZSL

ZSL scientists discover that Attenborough's long-beaked echidna, part of ZSL's EDGE programme and thought by many biologists to be extinct, is alive and living in the Cyclops Mountains of Papua New Guinea.

| ZSL Whipsnade Zoo's new sea lion pup wins hearts

Dom, ZSL Whipsnade Zoo's first sea lion pup for five years, is revealed to the public. He's given the name Dom after BBC Radio One host Dominic Byrne.

| Gorilla slaughter revealed by ZSL

ZSL obtains photographic evidence of the slaughter of a family of mountain gorillas, including a pregnant female, in a Congolese national park. Conservation workers later found an injured baby gorilla, which is now being cared for by vets.

August

| Remarkable frogmouth coincidence – because of the weather?

Two tawny frogmouths living in separate enclosures at ZSL London Zoo lay eggs simultaneously after nine unfruitful years. Keepers believe the occurrence may have been triggered by recent downpours.

| Successful corncrake breeding programme for reintroduction into wild

At ZSL Whipsnade Zoo, 126 rare corncrakes are bred for reintroduction into the wild. The project began with six birds released in 2005, and climbed to 80 in 2006, before 2007's staggering record.

| Yangtze River dolphin declared extinct

A paper, lead-authored by Dr Sam Turvey of ZSL, concludes that the Yangtze River dolphin, or baiji, is now extinct following comprehensive surveys of its habitat. This represents the first extinction of a large vertebrate for more than 50 years.

September

| Gay Sunday more popular than ever

ZSL London Zoo provides a day out with a difference, with its third annual Gay Sunday exclusive garden party on the Mappin Terraces, complete with chances to meet and greet some of the animals.

| ZSL London Zoo's millionth visitor arrives

Anticipating its highest visitor numbers since 1991, ZSL London Zoo rolls out the red carpet for its millionth visitor of the year.

| Critically Endangered Utila iguanas born at ZSL

ZSL London Zoo's recently hatched nine Critically Endangered Utila iguanas are revealed to the public. Native to just one tiny Caribbean island, Utila, the lizards are part of a European conservation breeding programme launched to save them from extinction.

October

| ZSL's picture archive goes online

Elephants wandering through Camden, a zebra-drawn carriage and a tiny tiger meeting a bear cub – these are all among the images from ZSL's picture archive that goes online at www.zsl.org/printstore.

| Endangered species found in soon-to-be-destroyed Sumatran forests

ZSL scientists reveal that some unprotected areas of Sumatran forests, which are being allocated to oil palm and timber



concessions, are safe havens for a variety of threatened species, including tigers, elephants, sun bears, tapirs, golden cats and clouded leopards.

| TV launches Whipsnade Watch

A new BBC Three Counties Radio series begins, following a year in the life of ZSL Whipsnade Zoo.

November

| River Thames is invaded by aliens

Surveys to find out just how many alien species are invading Britain's waterways get underway at Richmond. ZSL and other scientists expect to find a number of 'alien' species from as far away as China.

| Baby Asian rhino

A baby male Asian one-horned rhino is born to mother Beluki, in rapid time. Labour only lasts two and a half hours, and the little rhino is up on his feet in just three hours and walking around two hours after that.

| Mating habits of the topi antelope revealed by ZSL

A ZSL scientist finds that some topi males are so aggressively pursued by the females to mate that they refuse the advances of previous partners in order to conserve their sperm.

December

| First-ever footage of the long-eared jerboa in the wild

ZSL releases the first known footage of the long-eared jerboa in the wild, an extraordinary mammal found in the Gobi Desert. The species is one of those highlighted by ZSL's EDGE programme.

| ZSL wins a host of awards

ZSL London Zoo sweeps the board at the Visit London Awards, picking up a grand total of three gold awards. The fact that the public chose *Gorilla Kingdom* and ZSL London Zoo sends a clear signal that they like what they're seeing at the attraction.

| Prisoners build bird boxes to increase sparrow numbers

Although their numbers decline elsewhere, house sparrows find a haven at ZSL London Zoo. One colony of the birds sets up home in the new *Gorilla Kingdom* exhibit, and HM Prison Service provides boxes built specially for the sparrows by prisoners.

UK: ZSL Whipsnade Zoo is working to establish a self-sustaining population of extremely rare barberry carpet moths at Whipsnade through a joint breeding project and by planting thousands of native barberry bushes on site.



Dominica: Addressing dramatic decline in global amphibian populations. Designing an in-country captive breeding facility for the critically endangered 'mountain chicken'.



Kenya: ZSL works with local teams to protect and manage black rhino and elephant populations in Kenya.



ZSL's Mission:

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

ZSL runs conservation programmes in Britain and over 30 countries worldwide. A selection of our projects are profiled here. For more information about our work around the globe, visit www.zsl.org.

Galapagos: Disease monitoring of the unique island wildlife of the Galapagos.



Brazil: Supporting biodiversity through sustainable trade in ornamental fish in the Brazilian Amazon.



Gabon: Conserving western lowland gorillas by supporting park management, ecotourism development, and gorilla and human health monitoring.



Saudi Arabia: A long-term collaboration. Gazelle breeding and reintroduction, wildlife monitoring and protected area research.



Asia: As well as raising funds for tiger conservation via 21st Century Tiger, ZSL is working to maintain habitat in Indonesia, and finding ways to reduce conflicts with people in Bangladesh.



Russia: ZSL is training Russian scientists in wildlife disease monitoring in the Russian Far East and gathering information for a potential reintroduction of Amur leopards.



Philippines: Project Seahorse continues its work with Marine Protected Areas in the Philippines.



DR Congo: Continuing a programme of park rehabilitation, patrol support and ranger training in the Virunga National Park under a €1.5m EU grant.



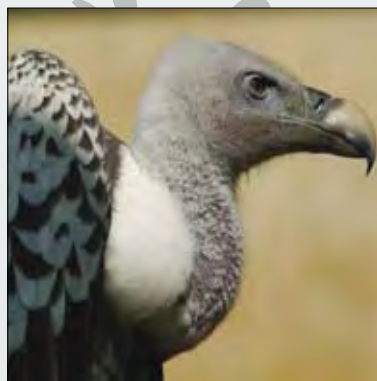
Chagos Archipelago: Surveying pristine reefs and investigating coral disease.



UK: Protecting native British wildlife through health-screening programmes.



India: ZSL and partners continue to respond to the declines in Indian vulture populations.



Tanzania: ZSL's Tanzania Carnivore Centre has produced Conservation Action Plans for all 35 species of native carnivores and continues to develop a database for cheetahs and wild dogs.



The Living Collections

If the launch of *Gorilla Kingdom*, the *Clore Rainforest Lookout* and *In with the Lemurs* was not enough, the Living Collections finished 2007 with a further three major new developments underway at ZSL London Zoo and ZSL Whipsnade Zoo.

As 2007 rolled into 2008, plans for yet another busy year of exciting new exhibits were rapidly taking shape. At Regent's Park, the flagship development was the sympathetic transformation of the existing bird house into the new *Blackburn Pavilion*. The building, erected in 1883 with funds from the sale of Jumbo the famous elephant, had originally been designed for reptiles. While the bird-keeping staff had achieved numerous breeding successes in recent years, the building was in need of some care and attention and the provision of up-to-date bird husbandry facilities for a twenty-first-century zoo. It was felt that what could be achieved was a harmony between old and new, keeping the much-loved Victorian feel of the house in combination with a modern approach to both exhibitry and animal keeping.

A generous donation from the Blackburn family, long-standing supporters of ZSL, allowed this vision to become a reality. Our visitors can now walk through a combination of exhibits, beginning with a Victorian-themed atrium, through to our glorious toucans. They then enter a lushly planted walk-through exhibit, where they will meet a curious family of roul-roul partridges, busying themselves in the undergrowth and stepping out onto the winding path to meet the visitors. A flash of red wing rushing past signals the graceful red-crested turaco. Bali starlings perch in the trees and this beautiful collection of over 50 bird species is accompanied by the background music of the central waterfall feature. Notable species in the pavilion include the Critically Endangered Montserrat oriole and Extinct in the Wild Socorro dove, which was the first species released in the free-flight area.

But the area that will perhaps capture the imagination of visitors most is found at the very end of the walk-through trail, where the path leads through to another free-flight area. Here the exquisite and tiny *Amazilia* hummingbirds are to be found. These little creatures, each weighing in at 5g, pack a visual punch well above their weight. Visitors will be able to watch as they hover over nectar feeders, and if still and quiet, hear the eponymous hum of their rapidly beating wings. ZSL London Zoo is the only place in the UK where hummingbirds are publicly exhibited, creating a unique experience. In the same walk-through area, and complementing the hummingbirds of the Americas, are the glossy, iridescent sunbirds

of Africa. If this was not experience enough, as visitors leave and if timed to the hour, they can stop and watch the inventive and 'Heath Robinson-esque' Hunkin clock as it whirs into action. The clock, standing at the front of the *Blackburn Pavilion*, was designed and made by the artist Tim Hunkin. Featuring two figures and numerous birds appearing and disappearing in a minute-long 'dance', the clock is already proving to be a firm favourite with regular visitors to the collections, who now gather on the hour to watch the spectacle. Not many clocks receive a spontaneous round of applause, but the Hunkin clock invariably does. The *Blackburn Pavilion* opened to fantastic media coverage in March 2008.

At ZSL Whipsnade Zoo new exhibits for two of our most charismatic species opened in February and March 2008. The *Rhinos of Nepal* exhibit provides additional space and new heated pools for the armoured giants of the Zoo – our collection of Asian one-horned rhinos. The three new stalls allow for much more flexible management of the rhinos, which was needed due to the happily expanding numbers housed there. In the 2006-2007 annual review, we reported on the birth of a female calf to Behan, and in late 2007 Beluki, the other young female, gave birth to a male calf. All are doing well and have settled into their expanded accommodation. The exhibit provides a showcase for this beautiful and Endangered species, the work of the keepers with the rhinos and also an opportunity for visitors to learn more about ZSL's work with rhinos in

Nepal. The exhibit is additionally the most 'green' of the recent developments at ZSL, with recycled products, solar panels and the whole life costs of the materials used in the build considered.

Building on the Zoo's historic success with cheetahs, a new home, *Cheetah Rock*, has been created to provide the modern facilities in which the complicated process of cheetah breeding can be accomplished. ZSL Whipsnade Zoo was the first zoo worldwide to successfully breed cheetahs, in 1966, and since then has bred 131. There has, however, been a hiatus in recent years, but it is hoped that the new exhibit will kick-start the process once more. The 5,000m² exhibit, encompassing two large paddock areas and off-show breeding facilities, will give the cheetahs a large area in which this, the fastest land mammal, can run. It

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also gives our visitors the opportunity to see the cheetahs at close quarters through the floor-to-ceiling window areas in the African-themed viewing hut. For the cheetahs, the rocky structure seen in the outdoor paddock has both shelter and a disguised heated pad, providing a cosy spot from which they can see across into neighbouring paddocks. Cheetahs in the wild seek out such rocky outcrops to scan their surrounding area. Although, traditionally, ZSL Whipsnade Zoo has maintained southern African cheetahs, the new exhibit will become home to the endangered north African cheetah, arriving from zoos in the United Arab Emirates that are collaborating in this breeding programme. As with the *Rhinos of Nepal* exhibit, interpretation will showcase the outstanding and long-running research and conservation cheetah-focused work of ZSL in Tanzania.

The Continuing Cycle of Life

Many notable births took place in the past year, some of them firsts for ZSL after sustained work by the keeping staff. Among the largest of the new arrivals was the male elephant calf born in January 2008, the fourth successful birth since March 2004. The young male has quickly integrated into the growing herd and

accompanies his mother, aunts and cousins, when weather allows, on walks out into ZSL Whipsnade Zoo. Also at the Zoo, an onager foal and gaur calf arrived in 2007.

At ZSL London Zoo a red titi monkey was born in the *Clore Rainforest Lookout*. Due to the design of the new biome, visitors were able to gain excellent views of the youngster as it clung to its parents. It continues to do well. A new female gorilla, Mjuku, arrived in March 2008 from Chessington Zoo to continue to build the group in *Gorilla Kingdom*. Bobby the silverback has been mating with the young female Effie on a regular basis and it is hoped that this will prove fruitful in the near future.

Two Gila monsters were born – the first time in 15 years that this species had been bred at ZSL and a significant technical achievement for the reptile keepers. The Gila monster is declining in its native Mexico and the southern United States, as habitat is lost through increasing development. At ZSL Whipsnade Zoo there was breeding success with the Critically Endangered Egyptian tortoise. A significant event for the Herpetology Team saw the Philippine crocodiles arrive at ZSL London Zoo.

Across Europe, 15 founder animals have been imported from the Philippines to establish a new *ex situ* breeding programme

for this Critically Endangered species and ZSL holds two of these animals.

The Invertebrate Team successfully hatched the phasid *Pharnacia jianfenglingensis*, the first recorded hatching for this species at ZSL. Continued good breeding success was seen in 2007 for the *Partula* snails, Fregate beetles and Bermudian snails. The species recovery programmes of two UK native species, the field cricket and red-barbed ant, recorded excellent survivorship and rearing.

Meanwhile, the Aquarium Team has had many notable spawning successes in the past year, including three species of Extinct in the Wild pupfish and six Critically Endangered Mexican live-bearing species. The Critically Endangered Corfu killifish spawned and doubled the numbers held in the collection.

On the avian side, the Bird Team was once again kept busy with the species recovery programme for the corncrake. In the 2007 season, 142 birds were successfully bred – a record number – with 130 sent to the Nene Washes and 109 eventually released. Other notable breeding successes were the two chicks from two pairs of tawny frogmouth after concerted efforts by keeping staff, and the Endangered white-winged wood duck – a first for ZSL.

Critical to all of the work of the Living Collections has been the support and expert knowledge of the Veterinary Team. From the day-to-day clinical care of the animals to its continued role in supporting native species programmes, the work of the Vet Team has been exemplary. This year the Vet Team assisted in the training of gorillas, sloth bears and tapirs to allow hand injection, enabling medical treatments to be given without restraining or anaesthetising animals. If this was not enough, they also participated in innovative research in collaboration with German colleagues, using blood-sucking kissing bugs to obtain diagnostic samples from conscious animals, including tapirs and okapis.

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Zoo Staff in the Field

Members of the Herpetology Team, in conjunction with colleagues at IoZ and Conservation Programmes, travelled to Dominica in the Caribbean to collect specimens of the Critically Endangered mountain chicken. It's not actually a chicken, but a large frog now only found on Dominica and Montserrat. The mountain chicken has undergone dramatic decreases in recent years, with an 80% decline in its numbers. The seven animals brought back to London will form the nucleus of an *ex situ* breeding programme. Initially housed in bio-secure facilities at the IoZ, the frogs will soon move to stand-alone bio-secure units at ZSL Whipsnade Zoo, made possible through the generous donation of a patron of the Society.

The Team Leader of Horticulture and Senior Curator of Higher Vertebrates also travelled to Costa Rica to investigate the sustainable use of forest plants. This project will be in conjunction with local peoples to assist them in generating income from the forest without the logging of valuable trees. New plants from a sustainable tropical plant nursery in Costa Rica have already been added to the biome in the *Clore Rainforest Lookout*.

The Chief Veterinary Officer travelled to India to act as an adviser and consultant to ZSL's partners in vulture conservation. A number of centres were visited on this trip. In addition, the Zoo Conservation Programme Manager travelled to Madagascar to take part in a planning workshop for the creation of a new protected area in the south-east of the country.



National and International Recognition

The staff of the Living Collections continued to excel in the international zoo community and beyond. ZSL staff served on numerous committees and working groups for the British and Irish Association of Zoos and Aquariums (BIAZA), the European Association of Zoos and Aquaria (EAZA) and the European Union of Aquarium Curators (EUAC). They also served on the steering committees or advisory boards of, among others, the

International Species Inventory System, the IUCN Conservation Breeding Specialist Group (CBSG), The Frozen Ark and the EAZA Academy, and on the Trustee Board of the Project Seahorse Foundation for Marine Conservation. ZSL's Pathologist continued in their role as President of the British Veterinary Zoological Society.

At international meetings, Living Collections staff led and facilitated varied conservation workshops

and gave countless presentations. They also co-organised numerous national and international meetings in 2007, including the BIAZA Research meeting held at ZSL Whipsnade Zoo and the 10th Annual Reef Conservation UK conference held at ZSL London Zoo.

ZSL Living Collections staff also continued to assist in the work of Amphibian Ark, the international collaboration between the World Association of Zoos and Aquariums (WAZA) and the IUCN Amphibian and Conservation Breeding Specialist Groups. The

Living Collections contributed staff in the roles of Taxon Officer and Global Campaign Manager for the 2008 Year of the Frog campaign. The year-long campaign aims to raise awareness of the amphibian extinction crisis and ZSL helped launch the campaign when Sir David Attenborough, Patron of Amphibian Ark and the Year, unveiled a frog sculpture, made of recycled materials, at the ZSL London Zoo site.

The book *Zoos in the 21st Century: Catalysts for conservation?* was launched in the autumn of 2007 in Budapest during the annual conference of WAZA. The book, resulting from a symposium convened at ZSL in 2004, was co-edited by staff of ZSL, the Wildlife Conservation Society, Zoos South Australia and the North of England Zoological Society (NEZS).

ZSL continued its excellent awards record from the last few years. At the BIAZA Awards commendations were given for Best Exhibit (*Butterfly Paradise*), Significant Advances in Zoo and Wildlife Medicine (Assessment of reptilian early-egg viability), Research (parthenogenesis in Komodo dragons, joint award with NEZS) and Best Sustainable Zoo and Aquarium (*Gorilla Kingdom*). At the EAZA Awards we went one better, winning the Sustainability Award for the *Gorilla Kingdom* exhibit. Meanwhile, Andrew Durham from the Animal Department at ZSL Whipsnade Zoo won the Michael Brambell Award for 2007. The most welcome award was presented to Paul Pearce-Kelly, Senior Curator of Lower Vertebrates and Invertebrates, who won the IUCN CBSG Ulysses S Seal Award for Innovation in Conservation. Those present heard one of the funniest and most touching acceptance speeches outside of the Oscars.

ZSL Living Collections staff continued to assist in the work of Amphibian Ark.



A full animal list for ZSL London Zoo and ZSL Whipsnade Zoo can be found at www.zsl.org/animals

Field Conservation

ZSL's conservation teams were once again involved in a host of projects worldwide. Their work addresses some of the world's toughest conservation challenges and covers all areas of wildlife protection, from marine and desert environments to UK native species.

Bushmeat and Forests

The Mikongo Conservation Centre in Gabon, to which ZSL and supporters contributed core funds, was visited by 200 tourists during the year, and was also featured for its gorilla conservation work on the BBC's *Saving Planet Earth* series. The BBC Wildlife Fund donated over £13,000 towards ZSL's work at Mikongo. ZSL has also continued its programme of park rehabilitation, patrol support and ranger training in the Democratic Republic of Congo's Virunga National Park (one of the most biodiverse parks in Africa) under a £1.5 million EU grant. This EU grant is vital: DR Congo is a country destroyed by war, and ZSL is working in very difficult conditions there. ZSL received further funding towards its work in Virunga from WildlifeDirect, UNESCO and from online donations. The latter came from the public in response to the news of the killing of mountain gorillas. The press also showed great interest in the revelation, based on ZSL research, that gorillas use leaves as napkins to wipe their hands after meals.

Another important award was won early in the year for ZSL's Wildlife Wood Project in Ghana and Cameroon, supported by UK timber importer Timbmet since 2005.

A Darwin Initiative grant is now enabling ZSL to run the project across both countries, its aim being to work with local timber companies to assist them in managing wildlife sustainably in their concessions. A set of wildlife indicators are being identified and tested, and a system of monitoring of these indicators developed, to help companies achieve timber certification.

The Bushmeat and Forests conservation programme also spent six months developing a new project in Madagascar, together with the Wildlife Conservation Society (WCS), and is seeking funding for sustainable management and ecotourism development of the future Lokobe National Park on the island of Nosy Be.

Research carried out under the IoZ's Bushmeat Research Programme on the sustainability of bushmeat hunting in Equatorial Guinea received the BIAZA award for best research project.

Carnivores and People

When an area alongside Indonesia's Bukit Tigah Puluh National Park was reported as being worthless for wildlife and allocated for timber concessions, the ZSL Indonesia team raised an eyebrow. They went in for a survey, and their suspicions were confirmed. Far from being worthless, the area contained tigers, elephants, clouded leopards, golden cats, tapirs and more. Armed with camera-trap pictures of animals from the area, the team alerted the press and the story was taken up by international media, while ZSL raised the issue directly with the Indonesian Palm Oil Board. Also on the subject of palm oil, leading consultant KPMG used ZSL facilities and experts in training seminars on how to persuade the Indonesian government to alter its land-use policy to take account of the conservation value of so-called 'degraded' forests. KPMG donated £25,000 to the Indonesian project.

In the Russian Far East, ZSL staff worked with WCS in the capture and biomedical sampling of wild Amur leopards as part of our wildlife health programme in the region. The long-term aim is to help the Russian authorities establish a second, 'insurance' population of the subspecies in the area – work supported by a Darwin Initiative grant.

In Africa, Tanzania has continued to be a key focus, with National Conservation Action Plans being completed for all 35 species of carnivore in 2007. A total of 13 conservation professionals have now been trained in survey techniques on this programme. ZSL's cheetah and wild dog conservation work has gone rangewide, with the launch of the ambitious rangewide conservation planning initiative, resulting in regional strategic plans in southern and eastern Africa to secure the long-term survival of both species.

Along with work continuing in Bangladesh on helping tigers and people live alongside each other, further support for 21st Century Tiger from Dreamworld Zoo in Australia, and a presentation by Sarah Christie at the Global Tiger Forum meeting in Kathmandu, the year has been a very busy one for the Carnivores and People Team.

The press was very interested in the revelation, based on ZSL research, that gorillas use leaves as napkins to wipe their hands after meals.



Deserts and Rangelands

The Deserts and Rangelands Team was very busy in Africa during 2007. Support was given to aerial surveys for Critically Endangered addax in Niger, and in completing the first survey of slender-horned gazelle in Algeria. There was plenty of work handled across the continent in east Africa, too, where the National Strategy for rhinos in Kenya, facilitated by ZSL, was concluded, including a published review of rhino conservation over the 20 years of our involvement.

Over in Nepal, a country still in social and political crisis after civil war, there are serious problems in conservation, with the decline of rhinos and other endangered species, compounded by severe habitat loss from alien invasive plants. In response, ZSL – with help from the Darwin Initiative – has launched a project, working closely with Nepal conservationists and, in the region, the Society has continued its work with vultures, which have seen a frightening population decline in recent years. Work is still continuing on captive breeding of the birds in Pinjore for release into the wild, and on finding solutions to the pharmaceuticals that still remain in the environment and cause wildlife poisoning.

On the subject of birds, another ZSL Darwin Initiative – this time on the blue crane in South Africa – is in full swing, with extensive training, mapping of populations and analysis of threats, especially in the growing agricultural sector.

Back in the desert, the ZSL team running the King Khalid Wildlife Research Centre in Thumamah (now in its 20th year) has new scientists in post and a reinvigorated conservation and science programme. Reintroduction remains a focus and this year 21 newly released mountain gazelles in the ibex reserve were closely monitored. Another Darwin project, this time in Thailand, on human-elephant conflict boasted excellent results in motivating local communities in self-help methods. The staff has shown the way to the Thai authorities on best practices and is lobbying for necessary conservation of this unique wildlife area near the River Kwai.

In the disease field the team engaged, through their position on the Avian Influenza (CMS) task force, on a number of issues arising from this fascinating problem. The most important being to cool heads about wild birds, which are often accused but rarely involved in bird flu outbreaks.

With new proposals on climate change research in east Africa and more collaboration in the south Asia region, 2008 is already shaping up to be an even busier year for the Deserts and Rangelands programme.



Island Ecosystems

The mountain chicken, contrarily, is actually a frog, and a Critically Endangered one, too. In 2007 ZSL collected a number of individuals of this Dominican amphibian for the basis of a breeding programme. Planning is now underway for the construction of a dedicated facility for the long-term maintenance and breeding of this animal at ZSL Whipsnade Zoo.

Another creature requiring a breeding programme for its survival is the Bermudian snail, and ZSL's programme enjoyed breeding success in 2007, leading to plans for a transfer of part of the population to Bermuda as part of the ongoing species recovery programme for this endemic species.

The Frigate beetle also bred successfully under ZSL's programme during the year and, through collaboration with Manchester



University, the Society was able to clarify the degree of genetic variation within populations.

The taxonomy of petrels of the North Atlantic has long been a matter of some debate, and a ZSL study went a long way towards providing conclusive evidence of exact species designations within the family, itself an important step towards future conservation plans.

Solenodons are among the highest-ranked mammals on ZSL's EDGE of Existence programme, and the Society has been investigating the genetics of the Hispaniolan solenodon, as part of an overall plan to research and conserve the animal. Working with Durrell, ZSL is putting together proposals for the possibility of bringing the species into captivity for a breeding programme.

Marine and Freshwater

Proof that long-term planning really can come to fruition emerged when the people of Handumon landed first place in the national search for the best Marine Protected Area (MPA). As there are over 1,000 MPAs in the Philippines, this is a great achievement. It was the first MPA established by ZSL's Project Seahorse (which this year won a £20,000 award from the BBC Saving Planet Earth Fund). ZSL was also awarded nearly £500,000 towards its marine conservation work in the Philippines by the Big Lottery Fund to establish a community-led mangrove rehabilitation scheme, in which abandoned fishponds will be turned back into mangrove habitat, providing nursery areas for fish and greater livelihood opportunities for the communities.

A very popular project with the press was the satellite tagging of Claudia the green turtle, the first such scheme in the western Indian Ocean. Claudia very quickly travelled 2,000km north to Malindi on the Kenyan coastline, showing the importance of international cooperation in conservation. Follow the progress of further turtle migrations live on the ZSL website. Also in Mozambique, local communities have established a voluntary fisheries no-take zone with the support of ZSL-Maluane, making it the first community-led marine reserve in the country.

Invertebrate surveys of alien invasive species in the Thames revealed that zebra mussels have increased rapidly along the river, with potential ecological and economic consequences. The tragic extinction of the baiji, or Yangtze River dolphin, received great coverage in the media, once the announcement was made by ZSL. IoZ staff have since returned to the Chinese river, to investigate the status of other endangered river species, and to hope against hope that one or two baiji may still remain. More locally, the Marine and Freshwater Team has also been working on a Biodiversity Action Plan for the City of Westminster.

UK Native Species

Exciting news emerged in 2007 as ZSL staff, working in the Isles of Scilly researching the ecology and behaviour of red-barbed ants, discovered several new nests, and over 40 on Chapel Down – nearly 30 more than had been previously found. This particular species of ant is the subject of an important breeding programme by ZSL, as its numbers are slight in the UK. The insect's plight is compounded by the fact that its colonies are often single-sex. ZSL's programme hopes to be able to release new colonies in the summer of 2008. Crispin and Borst donated a portakabin as a bio-secure breeding facility for the ants, as well as for field crickets.

The Deserts and Rangelands Team was very busy in Africa during 2007. Support was given to aerial surveys for Critically Endangered addax in Niger, and in completing the first survey of slender-horned gazelle in Algeria.

The corncrake introduction programme leapt forward, too, with 130 chicks successfully reared at ZSL Whipsnade Zoo for reintroduction in the Nene Washes, the highest hatch-rate achieved.

At ZSL London Zoo, supported by a donation of £10,000 from Barclays Bank, the Woodland Walk alongside the canal in Regent's Park has been greatly enhanced, with more signage and a new hide to enjoy. Nesting boxes for swifts and house sparrows have been placed at points around the Zoo, the latter in *Gorilla Kingdom*.

Training took place in 2007 of volunteers for field survey work to research, in particular, bats and invertebrates at both sites. Meanwhile, the team has been conducting health checks on Britain's growing population of red kites, and raising awareness of the dangers of feeding them in gardens.

Indicators and Assessments Unit

The Indicators and Assessments Unit was formed in 2006 to consolidate work at ZSL on defining the status and trends of biodiversity. The five major projects of the unit are the IUCN Sampled Red List Index, WWF/ZSL Living Planet Index, WCS/ZSL Wildlife Picture Index, Regional Red List Programme and the EDGE of Existence programme. The IoZ is primarily responsible for the first three of these projects, all of which aim to produce scientifically robust global biodiversity indicators.

During 2007, the unit was awarded £697,000 from 11 different grant-holding and charitable trusts, and individual donors. The Living Planet Database overhaul was completed; 20,674 species accounts from 15 countries were compiled into the newly developed Regional Red List; 4,530 IUCN Red List Assessments were coordinated and submitted to the IUCN for the 2008 Red List, including the first ever invertebrate groups. This involved establishing and coordinating collaborations with a growing network currently estimated at over 400 scientists. A further 6,750 assessments are scheduled for 2008.

The IAU also ran six workshops, and gave nine talks at universities, NGOs, international conferences and symposia.



EDGE

The launch of the mammalian EDGE of Existence website in early 2007 led to in excess of one million hits in the first day alone. Ten focal species of mammal were established, with three expeditions completed, and EDGE was awarded two BIAZA Awards.

There was a tragic irony in that the mammal that topped the tree for its combination of Evolutionary Distinctiveness and Global Endangerment was soon to be no longer with us. Within months of the launch of EDGE, the baiji, or Yangtze River dolphin, was declared functionally extinct.

Other news was more encouraging, though, and the work that the programme is doing is really putting many of these species on the map. The first-ever footage, for example, of the long-eared jerboa, which was recorded by EDGE fellows in Mongolia, became so popular that it was the most read BBC online story at the end of the year. Coverage of this type is very important, because one of the significant problems that many of these species face is a global lack of awareness of their plight.

Meanwhile, the Attenborough's echidna was found to be doing better than expected, thanks to an expedition made by members of the EDGE of Existence team.

EDGE fellows have now been appointed across the world where the 10 focal species exist, with the agenda of creating long-term conservation projects for these Critically Endangered animals.

As 2007 drew to a close, plans were already underway for the next animal group to fall under the EDGE spotlight – the amphibians.

Conservation Science

The Institute of Zoology – ZSL’s scientific research wing – aims to identify, undertake and communicate high-quality research to benefit the conservation of animal species and their habitats.



Risk assessment frameworks could in the long run help to save wildlife such as the finches of Galapagos

The link between the Institute of Zoology (IoZ) and the Department of Zoology at the University of Cambridge continues to be fruitful, as demonstrated by the wide range of collaborative studies, publications and training of students.

In July we were pleased to welcome Professor Tim Blackburn as Head of the IoZ. Tim was previously Professor of Macroecology at the University of Birmingham, where he retains an Honorary Chair, and is also Visiting Professor at the University of Oxford. Tim’s research focuses on the ecology of invasive alien species. Invasive aliens are one of the most serious current threats to global biodiversity, including species like the Socorro dove and *Partula* snails that are extinct in the wild, but continue to survive thanks to important captive-breeding programmes at ZSL.

Research undertaken at the IoZ continues to respond to a wide range of conservation issues. As a result of this work, ever more accurate predictions about population changes in the light of environmental pressures can be made to inform national and international decision-making processes.

In 2007, the new Behavioural and Population Ecology research theme was established to strengthen the links between the study of individuals (behavioural ecology) and populations (population ecology). Research activities in this theme focus on four key areas: (1) the human-wildlife interface, which addresses the bushmeat trade and human-predator conflict; (2) the individuals-population interface, which explores these links in a wide variety of taxa, from birds and butterflies to amphibians and mammals; (3) monitoring theory and practice, which encompasses work ranging from radio-tagging wasps to camera-trapping cryptic mammals; (4) social biology and sexual selection, which investigates mate choice and signalling, optimal foraging and collective action.

Behavioural and genetic data from IoZ's long-term research study of cheetahs in the Serengeti was used to unveil the mating system of this population. IoZ scientists used a statistical method that partitions each cheetah litter into full siblings to infer the father of the cubs from a pool of candidate males, and hence to produce evidence of multiple paternity. The analysis showed that female cheetahs are promiscuous, with evidence of high rates of multiple paternity in litters with more than one cub. The results indicated that males living outside the study area contributed substantially to reproduction and highlight the importance that high mobility plays in cheetah ecology and conservation. Understanding the breeding system of this threatened species will aid in the development of future management plans aimed at the long-term maintenance of genetic variability among fragmented populations.

Alex Rogers received funding from the Lighthouse Foundation to undertake a project on the deep-water coral habitats of the Azores using the submersible *Lula* of the Rebikoff Foundation. The Leverhulme Trust also provided funding for an exciting project that will improve our understanding of the relationships between the occurrence of deep-sea corals and the physical environment, and explore important aspects of coral ecology and resilience to human impacts. We also received a grant to initiate the International Programme on the State of the Oceans from the JM Kaplan Fund. This programme will assess how oceans are changing and how human activities can be managed in order to restore or prevent further degradation of ocean ecosystems.

The Cetacean Strandings Investigation Programme, coordinated by ZSL and project managed by Rob Deaville, received significant funding from Defra and the Welsh Assembly Government to investigate whale, dolphin, harbour porpoise and turtle strandings in the UK for the next three years. Currently, around 750 stranded cetaceans are reported annually in the UK. Renewed funding of the programme will ensure that the national cetacean and turtle strandings databases and tissue banks will continue to support a broad range of scientific research activity.

An exciting project will improve our understanding of the relationships between the occurrence of deep-sea corals and the physical environment, and explore important aspects of coral ecology and resilience to human impacts.



Research published in *Nature* by scientists at IoZ and Imperial College London, on a new complete 'tree of life' tracing the history of all 4,500 mammal species, shows that modern mammals did not diversify as a result of the death of the dinosaurs. This work contradicts the previously accepted theory that the Mass Extinction Event that wiped out the dinosaurs 65 million years ago prompted the rapid rise of the mammals that exist today. The study shows that many of the genetic ancestors of the mammals we see around us today existed 85 million years ago, and survived the meteor impact that is thought to have finished off the dinosaurs. The researchers believe that our ancestors, and those of all other modern mammals, began to radiate around the time of a sudden increase in the temperature of the planet – a full 10 million years after the dinosaurs disappeared.

Research in wildlife epidemiology continued to identify where disease is a threat to wildlife conservation, and investigate the emergence of infectious diseases as a threat to conservation and public health. The development of a new predictive model has improved our understanding of the pathways by which zoonotic vector-borne pathogens can be introduced to new areas. This risk-assessment framework was used to determine the most likely route for the introduction of West Nile virus to Galapagos, which could have devastating consequences for the many endemic bird species, such as the famous Darwin's finches, if it reaches this unique World Heritage Site.

In collaboration with Imperial College London and the University of Victoria, Canada, researchers at IoZ examined the relationship between the emergence of the pathogenic fungus *Batrachochytrium dendrobatidis* and the global trade in amphibians. Sampling of bullfrog populations across the Americas, Europe and Asia indicated that all populations of bullfrogs contained animals infected with the fungus. Owing to the fact that bullfrogs are asymptomatic when infected, they may act as reservoirs and vectors of the disease. A review of the relationship between introduced amphibians, amphibian trade and the fungal disease revealed the potential for trade to contribute to the distribution of the fungus on a global scale.

Research in the Genetic Variation, Fitness and Adaptability research theme aims to develop and apply empirical and theoretical methods to describe patterns of relatedness among individuals, populations and species, and to apply this knowledge of genetic structure and genetic diversity/fitness relationships to the management of animal populations. To this end, Bill Jordan and Kate Ciborowski were awarded a grant to study how changes in the level of expression of odorant receptors may be involved in imprinting Atlantic salmon to their home stream before they make their migration to the ocean. Understanding the mechanisms underlying homing behaviour, which determines population structure in the species, can help predict the outcome of deliberate or inadvertent releases of non-native salmon into natural populations, and hence the extent to which any such releases may threaten these native populations.

The Reproductive Biology group continued to explore fundamental mechanisms of reproduction and develop technologies that have practical applications. Research on the role of the oviduct in sperm storage and transport has shown that the oviduct responds to the arrival of spermatozoa by initiating novel gene transcription and protein synthesis, presumably preparing the reproductive tract for the eventual development of an embryo. Recent studies also suggest that the oviduct is involved in sperm selection processes, either by impeding the progress of poor-quality spermatozoa or by the involvement of recognition processes. Results indicate that one protein in particular (heat shock cognate protein 70) seems to be important in enhancing sperm survival in several species. This suggests that the proteins involved in sperm survival may not be species-specific, which may be important in helping to improve the success of artificial insemination techniques for the captive breeding of wild species, especially if the spermatozoa need to be transported from one place to another.

Education and training are central to IoZ's activities and we have a strong commitment to hosting research projects, particularly those leading to a PhD degree. In partnership with Imperial College London, the Royal Botanic Gardens Kew and Durrell Wildlife Conservation Trust, IoZ has developed a new MSc in Conservation Science. The course is aimed at graduates or conservation practitioners wishing to improve their existing skills. It is strongly interdisciplinary, covering both socioeconomic and biological analysis, as well as providing training in practical skills.

In April we were delighted to host Sense-sational Science, an interdisciplinary science event for National Science and Engineering Week 2007. The event explored how animal senses are vital for survival, why scientists study them and how this research has enlightened technology and benefited society. During the 16-day run, Sense-sational Science was visited by over 5,000 members of the public and schoolchildren.

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Communicating Science

A major part of the Institute's work is communicating its findings and other information to researchers, professional zoologists and the public. We achieve this through a varied programme of meetings and the publication of scientific journals and books.



ZSL Publications

Animal Conservation provides a forum for the publication of novel, peer-reviewed research into the conservation of animal species and their habitats. The focus is on rigorous quantitative studies relating to populations, species or communities and their conservation. Subjects covered include population biology, epidemiology, evolutionary ecology, population genetics, biodiversity, biogeography and conservation economics.

The *Journal of Zoology*, our pre-eminent journal dedicated to academic zoology, publishes high-quality research papers and reviews. Published monthly, the journal promotes hypothesis-driven studies that are of interest to all readers of zoology, and provides comprehensive coverage of the latest research.

Bushmeat and Livelihoods: wildlife management and poverty reduction, edited by Glyn Davies and David Brown, provides insight into what species survive different intensities of bushmeat hunting and trapping, and examines the size of household consumption and market trading. Governance, and institutional impacts on wildlife

management, lessons learned from agriculture and non-timber forest production, as well as the biogeographic, cultural and economic differences in wildlife trade and consumption are included.

Zoos in the 21st Century: Catalysts for conservation? edited by Alexandra Zimmerman, Matthew Hatchwell, Lesley Dickie and Chris West, was also published. The book examines the role zoos and aquariums play in protecting and managing global biodiversity and defines a new vision in order to increase their contribution to conservation.

Zoo and wildlife veterinarians are key members of the expert teams required for wildlife conservation. Volume 41 of the *International Zoo Yearbook* included papers on animal health and conservation, bringing together work on conservation, biosurveillance, regional management planning, re-introductions, disease risk assessment, faecal steroid monitoring, West Nile virus and conservation medicine. The volume also included detailed reviews on the current situation for amphibian chytrid fungus and avian influenza.

Scientific Meetings

Scientific Meetings were held monthly throughout the academic year and covered a range of subjects, including 'Saving gorillas: understanding the threats and finding the solutions to conserving one of our closest relatives', 'Reproductive strategies in animal societies' and 'Evolution in the marine environment'. Scientific Meetings are free and open to anyone who would like to attend. Details can be found at www.zsl.org/science/scientific-meetings.

In May, ZSL and the Wildlife Conservation Society hosted the international symposium, 'Zoo experiences and the human dimensions of wildlife conservation', organised by John Fraser, Carol Saunders and Tom Webler. This symposium facilitated important debate on the moral, psychological, social and cultural aspects of zoos and aquariums from the perspective of the social sciences.

A second symposium was held in November, 'Trade-offs in conservation: deciding what to save', organised by Nigel

Leader-Williams, Bill Adams and Bob Smith. The symposium examined the critical issues of priority setting and decision-making, where resources for conservation are limited. Sessions included important debate on the wider non-biological issues that surround our assessment of trade-offs, and factors that influence the choices that we make within a conservation decision-making framework.

The 2007 Stamford Raffles Lecture was given by Steve Jones, Professor of Genetics at University College London. 'Is man just another animal?' examined the similarities and differences between human DNA and that of our closest relatives, looking beyond comparative anatomy to ask whether the science helps us to understand what we are as human beings, rather than merely as rather unspecialised primates.

ZSL Scientific Awards

ZSL recognises outstanding achievements in the field of zoological research and conservation through its annual presentation of awards and prizes. The awards are relevant to all levels of achievement: the Prince Philip Prize and Marsh Award is given for an exceptional sixth-form project, the Charles Darwin Award is presented for the best undergraduate thesis and the Thomas Henry Huxley Award and Marsh Prize is awarded for an outstanding PhD thesis.

Significant and original contributions by professional zoologists are acknowledged with the Scientific and Frink Medals, while the work of eminent amateur zoologists is celebrated with the

Stamford Raffles Prize. The Marsh Awards for Conservation Biology and Marine and Freshwater Conservation recognise exceptional contributions of fundamental science and its application to conservation of animal species and habitats. The Thomson/Zoological Record Award and ZSL's Silver Medal are awarded for distinguished contributions to the communication, understanding and appreciation of zoology and wildlife conservation. We would like to thank the Marsh Christian Trust and Thomson Scientific for their continued support of ZSL's awards. For further information please see www.zsl.org/science/scientific-awards.



LEFT TO RIGHT: Peter Chandler, Dr Angus Buckling, Nigel Robinson (Thomson Scientific), Professor Stuart West, Dr Gina Galli, Simon King, Louise Russell, Professor Sir Patrick Bateson, Marguerite Xerri, Professor Sir John Lawton, Brian Marsh (Marsh Christian Trust), Helen Weavers, Professor Matt Keeling, Professor Brian Charlesworth, Benjamin Weilgart-Whitehead, Professor Sarah Wanless

Library

During 2007, 1,982 books were added to the online catalogue, 3,558 journal issues were received and 2,979 loans were made to Fellows and ZSL staff.

ZSL has received further professional advice about the conservation, storage, display and environmental conditions within the Library. The Museums, Libraries and Archives Council (MLA) London funded preservation audit visits by two professional conservators, providing ZSL with detailed reports on our preservation needs. New guidelines have been compiled for consulting 'special collections'. The guidelines have been displayed in the Reading Room and they can be accessed via the Library pages on the ZSL website. The Library's serial holdings have been updated on SUNCAT and will now be updated on a quarterly basis.

Coral Cay Conservation has presented ZSL with a collection of publications on marine conservation. Peter Denton has presented the Library with a complete set of publications by Clinton Keeling.

The ZSL Art Store has been refurbished and now offers much-improved facilities for the storage and organisation of ZSL's artworks. Our art cataloguer is now organising the artworks for easier retrieval. The cataloguing of the artworks has been generously funded by the Michael Marks Trust until March 2008.

'Artefact of the month' on the ZSL website has continued successfully since it was launched in March 2006. Books, paintings, archives, artefacts and paintings have been featured.

Displays in the Library Reading Room and ZSL reception have been related to the items featured as 'Artefact'. The year began with a display in reception about the cartoonist and artist Ernest Griset. Lionel and Maureen Lambourne kindly lent us some reproductions of their material to enhance the display. From the beginning of April until the end of June we celebrated the Linnaeus tercentenary with displays in the reception case and in the Reading Room. *Systema Naturae* was featured as the April 'Artefact of the month' on the ZSL website. The rest of the year has featured hummingbirds and the

work of John Gould, relating this to the current refurbishment of the bird house at ZSL London Zoo. Pages from John Gould's works were photographed for a 'turning the pages display' to be featured in the *Blackburn Pavilion*, this is an exciting opportunity for these beautiful books to be enjoyed by a wider public.

To celebrate World Book Day on 1 March the Library displayed Captain Cook's journal during his first voyage round the world.

The Library was open for browsing on AGM day. As there were no formal tours in the Library, Fellows were offered a self-guided tour of the artworks and artefacts displayed in the Reading Room.

Twenty-one Friends of the British Library visited on 12 September for a behind-the-scenes tour, where they were given the opportunity to see a selection of ZSL archives, photographs and rare books. A successful behind-the-scenes Library tour was held for Fellows and Friends of ZSL on 24 November. Part of this tour was repeated on 26 November for a group of US students.

Interesting original research on the archives has been carried out by visitors, including work on the saluki kept at the Zoo in the 1830s, providing ground-breaking information.

Historical photography has featured in ZSL's online 'Print Store' which went live during the summer. Library sources have been used for these images. Following extensive press interest in the autumn there have been a considerable number of enquiries about historic photographs, as well as enquiries of a more general historical nature. Over £2,000 of income was generated on the first day that the photographs were featured in the press.

The Henry Moore Foundation provided Camden Arts Centre with a grant for the restoration of the screw mobile by Kenneth Martin. This sculpture formerly hung in the meeting room foyer.

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

Discovery and Learning

Without the will and consent of people, conservation will not happen. ZSL's mission recognises that the promotion of the worldwide conservation of animals and their habitats goes a long way to achieving it.



For ZSL's Discovery and Learning activities, 2007 was a record-breaking year. An expanded programme of public events, more interactive teaching to more schools than ever and innovative interpretation combined to enrich the visitor experience and transform the Living Collections as learning environments. By the year end, a new Head of Discovery and Learning had been appointed, who will take up position in 2008.

Schools' Programme

Both ZSL London Zoo and ZSL Whipsnade Zoo exceeded all records for children participating in the education programme. ZSL London Zoo was visited by 98,331 schoolchildren, with 48,800 undertaking an activity delivered by Education Department staff. This represents a respective increase of 15% and 21% over 2006 figures. ZSL Whipsnade Zoo welcomed 31,282 schoolchildren, 7,147 of whom attended an Education Department activity. This represents a respective increase of 7% and 10% over 2006 figures.

Further to the quantitative success, the Education Department started to consider the qualitative aspects of the learning sessions. As a result, more activities were conducted in the Zoos rather than in classrooms. Classroom sessions were made more interactive and slide shows were replaced by PowerPoint presentations. Teacher feedback throughout the year averaged 'excellent' or 'good' ratings exceeding 90% for educational content, presentation and suitability for age group.

ZSL Outreach

ZSL London Zoo's Outreach programme reached 18,775 pupils (14,957 primary, 3818 secondary) in schools across 14 Local Education Authorities.

Eight programmes are available for primary schools and four for secondaries. These are illustrated by living animals, including lizards, snakes, ferrets and a macaw. The animals are housed in a new unit in the Zoo, which is being established as a model for the highest standards of biosecurity and welfare for the handling and transportation of education animals.

Teacher feedback for Outreach averaged 95% 'excellent' or 'good' ratings for educational content, presentation and suitability for age group.

Exhibit Interpretation

Interpretation is more than putting signs on enclosures – indeed, it is more than just providing information. Rather, ZSL hopes that entire exhibits 'tell' a story as well as satisfying conservation and welfare objectives. Through interpretation, ZSL hopes to enrich the visitor experience, aid learning, foster concern for conservation and deepen our relationship with all visitors and supporters.

The main new interpretative experience of 2007 was *Gorilla Kingdom*. A positive evaluation highlighted the impacts of the gorilla portrait display and voting station (where visitors are asked



Exploration in the Clore Rainforest Lookout and the Rainforest Trail are excellent ways of encouraging young people to engage with nature



to vote for conservation strategies to conserve gorillas by donating coins to particular strategies). Market research revealed that Zoo visitors were learning more about conservation from the exhibit and from the Zoo generally. The voting station attracted over £25,000 in donations. The results of the evaluation were presented at major conferences in London (ZSL and WCS on Conservation Psychology) and at the EAZA Conference in Warsaw.

The *Casson Pavilion* at ZSL London Zoo was the venue for a graphics-based exhibition about the work of vets, keepers, scientists and conservationists at ZSL. Exhibits included an interactive animal-spotting exercise (to replicate the skills needed by field scientists to count animals), a feely box and a Komodo dragon X-ray.

Interpretation was produced for the new *Clore Rainforest Lookout*, including a Discovery Zone with interactive bat and rat ear activities (where, respectively, children could echolocate or navigate using whiskers) funded by the National Endowment for Science, Technology and the Arts (NESTA).

A series of 25 native species graphics were developed for the ZSL London Zoo canalside Woodland Walk, Wildlife Garden and other Zoo areas. These highlight, also, the ZSL Native Species conservation programme.

ZSL is committed to pursuing new modes of learning, including those that embrace cutting-edge technology and extended learning beyond the visit to the Zoo itself.

ZSL London Zoo introduced a multimedia hand-held electronic Zoo guide – the Node. Piloting of this scheme continues. This represents ZSL's commitment to pursuing new modes of learning, including those that embrace cutting-edge technology and extended learning beyond the Zoo visit.

A climate-change exhibit was developed for *BUGS* in London. There were enhancements to the *Reptile House*, with new signage and amphibian-related interpretation in advance of the 2008 Year of the Frog.

A series of 'heritage' signs was developed, including those for ZSL London Zoo's old buildings (like the Raven's Aviary and Penguin Pool) and animal 'stars' (eg Guy the gorilla). These will be installed in 2008.

At ZSL Whipsnade Zoo, work began on the refurbished *Children's Farm*. There is an ongoing programme to improve the Zoo's animal signage with new 'who's who' graphics at the giraffe and hippo exhibits. A new large-scale series of animal-based and conservation-related labels are to be installed on the largest roadside paddocks.

New gate signage was installed at both sites to refocus gate donations from gorillas and rhinos to tigers (ZSL London Zoo) and cheetahs (ZSL Whipsnade Zoo).

Explainers and Volunteers

Explainers continued to add significantly to the visitor experience at both Zoos (at ZSL Whipsnade Zoo for the first time). Innovative new shows and events enhanced walk-through and other exhibits at both sites. Halloween and Christmas promotions attracted extra visitors. A major evaluation of visitor events showed that an informal style contributed significantly to visitor enjoyment, while giving pointers for future development. That investment in explainer works is illustrated by positive feedback ratings for ZSL Whipsnade Zoo's *Jumbo Express* – the scores far outstrip those of the previous year where the commentary was delivered by an external drama company.

The Society is fortunate in having the support of 400 volunteers, almost 300 of whom help interpret ZSL and its work to visitors. Others support keepers, the Library and Outreach Team. Retention levels are high – one third of volunteers have served more than five years, with 14% having served over 15 years. Typically, volunteers engage with visitors at exhibits like ZSL London Zoo's squirrel monkey walk-through and ZSL Whipsnade Zoo's lemur walk-through, as well as touch tables, craft activities and events like the Christmas event and Keepers' Little Helpers.



Events and Lifelong Learning

The whole ZSL London Zoo Education Team helped develop and deliver a Living Nativity event for primary schools. The trail was enjoyed by 5,990 children, generating a profit of £154,485.

A special Children's Day attracted 2,700 visitors to ZSL London Zoo – mainly families with disabled children who enjoyed the special touch tours.

Two adult learning courses, Animal Diversity and Ecology and Conservation, were undertaken over 10 weeks at ZSL London Zoo and attracted 43 students.

2008 and Beyond

ZSL aspires to being a world-class leader in discovery and learning about the natural world. During 2008 we will produce a Discovery and Learning Strategy that seeks

to unify learning across all of ZSL. We will continue to explore innovative ways of relaying conservation messages and providing learning environments for our many audiences, both internal (including staff, volunteers and visitors) and external.

ZSL's school programmes will be assessed for learning quality – we will use the unique resource of the sites (rather than classrooms) as far as possible. We will explore new ways of teaching.



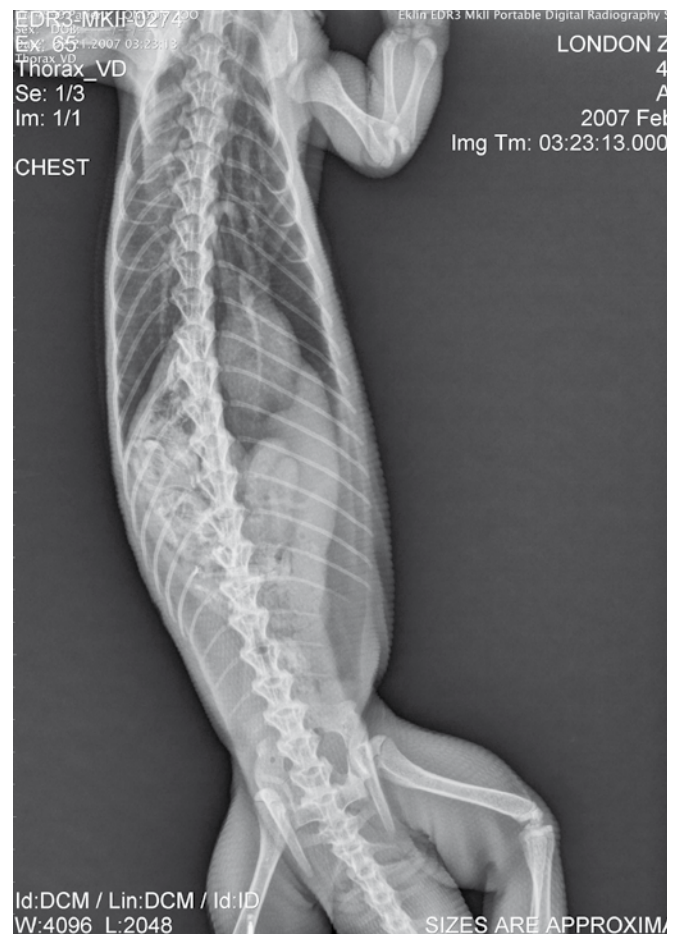
Visitors listening to a talk, and (below) an X-ray of a Komodo dragon on show in an exhibition on the work of ZSL people

We have developed new interpretation-led exhibits for 2008 – the *Blackburn Pavilion* at ZSL London Zoo, and *Cheetah Rock* and *Rhinos of Nepal* at ZSL Whipsnade Zoo. We are starting to design a new *Children's Zoo* for London to open in 2009. Explainer and volunteer activities will increase.

ZSL is also looking to expand and develop the ‘people’ components of its field conservation programmes, from mangrove fishers in the Philippines to poor communities in buffer zones around Nepalese national parks, from advocacy in Sumatra to scientific training in Mongolia.

ZSL is very grateful to the Mayor of London and Greater London Authority for continued support of its ZSL London Zoo schools and interpretation programmes. In 2007, this included ‘entitlement’ subsidy to give free admission to Greater London state schools, as well as piloting the Node hand-held multimedia interpretation.

ZSL aspires to being a world-class leader in discovery and learning about the natural world. During 2008 we will produce a strategy that seeks to unify learning across all of ZSL. We will continue to explore innovative ways of providing learning environments for our many audiences.





Financial Information

ZSL recorded a consolidated surplus on operations and an overall surplus, after minimal losses on the revaluation of investments, both of £3.5m. These compare with figures of £1.7m consolidated surplus on operations and £2m overall surplus achieved in 2006. There was no actuarial gain or loss on the Pension Fund (2006: £1.3m gain).

ZSL remains dependent on its two Zoos for the bulk of its income. In 2007, ZSL London Zoo visitor numbers were 1,108,541, an increase of 225,449 (25.5%) on the previous year. ZSL Whipsnade Zoo's visitor numbers were 475,622, an increase of 28,793 (6.4%) on last year. The total number of visitors for the two Zoos rose by 254,242 compared to 2006, reflecting the highest numbers for over 15 years.

Income figures benefited from Gift Aid recoveries on day membership, which amounted to just over £1.8m (2006: £1.6m).

Both the Institute of Zoology and conservation programmes maintained their revenues with new grants received in 2007, but these relate to specific projects and, whilst supporting the mission of the Society, they do not add to the overall surplus to fund future development.

Our costs rose, compared to 2006, in areas that included: utilities, maintenance, expenditure on staff, depreciation and revenue expenditure on new and existing facilities to improve the effectiveness of ZSL, as well as general wage and inflation rises.

The total capital spend of £7.9m (2006: £9.8m) included: completion of the new Easter 2007 exhibits, *Gorilla Kingdom* and *Clore Rainforest Lookout* at ZSL London Zoo and *In With the Lemurs* at ZSL Whipsnade Zoo, continued commitment to improving the Society's compliance to the Disability Discrimination Act (1995), its sustainability profile; and significant progress on the exhibits which opened in early 2008 – the *Blackburn Pavilion* at ZSL London Zoo and *Rhinos of Nepal* and *Cheetah Rock* at ZSL Whipsnade Zoo.

Despite stock market turbulence, the value of investments held in ZSL's Pension Fund has improved a little and the fund is still in a satisfactorily positive position. The pension scheme asset of £3.4m (2006: £3.2m) will be retained within ZSL's Pension Fund. The ZSL Trustees maintained funding at 12% in 2007 and over the next five years have agreed to take further steps to fund future liability levels. This is monitored by ZSL and the Pension Fund Trustees on a regular basis.

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, group statement of cash flows 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 Ernst & Young LLP and their audit report on them is unqualified. The full Trustees' Report and financial statements and Ernst & Young LLP's audit report on them were approved on 1 May 2008 and 2 May 2008 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 2 May 2008.

Paul Rutteman CBE BSc (Econ) FCA
Treasurer

Group Summarised Financial Statements

Summary group statement of financial activities for the year ended 31 December 2007

	Year to 31.12.07 £000	Year to 31.12.06 £000
Incoming resources		
Incoming resources from charitable activities:		
Animal collections	21,080	16,539
Science and research	4,170	4,023
Conservation programmes	1,018	940
Incoming resources from generated funds:		
Voluntary income	2,775	3,001
Activities for generating funds:		
Subsidiaries trading turnover	10,009	5,664
Other	12	97
Interest and investment income	843	822
Pension finance income	200	200
Total incoming resources	40,107	31,286
Resources expended		
Charitable activities:		
Animal collections	21,237	18,156
Science and research	4,710	4,765
Conservation programmes	2,062	2,124
Cost of generating funds:		
Costs of generating voluntary income	591	401
Fundraising trading:		
Subsidiaries' costs of goods sold and other costs	6,941	3,249
Other	865	735
Investment management costs	31	9
Governance costs	166	128
Total resources expended	36,603	29,567
Net incoming resources before other recognised losses and gains	3,504	1,719
Other recognised (losses)/gains:		
(Loss)/Gains on investments	(8)	306
Actuarial gain on pension scheme	-	1,300
Net movement in funds	3,496	3,325
Reconciliation of funds		
Total funds balance brought forward	46,671	43,346
Total funds balance carried forward	50,167	46,671

The above results are all in respect of continuing operations.

Group Summarised Financial Statements (continued)

Summary group balance sheet at 31 December 2007

	31.12.07 £000	31.12.06 £000
Fixed assets		
Tangible assets	32,294	27,342
Investments	<u>3,902</u>	<u>4,007</u>
	36,196	31,349
Current assets		
Stocks	485	380
Debtors	3,492	2,256
Cash at bank and in hand	<u>11,365</u>	<u>13,831</u>
	15,342	16,467
Creditors: amounts falling due within one year	<u>(4,697)</u>	<u>(4,268)</u>
Net current assets	10,645	12,199
Total assets less current liabilities	46,841	43,548
Creditors: amounts falling due after more than one year	<u>(74)</u>	<u>(77)</u>
Net assets excluding pension scheme asset	46,767	43,471
Defined benefit pension scheme asset	3,400	3,200
Net assets	50,167	46,671
Funds		
Unrestricted – General	37,673	35,220
– Designated	3,707	3,550
Restricted – Endowments	1,220	1,250
– Other	<u>4,167</u>	<u>3,451</u>
Total funds excluding pension asset	46,767	43,471
Unrestricted – Pension reserve	3,400	3,200
Total funds	50,167	46,671

Summary group statement of cash flows for the year ended 31 December 2007

	Year 31.12.07 £000	Year 31.12.06 £000
Net incoming resources before other recognised losses and gains	3,504	1,719
Add: Depreciation	<u>2,803</u>	<u>2,540</u>
	6,307	4,259
Less: Purchase of tangible fixed assets (net of disposals)	(7,838)	(9,755)
Less: Sale of fixed asset investments (net of purchases)	97	(20)
Changes in other assets and liabilities	(1,032)	2,499
Net cash outflow	(2,466)	(3,017)

INDEPENDENT AUDITORS' STATEMENT TO THE TRUSTEES OF THE ZOOLOGICAL SOCIETY OF LONDON

We have examined the group's summary financial statements for the year ended 31 December 2007, which comprise summary consolidated statement of financial activities, summary consolidated cash flow statement and summary consolidated balance sheet.

This report is made solely to the Trustees, as a body, in accordance with section 43 of the Charities Act 1993 and regulations made under section 44 of that Act. To the fullest extent required by the law, we do not accept or assume responsibility to anyone other than the Trustees, for our audit work, for this report, or for the opinions we have formed.

Respective responsibilities of Trustees and Auditors

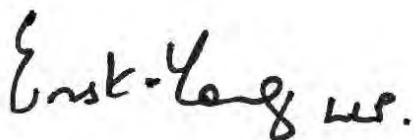
The Trustees are responsible for preparing the summarised financial statements in accordance with applicable law. Our responsibility is to report to you our opinion on the consistency of the summary financial statement within the summarised financial statements, with the full annual financial statements, which were approved by the Trustees on 1 May 2008 and on which we signed our audit report on 2 May 2008.

Basis of opinion

We conducted our examination in accordance with Bulletin 1999/6 'The Auditors' statement on the summary financial statement' issued by the Auditing Practices Board. Our report on the group's full annual financial statements describes the basis of our audit opinions on those financial statements.

Opinion

In our opinion the summary financial statement is consistent with the full annual financial statements of The Zoological Society of London for the year ended 31 December 2007 and complies with the applicable requirements of section 43 of the Charities Act and regulations made under section 44 of that Act.



Ernst & Young LLP
Registered Auditor
London
2 May 2008



Thank you for your support

Sincere thanks to all our supporters, Friends, Fellows and volunteers for their continued commitment to ZSL's work throughout the year. With donations from companies, trusts and individuals, the loyalty of our Friends and Fellows, and the work and time our volunteers have devoted to ZSL, we continue to strive towards our conservation goals. Without such support, our accomplishments would not have been possible. We would also like to thank our Fellows and friends of the Barlow family, who have supported the Erasmus Darwin Barlow Expedition Fund; the first of its kind for ZSL.

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21st Century Tiger
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AMUR
Antwerp Zoo
Amphibian Specialist Group, IUCN
Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA)
Conservation Fund
Bat Conservation International
British Andrology Society
British Antarctic Survey
British Ecological Society
British Herpetological Society
British Wildlife Health Association
Cambridge Infectious Diseases Consortium
Centre for Ecology and Evolution

Supporters' impact on ZSL 2007

The support we received from our donors in 2007 has had an enormous impact on ZSL's ability to deliver its mission of conservation and education. We are proud to present some of the highlights of 2007.



January 2007

The launch of EDGE of Existence was attended by over 80 guests, and has started to receive donations to support its conservation work, as well as enormous media coverage.

March 2007

Gorilla Kingdom was opened by HRH The Duke of Edinburgh. The exhibit was made possible with the support of a generous legacy from Delene Welch, a former volunteer at ZSL London Zoo, and significant grants and donations from the Mayor of London, the Garfield Weston Foundation and John Lyon's Charity.



May 2007

The *Clore Rainforest Lookout* was opened by Dame Vivien Duffield. The Clore Duffield Foundation contributed £1m towards the exhibit.

June 2007

The BBC's Saving Planet Earth appeal featured Will Young's visit to ZSL's conservation project related to the western lowland gorilla in Gabon. The BBC has supported three ZSL conservation projects through its Wildlife Fund.



September 2007

The Patrons' Breakfast was supported by the Ruis family and was attended by over 60 guests.

October 2007

The Mitsubishi Corporation Fund for Europe and Africa's support enabled the development of a new climate-change exhibit in *BUGS* at ZSL London Zoo.

November 2007

A dinner at the House of Lords hosted by Lord Moser presented plans for the new Children's Zoo and secured two major pledges of support.



December 2007

An event at ZSL London Zoo involved 50 managers from KPMG in helping ZSL develop its approach to engaging oil palm producers in conservation. The company also made a donation to ZSL's tiger conservation project in Sumatra.



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 Census of Marine Life
 Chinese Academy of Sciences
 Columbus Zoo
 Copenhagen Zoo
 Dreamworld Australia
 Exotic Feline Breeding Compound
 European Herpetological Society
 European Union of Aquarium Curators (EUAC)
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Pauline Hartford
James Harvie Mackay
Stephen Jack Newson
Constance Nutkins
Joan May Preece
Delene Welch

ZSL would also like to thank all our supporters who wish to remain anonymous.

Patron

Her Majesty The Queen

Council members/trustees

The following were Council members at 24 April 2008 or served during the year to 31 December 2007.

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