

The Zoological Society of London

Trustees' Report and Financial Statements

31 December 2012

Registered Charity No. 208728

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1. Trustees' Report 31 December 2012

The Trustees are pleased to submit this report and the financial statements for the year to 31 December 2012. Further information about the Society's activities is given in a separate document, Zoological Society of London Annual Review ('Annual Review'), which can be obtained from the Finance Director or online from www.zsl.org.

Objectives of the Society and Mission Statement

The objectives of the Zoological Society of London (ZSL), also referred to in this report as 'the Society', 'the Charity' and 'the Zoos', as set out in its Charter, are: 'The advancement of zoology by, amongst other things, the conducting of scientific research, the promoting of conservation of biological diversity and the welfare of animals, the care for and breeding of endangered and other species, the fostering of public interest, the improvement and dissemination of zoological knowledge and participation in conservation worldwide.'

In shaping our objectives for the year and planning our activities, the Trustees have considered the Charity Commission's guidance on public benefit, including guidance on public benefit and fee charging. Initiatives include educational visits at heavily discounted prices, free visits as part of the Junior Citizen initiative and Special Children's Day at discounted prices. We also fund and run a world-renowned zoological library, with open access at no charge.

Our Vision

Is of a world where animals are valued and their conservation assured.

In addition, the Society has adopted a Mission Statement, which reads:

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

Guiding Principles

In carrying out its mission, ZSL has adopted five guiding principles:

- 1. Respecting and valuing animals and the natural world.**
Our belief is that a diverse and healthy natural world is valuable in its own right and is essential for ensuring secure and healthy lives for people. This motivates ZSL's vision and mission, and our other core values follow from this.
- 2. Inspiring conservation action.**
We seek to motivate others to take conservation action in their daily lives.
- 3. Achieving excellence in our field.**
Building on our heritage, Royal Patronage since 1831 and reputation as a learned society, we aim to be an authoritative source of information and good practice for the scientific study, conservation and husbandry of animals; and to make efficient and effective use of available resources to achieve the highest possible standards in everything we do in the operation of a successful and innovative conservation organisation.
- 4. Acting ethically, responsibly and sustainably.**
We aim to operate in fair and justifiable ways that do not conflict with our mission/objectives and which respect the environment.
- 5. Valuing everyone we work with.**
We support and value teamwork and collaboration, strive for fair and equitable treatment of everyone with whom we work and come into contact, and aim to act with respect and courtesy in all our dealings.

Strategic Aims

ZSL pursues its mission with five key strategic aims:

1. To undertake and promote relevant high-quality zoological and conservation research, to help us achieve our conservation objectives and to inform and influence conservation policy.

ZSL will achieve this strategic aim by:

- Encouraging and rewarding excellence in the performance and communication of science, conservation and animal husbandry
- Using our unique convening role as a leading learned society to foster and achieve international excellence in science relevant to our core conservation priorities
- Managing and developing a relevant and useful body of zoological knowledge
- Attracting and engaging a diverse range of people and organisations in the science of zoology and conservation – from students to leaders in their field
- Raising the profile of conservation issues and priorities and ensuring they are well represented at policy level and in the media
- Providing policy makers, conservationists and the general public with the information needed to make informed decisions on conservation issues.

2. To encourage and motivate all our stakeholders to support and engage in conservation.

ZSL will achieve this strategic aim by:

- Enabling and inspiring all ZSL's staff, students and volunteers to become ambassadors for our conservation mission
- Ensuring that all visitors have an enjoyable, inspiring and educational experience
- Communicating science-based conservation messages
- Improving and developing our contributions to the education and conservation awareness of groups of all ages and to education providers
- Raising and maintaining our profile amongst target audiences
- Using our research and field activities to inspire and educate people about conservation
- Enhancing the value delivered to ZSL members.

3. To implement and achieve effective and appropriate 'in situ' and 'ex situ' conservation programmes for priority species and habitats.

ZSL will achieve this strategic aim by:

- Ensuring that conservation efforts are informed by the best science
- Developing and applying objective criteria for setting priorities for our conservation activities
- Measuring conservation efforts and evaluating their outcomes to enable more effective management
- Developing our own and others' capabilities, expertise and resources in order to build capacity in zoology and conservation
- Predicting, prioritising and responding effectively to new conservation issues
- Engaging and working with communities in support of conservation and sustainable livelihoods
- Working with other organisations and across disciplines to achieve our common conservation objectives
- Working with government and industry in support of conservation.

4. To lead and deliver exemplary Zoos to advance ZSL's mission.

ZSL will achieve this strategic aim by:

- Inspiring our visitors through world-class animal exhibits that are linked to science and conservation
- Evaluating all our activities to inform a visitor charter committed to excellence in customer satisfaction
- Implementing and surpassing globally recognised standards in our Zoos
- Ensuring and promoting best practice in the welfare of Zoo animals and delivering conservation breeding
- Integrating and maximising the conservation and research contribution of the Zoos to ZSL
- Maximising the unique learning and enabling opportunities that our Zoos offer across all sectors of the Society
- Using our Zoos to increase the financial contribution ZSL makes to science, conservation and education.

5. To further ZSL's mission by maximising opportunities to generate funds.

ZSL will achieve this strategic aim by:

- Making continued investment in our sites and infrastructure
- Developing our Business acumen
- Developing innovative opportunities to generate revenue
- Building up and extending our supporter base
- Raising our charitable profile to increase funding to ZSL
- Using ZSL assets and resources to generate funds within the framework of a registered charity.

Plans and Objectives for the Year 2012

These plans, set within our overall aims and objectives, and the activities undertaken to achieve them, are set out below:

1. By raising our charity profile and improving our customer service in our Zoos we will maximise our opportunities to generate funds while further striving to improve our cost efficiency in these difficult economic circumstances.

Animal collections

- Another strong year for visitors to our Zoos, despite facing various challenges such as seeing some of the wettest months on record, the Olympics and the continued economic downturn.
- VAQAS (Visitor Attraction Quality Assurance Scheme) once again awarded both London and Whipsnade Zoos their Quality Assurance Mark. Areas of specific mention include our live demonstrations, good customer service and strong marketing, including the ZSL website, which has improved year-on-year.
- Elefantasia (Whipsnade Zoo): building on the success of Elephant Appreciation Weekend, we created a charity event incorporating all things Asian. The team fund raised over £10,000 for medical research (£3,000 more than in 2011).

Communications

- Broadcast of ITV1's *The Zoo* documentary included stories about the charity aspects of our work and helped communicate the link between zoos, field conservation and science.
- The launch of a new series of children's books included a message about our charity status in every copy.
- New graphics at London Zoo main gate aim to make visitors more aware of our charitable status and ways they can help.
- In the high-profile Penguin Beach Live, our presenters provide an insight into the work of ZSL, including how their visit to the Zoo helps the charity.

Admissions

- In 2012, the Admission Teams maximised the opportunities in Gift Aid and Admissions. New signage was introduced at the main gate in London to give clear messages to our visitors, and help to raise awareness of our Charity status.

Trading

Catering – Whipsnade Zoo

- An excellent performance in overall key performance indicators (KPIs), with profits and visitor spends up against budget despite lower visitors. The department performance has been assisted with some key refurbishments and the opening of Hullabazoo café. Spend per head was up on budget and 2011. All our high health, safety and food standards have been maintained as recognised by the Environmental Health Officer and we have been shortlisted for a national award for our sustainable catering products and practices.
- New decking and windows to increase indoor seating capacity at Wild Bite Café has enhanced the visitor experience. The Lookout café refurbishment has been a success in upgrading the overall experience, the increased trading periods during the winter weekends and holidays has increased sales and we also met the overnight experience guest's expectations.
- Another poor year in terms of achieved sales levels for our Conference and Banqueting business and with the high fixed costs the operation has made a loss this year. There are many reasons for this and we do not believe that we have a sustainable business case in this area. Therefore the decision was made in early January 2013 to close the function business at the end of 2013.

Catering – London

- A very challenging and exciting year in Day Visitor Catering (DVC) for 2012. In June this year, Council approved a major refurbishment with capital expenditure of £4.4 million on the Regent building to provide new catering facilities for the visitors.

- While all the design work was being carried out we also tendered out the catering operations from being managed by a ZSL team. Ampersand are the new catering contractors and all staff transferred over from 1 October. The closure of the restaurant by 1 December for nine months necessitated a temporary solution for visitors and staff; therefore a temporary marquee was erected on the main lawn. The catering offer has been improved through Ampersand's expertise and resources.
- On Conference and Banqueting, a year for consolidation for the team: their first full year of fully managing the business, in a tough economic climate for corporate entertaining. Standards have been maintained and the Key Performance Indicators have all been achieved, with 95% of clients rating the overall catering experience as very good or excellent.
- The sales and marketing plan from Ampersand's own company agents "it's the Agency" for London Zoo has proved successful in gaining new business and achieving higher levels of free advertising in top trade journals.
- Christmas 2012 had an increase of 45% on last year's number of events and covers, and London Zoo was one of CH&co's top performers.

Retail

- The Retail Team continue to drive our "bag for life" as a means to spread the ZSL name to a wider audience. Over 33,000 were sold in 2012.

Voluntary income

Membership and fundraising

- More high-profile charity events took place in 2012:
 - The London Zoo Stampede, a 10k run in London Zoo and Regent's Park was introduced and sold out, with 1,000 runners taking part and fundraising for ZSL.
 - A comedy fundraiser at Hammersmith Apollo supported by Greg Burns, Ed Byrne, Phill Jupitus, Andy Parsons, Jon Richardson, Richard Herring, Sarah Kendall and Lucy Porter took place in October.
 - A Fundraising Gala was held in support of ZSL and the Zeitz Foundation, hosted by Usain Bolt, and raised £250,000 on the night and was generously supported by high-profile artists, donors and companies.
- By focusing on increasing the charity profile of ZSL we are now listed in the top 105 charities in the UK.
- Our Corporate Team continued to engage with businesses at many levels introducing new and exciting partnership opportunities:
 - For the second year running, Barclays provided a contribution of time and funding towards Special Children's Day at ZSL London Zoo. Our commitment to meeting additional needs, combined with the incredible sights and sounds at ZSL London Zoo, make Special Children's Day an uplifting experience for all involved.
- The PR Team engaged celebrities to become involved in fundraising events, such as the Fire Walk, which helped generate coverage about our charity status.
- PR played a key role in raising our charity profile, which has resulted in ZSL being listed 83rd in the Harris Interactive 'Top Charity Brands' – a first for ZSL.
- *Wild About* magazine continued to inform and inspire readers about ZSL's charity work and the inclusion of a new fundraising page encouraged members to further support us.

2. We will continue our commitment to performing high-quality scientific research to help understand how the natural world works, and to provide a rigorous scientific underpinning for conservation policy and practice.

Animal collections

- Our Zoological Department research strategy, procedural and recording protocol, has helped us to prioritise and support our research work as identified by curators, vets and Discovery and Learning colleagues. A total of 64 projects were authorised. The vast majority are undergraduate students carrying out dissertations based on behavioural observations. Some examples include: investigating the public and animal interactions in the squirrel monkey walkthrough enclosure, oryx body conditioning at Whipsnade, lick sores in lemurs, interactions within the gorilla group with composition changes, and young seahorse growth rates. Some projects involve the use of samples, for example penguin blood for malarial research.
- Zoo Lates Welfare Audit. For the 2012 Welfare Audit nine focus species were chosen. Behavioural observations were made on eight of these by external students and zoo staff to investigate whether the 'Zoo Lates' had any effect on behaviour as compared to control nights, which could represent a welfare concern. Observations were made according to a standardised format. Seven of these species had faecal samples collected daily throughout the run to determine cortisol levels and investigate whether these related to Zoo Lates events and the animals' behaviour. A Preliminary Report was completed and presented at the Animal Welfare Committee meeting in November. Although many of the

students have not yet completed their dissertations, all were interviewed and provided preliminary summary reports describing trends the data appear to show (to be statistically tested when students complete their write-ups). The Animal sections were interviewed and provided feedback on any issues or concerns that were noted throughout the zoo run. Potential mitigation measures have been suggested. The results of the faecal cortisol analysis arrived in late December and have yet to be analysed by Vet Hospital staff. The final report will include the faecal cortisol results and the students' final write-ups.

- We continued to develop our leadership of the zoo community-based mosquito monitoring initiative Project MOSI. This included trapping and identification of specimens, and liaising with the research collaborators to increase our ability to determine what species the mosquitoes are feeding on and any disease profiles that trapped mosquitoes may have, along with any behavioural changes or new species becoming established.
- Aquarium-based projects included a project on short-snouted seahorse fry survival and growth rates to assist with both captive rearing and wild study in seahorses – a study looking at amino acid bait trials as a fish attractant for assessing wild populations of reef species in the Chagos Archipelago, and a project on the international trade in EDGE coral species from Indonesia.

Science and research

- Media coverage about our scientific research not only allowed us to raise awareness about this important work, but helped to strengthen funding proposals.
- We continue to provide high-quality scientific research to benefit conservation. Evidence of this is provided in our output of peer-reviewed scientific papers, especially in journals with higher impact factors (>5). In 2012, there were 26 papers published in journals with an Institute for Scientific Information (ISI) -listed impact factor >0 to 2, 71 >2 to 5, 29 >5 to 10, and 9 > 10. These compare with 2011 figures of 31 papers published in journals with an ISI-listed impact factor >0 to 2, 53 >2 to 5, 15 >5 to 10, and 3 >10. The total figure of publications in ISI-listed journals for 2012 was 135, compared to 102 in 2010.
- Grant income to support our work has also increased in 2012 over previous years, with Research Council, UK government (mainly Defra), and EU-funded grants increasing quite substantially on the previous year. The total external grant annual income increased on the previous year. This is mainly due to the increase in Research Council grant income for the period. This indicates that we are continuing to do work of relevance to research funders in our areas of expertise.

3. Our scientific priorities for the coming year continue to include wildlife health and disease and our core contributions to biodiversity indicators, which will be particularly important for our input at the Rio+20 United Nations Conference on Sustainable Development and World Conservation Congress. Following the outcome of the Higher Education Funding Council for England review of funding to the Institute of Zoology, a priority will be to continue strengthening the links with our new partner, University College London.

Science and research

Wildlife health and disease

Our work on wildlife health and disease is mainly carried out by our Wildlife Epidemiology Research Team, which aims to identify where disease is a threat to wildlife conservation, either as a primary cause of species declines or as a threat to remnant wildlife populations. The Research Team also aims to investigate the emergence of disease as a conservation threat and develop an understanding of the consequences of changes in wildlife disease epidemiology; both to wildlife conservation and welfare and to human health and welfare, particularly where these changes are driven by anthropogenic forces. Highlights in the past year include:

West Nile Virus vector competency of mosquitoes in the Galapagos Islands

West Nile Virus (WNV) is a mosquito-borne flavivirus that has spread rapidly across the Americas during the past decade. Thus far it has not emerged in the Galapagos Islands of Ecuador – a UNESCO World Heritage Site with many endemic species of wildlife. Since the virus infects a wide range of vertebrate hosts, including reptiles, and is associated with the decline of several North American bird populations, there is concern about the impact that WNV could have on the fauna of Galapagos. There was strong incentive to investigate how mosquitoes currently established in Galapagos might interact with WNV, for example could the mosquitoes act as a vector for this novel pathogen. We experimentally infected field samples of *Culex quinquefasciatus*, a mosquito that established in the region approximately 30 years ago. This enabled us to study what happens when the mosquito takes an infected blood-meal and the subsequent likelihood of WNV transmission to new hosts bitten. Such 'vector competency' was assessed using the WN02 virus clade, with the effect of temperature examined by incubating mosquitoes at either 27°C or 30°C prior to testing groups at various time points

post-exposure. The results showed that *C quinquefasciatus* has a moderate ability to be a WNV vector; its competence being comparable to US strains of this mosquito. Rates of infection, dissemination and transmission all increased with time post-exposure to WNV, and after 28 days, 44% of mosquitoes tested could transmit the virus. Vector efficiency (ie the proportion of basic ingested infections that result in salivary transmission ability) increased from 14 days. Temperature significantly increased the proportion of mosquitoes infected, but not their transmission of WNV, thus we found limited indication that there would be seasonal differences in transmission. We demonstrate that Galapagos *C quinquefasciatus* is a competent WNV vector, and therefore should be considered an animal and public health risk for the archipelago and controlled wherever possible. Future steps will examine further species of mosquito in Galapagos, and their biting behaviour, to help determine whether WNV would circulate in this important conservation region.

Eastwood, G, Kramer, LD, Goodman, SJ, and Cunningham, AA (2011), 'West Nile Virus vector competency of *Culex quinquefasciatus* mosquitoes in the Galapagos Islands. *American Journal of Tropical Medicine and Hygiene* 85: 426-433.

Multiple emergence of genetically diverse amphibian-infecting Batrachochytrium dendrobatidis

Since the discovery of the amphibian-infecting pathogenic fungus *Batrachochytrium dendrobatidis* (Bd) during the 1990s, it has been found on every continent on Earth except Antarctica, and is responsible for dozens of extinctions and local extinctions. One of the puzzling aspects of the disease has been the extremely high genetic similarity found between isolates from diverse habitats worldwide. We examined the genomes from a global panel of Bd isolates both from amphibian habitats experiencing die-offs (such as the recent mountain chicken *Leptodactylus fallax* epizootic on Montserrat), and others that only harboured the disease. By doing so, we identified three separate and divergent lineages that we have named BdGPL, BdCAPE and BdCH. Our data show that BdGPL is the most common lineage (found on all five continents we tested) and also the type associated with mass-mortalities and extinction. We therefore called this lineage the Global Panzootic Lineage. BdCAPE is also found in more than one continent, and BdCH only in Switzerland. BdGPL uniquely has features within the genome that may have resulted from hybridisation between two parental strains. Both BdGPL and BdCAPE have been spread via trade in amphibians: once by accidental cohousing in a zoo (BdCAPE), and the other transported many times by international trade (BdGPL). Our study highlights the urgent action required to prevent future panzootics, which may require new measures to prevent transmission of infectious diseases. As for many other threatened species, tightening the biosecurity associated with trade is key to preventing accelerated evolution and spread of hyper-virulent diseases in the future.

Farrer, RA, Weinert, LA, Bielby, J, Garner, TWJ, Balloux, F, Clare, F, Bosch, J, Cunningham, AA, Weldon, C, du Preez, LH, Anderson, L, Pond, SLK, Shahar-Golan, R, Henk, DA, and Fisher, MC (2011), 'Multiple emergences of genetically diverse amphibian-infecting chytrids include a globalised hyper-virulent recombinant lineage', *Proceedings of the National Academy of Sciences of the United States of America* 108: 18732-18736.

Evidence of the spread of emerging infectious disease in migrating birds

Trichomonas gallinae is a protozoan parasite that is well-known as a cause of the disease trichomonosis in pigeon, dove and raptor species worldwide. The parasite emerged as a novel infection of British songbirds in 2005, leading to epidemic mortality associated with significant declines of breeding populations of greenfinches *Carduelis chloris* and chaffinches *Fringilla coelebs* in the central and western counties of England in 2006. Sequence data and platform-based multilocus typing tools confirm that a single clonal strain of *T. gallinae* is the causative agent of this emerging infectious disease. Continued epidemic spread of the disease, with a pronounced shift in geographical distribution towards eastern England, occurred in 2007. This was followed by international spread to southern Fennoscandia, where cases were confirmed at multiple sites in the summer of 2008, once again affecting finch species with similar signs of disease. Sequence data showed no variation between the British and Fennoscandian parasite strains. Epidemiological and historical ring return data support bird migration as a plausible mechanism for the observed pattern of disease spread, and suggest the chaffinch as the most likely primary vector. We believe this to be the first documented case of the spread of a protozoal-emerging infectious disease by migrating birds. Seasonal epidemic mortality due to finch trichomonosis continues to occur in the late summer months of each year in Great Britain. Both the greenfinch and chaffinch have large and widespread populations across Europe and into Russia. Continued disease surveillance, in combination with census monitoring, is required to determine the impact of this emerging infectious disease on European finch populations.

Lawson, B, Cunningham, AA, Chantrey, J, Hughes, LA, John, SK, Bunbury, N, Bell, DJ, and Tyler, KM (2011), 'A clonal strain of *Trichomonas gallinae* is the aetiologic agent of an emerging avian epidemic disease', *Infection, Genetics and Evolution* 11: 1638-1645.

Lawson, B, Robinson, RA, Neimanis, A, Handeland, K, Isomursu, M, Agren, EO, Hamnes, IS, Tyler, KM, Chantrey, J, Hughes, LA, Pennycott, TW, Simpson, VR, John, SK, Peck, KM, Toms, MP, Bennett, M, Kirkwood, JK, and Cunningham,

AA (2011), 'Evidence of spread of the emerging infectious disease, finch trichomonosis, by migrating birds', *EcoHealth* 8: 143-153.

- A key PR success for the Wildlife Health and Disease Team was extensive coverage about an avian pox paper being published.

Biodiversity indicators

Global environmental agreements such as the Convention on Biological Diversity (CBD) have set stringent goals for biodiversity conservation. Scientifically robust biodiversity indicators are required to track progress towards these goals and define the status and trends of biodiversity; the Indicators and Assessments (IAU) unit was formed in 2006 for this purpose. The unit is a joint Institute of Zoology and Conservation Programmes initiative, and comprises around 20 staff and students. This year, work has expanded to build novel understanding of wildlife population dynamics in the Arctic, develop new methods for forecasting impact on wildlife of changes in the environmental policy, and understanding how robust our comprehension of invertebrate biodiversity patterns is in the context of data uncertainty. Many of the projects are providing science to inform global biodiversity policy for the CBD 2020 strategic plan.

Arctic wildlife responses to climate and land-use change

The polar regions are places of compelling beauty, and are home to some of the world's most charismatic wildlife. However, rapid changes in climate occurring at the poles, and the accelerating rate of resource exploitation in these unique polar ecosystems, are adversely impacting wildlife populations. Working with the Conservation of Arctic Flora and Fauna's (CAFF) Circumpolar Biodiversity Monitoring Programme (CBMP) in the Arctic, we have developed new means to understand the temporal and spatial dynamics of Arctic populations. Arctic species are suffering mixed fortunes, with declining trends particularly evident for those species dependent on sea ice. A focus on marine populations uncovered recent declines in the Bering Sea and Aleutian Islands for seven mammal species (beluga whale *Delphinapterus leucas*, Steller sea lion *Eumetopias jubatus*, harbour seal *Phoca vitulina*, sea otter *Enhydra lutris*, Pacific walrus *Odobenus rosmarus*, northern fur seal *Callorhinus ursinus*, grey whale *Eschrichtius robustus*); threats responsible include overharvesting, increased predation, loss of summer sea ice and depleted prey resources. We also explored the use of spatial techniques to identify environmental and climatic drivers of biodiversity change, and were able to identify gaps in monitoring throughout the Arctic region. In conjunction with CBMP, these results are being used to inform monitoring and policy decisions in the Arctic.

McRae, L, Gill, M, Bohm, M, Deinet, S, and Collen, B (2012), 'The Arctic Species Trend Index: using vertebrate population trends to monitor the health of this rapidly changing ecosystem Biodiversity (in press)'.

B.hm, M, McRae, L, Deinet, S, Gill, MJ and Collen, B (2012), 'Tracking trends in Arctic vertebrate populations through space and time', CAFF Assessment Series No 8 *Conservation of Arctic Flora and Fauna, Iceland*.

Gill MJ, Zöckler C, McRae L, Loh J, and Collen B (2011), 'The Arctic Species Trend Index: A barometer for Arctic wildlife' in *State of the Arctic Coast 2010: scientific review and outlook* (Forbes, DL (Ed)), International Arctic Science Committee, Land-Ocean Interactions in the Coastal Zone, Arctic Monitoring and Assessment Programme, International Permafrost Association, Germany.

Integrating uncertainty into conservation decisions

The conservation status of an ever-greater number of species is being assessed using tools for evaluating extinction risk, such as the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Baseline biodiversity data are important to understand how humans are impacting biodiversity, enable proactive conservation decision-making, and are the focus of Indicators and Assessments Unit projects, such as the sampled approach to Red Listing. However, the extent to which data from these new groups of species changes our understanding of macroecological patterns such as distribution threat, and thus our response to conservation problems, remains untested. Global priorities for biodiversity conservation have been largely biased towards vertebrate species and terrestrial ecosystems, and an understanding of the drivers of extinction risk in freshwater invertebrates will therefore contribute to a more accurate picture of biodiversity. However, the high levels of data uncertainty in IUCN Red List assessments for freshwater invertebrates could bias the results of broad-scale studies based on these assessments. The Data Deficient (DD) category is assigned to a species when there is inadequate information to make an assessment of its risk of extinction. To date, all invertebrate taxa with systematic risk assessments show high proportions of DD species: 35% of dragonflies and damselflies, 49% of freshwater crabs and 21% of crayfish are currently listed as DD. Vertebrate groups are typically better known. Our findings demonstrated that the three taxonomic groups we looked at showed considerable differences not only in distribution of extinction risk, but also in the influence of data uncertainty on

those distributions. Global patterns of extinction risk, and therefore our understanding of the plight of threatened species in those groups, were not only dependent on the absolute number of DD species in the taxon, but also on the distribution among families and realms of these DD species. Broadening the coverage of biodiversity assessments to under-studied taxa and systems is essential to developing a more representative picture of biodiversity. Our study shows that despite recent efforts towards achieving this goal, high levels of data deficiency challenge the integration of these assessments into conservation decision-making and supports the need for increased efforts in invertebrate study and conservation.

Bland, LM, Collen, B, Orme, CDL, and Bielby, J (2012), 'Data uncertainty and the selectivity of extinction risk in freshwater invertebrates', *Diversity and Distributions*, DOI: 10.1111/j.1472-4642.2012.00914.x

Informing policy decisions

To influence global environmental policy effectively, conservation scientists need to be able to provide robust predictions of the impact of alternative policies on biodiversity and measure progress towards goals using reliable indicators. In response to the CBD's 2010 target of significantly reducing the rate of biodiversity loss, we helped develop two biodiversity indicators: the IUCN Red List of Threatened Species (which monitors change in extinction risk) and the Living Planet Index (which tracks changes in population abundance). Both are used to good effect to inform policy makers about how biodiversity is changing. However, to date, they have not been used in a predictive framework. With Emily Nicholson (University of Melbourne) and EJ Milner-Gulland (Imperial College London), we developed a framework for using biodiversity indicators predictively to inform policy choices at a global level. We used two case studies to illustrate the approach, in which we projected the impacts of feasible policies on trends in biodiversity and tried to pick up the impacts in relevant indicators. The policies were based on targets agreed at the CBD for 2020. In the first case study we compared protected area policies for African mammals, assessed using the Red List Index; in the second example we used the Living Planet Index to assess the impact of a complete halt, versus a reduction, in bottom trawling. We found that under our scenarios of expansion, and increasing protected area effectiveness, biodiversity indicators can aid in decision-making and are able to differentiate between the impacts of the different policies. Overwhelmingly, it appears that increasing the effectiveness of protected area management will have a far greater positive impact on wildlife trends, than merely increasing the size of protected areas. Our results are a first attempt to use predictive models and indicators to credibly track trends and inform policy. To be useful and relevant, scientists must make testable predictions about the impact of global policy on biodiversity to ensure that targets such as those set by the CBD catalyse effective and measurable change. Nicholson, E, Collen, B, Barausse, A, Blanchard, J, Burn, B, Costello, B, Fritz, S, Jones, J, McRae, L, Possingham, H, Sullivan, K, Underwood, F, and Milner-Gulland, EJ (2012), 'Making robust policy decisions using global biodiversity indicators', *PLoS One*, 7: e41128.

Armenteras, D, Finlayson, M, Rosser, A, Walpole, M, Agard, J, Butchart, S, Carino, J, Collen, B, Firbank, L, Galli, A, Gokhale, Y, Hocking, M, Hoft, R, Kitzes, J, Prip, C, Redford, KH, McGeoch, M, Oldfield, T, and Toivonen, H (2012), 'Biodiversity', *Global Environmental Outlook 5* (ed by GEO-5), United Nations Environment Programme.

Links with University College London (UCL)

In terms of our links with UCL, the Institute of Zoology (IoZ) has for some time now had strong links with the Biological Anthropology department there, on the basis of close working relationships between Katherine Homewood and members of the IoZ Behavioural and Population Ecology Team. However, the relationship between IoZ and our official partner department (Genetics, Evolution and Environment, or GEE) before the formal affiliation was relatively weak. We have therefore taken steps in the past year to strengthen ties between IoZ and GEE in particular.

In terms of the affiliation, the following measures have been taken to promote closer integration between IoZ and GEE:

- The Director of IoZ and Head of GEE have regular meetings together to discuss joint strategy and developments.
- The Director of IoZ attends UCL Faculty of Life Sciences Board meeting.
- The Director of IoZ attends UCL Research Excellence Framework (REF) meetings as an observer.
- IoZ Senior Team attended GEE Awaydays at Cumberland Lodge, presented on our work, contributed to planning discussions, made several useful contacts.
- UCL staff are invited to IoZ science and student conferences.
- Reciprocal advertising of seminars and events.

In terms of generating closer scientific collaboration:

- Kate Jones is now appointed as joint position between GEE/UCL and IoZ/ZSL. Kate is identifying a range of opportunities, including meet, greet and solve biodiversity and conservation stats problems workshops with the Centre for Computational Statistics and Machine Learning, and is the partner on two recently awarded Beams Innovative Modelling of Museum Pollutants and Conservation Thresholds (IMPACT) studentships with ZSL.

- A second joint position is planned.
- UCL and ZSL involved in joint Masters Research Degree, along with the Natural History Museum, which started in October 2012.
- UCL and ZSL likely to partner in a Natural Environment Research Council Doctoral Training Partnerships (DTP) bid, along with other London organisations. Current PhDs to be bundled with a DTP if appropriate.
- IoZ staff informed about IMPACT and Centre for Mathematics and Physics in the Life Sciences and Experimental Biology (CoMPLEX) opportunities. Two IMPACT studentships have been awarded this past year.
- IoZ staff invited to CoMPLEX seminar day – Tim Blackburn and Kate Jones attended. Tim Blackburn was able as a result to put Heather Koldewey in touch with Robin Freeman at CoMPLEX.
- UCL and IoZ continue to be partners in the Centre for Ecology and Evolution.

The actions are definitely generating new collaborations (for example three new PhD studentships with GEE), plus ongoing discussions, including with Francois Balloux about amphibian genomics work, and Heather Koldewey with Dr Robin Freeman at CoMPLEX about tracking pelagic organisms.

Currently, we have the following joint projects with UCL registered as 'live' at IoZ. Those highlighted are with GEE – we can see that the links to GEE have started to grow since the formal affiliation.

<i>Project title</i>	<i>Start date</i>	<i>ZSL supervisor</i>	<i>Type</i>
Acoustic monitoring of pelagic populations in the Chagos	2 Oct 2012	Koldewey, Heather	PhD
A global study of the richness, spread and impacts of exotic birds	2 Oct 2012	Blackburn, Tim	PhD
Prayer Animal Releases in Taiwan: an analysis of an Eastern pathway to biological invasions	2 Jan 2012	Blackburn, Tim	PhD
Phenotypic plasticity in tropical paper wasps	2 Dec 2011	Sumner, Seirian	PhD
Assessing the cultural and biological values of large highland lakes in Papua, Indonesia	2 Oct 2011	Collen, Ben	PhD
Addressing information needs for cheetah – preventing current declines and identifying recovery areas	2 Oct 2011	Durant, Sarah	PhD
Mobile gaming, citizen science and biodiversity	2 Oct 2011	Pettorelli, Nathalie	PhD
Primates of the Caribbean: using historical-era introductions of monkeys in the Lesser Antilles to understand rates of island evolution	2 Oct 2010	Turvey, Samuel	PhD
Human/wildlife conflict, wellbeing and economic opportunity: coexisting with carnivores in the Gobi Desert	2 Oct 2010	Durant, Sarah	PhD
Climate change, drought impacts and the coexistence of people and large predators in East African rangelands	2 Oct 2010	Durant, Sarah	PhD
Ecological and behavioural constraints on recovery of small populations: the Hainan gibbon as a conservation case study	2 Mar 2010	Turvey, Samuel	PhD
Social and ecological dynamics of the bushmeat trade: commodity chains and sustainability	19 Sep 2003	Cowlishaw, Guy	PhD
Biodiversity, ecosystem services, social sustainability and tipping points in African drylands	2 Sep 2010	Rowcliffe, Marcus	Research
Marine resources, livelihoods and conservation around a West African marine protected area	2 Oct 2007	Rowcliffe, Marcus	PhD

- The PR Team generated awareness in the media about ZSL's presence at Rio+20 United Nations Conference on Sustainable Development. Particular focuses were ZSL's talks on natural capital and protecting the world's oceans.
- Press coverage was generated throughout the year about new scientific papers.

Animal collections

Veterinary Department

- Every year brings a different clinical challenge and 2012 was no exception. The department spent much time and effort diagnosing and treating an outbreak of avian malaria in penguins at London Zoo, despite routine prophylactic treatments. Over the second half of August and into September a total of six penguins died. The clinical and pathological presentation was slightly unusual, but diagnosis was confirmed at post-mortem examinations and active treatment protocols initiated in sick birds. Due to the naturalistic nature of Penguin Beach, treatment compliance was extremely challenging, and to make matters more complicated our suppliers of primaquine let us down, forcing us to source more from various London hospitals at short notice. ZSL has a long-term research project running on the vectors responsible for transmission around the site and we plan, in collaboration with the Animal Department, to

apply further vector control next season, as well as refining our treatment protocols. All this said, we are confident that many more penguins would have become seriously ill and died, had it not been for the actions of the department.

- Unsurprisingly, gorillas occupied us, too. Kesho underwent general anaesthesia prior to his move to Longleat. Thoracic radiography to investigate exertional dyspnoea, further screening for Brucella and tuberculosis, and cardiac assessment were all performed. Radiography revealed mild pulmonary fibrosis, as has been described in humans suffering from Klinefelter syndrome, but findings were otherwise normal and his move went ahead. Our adult female, Mjukuu, has undergone prolonged triple antibiotic therapy to attempt complete clearance of any Brucella-like infection before the planned import of a new male.
- Teaching in the field of zoo and wild animal medicine continues to be one of our core activities. The year has seen another intake of students from around the world on the Wild Animal Biology and Health MSc courses, for which we provide clinical and pathological rotations, as well as lectures and practical sessions. Royal Veterinary College (RVC) undergraduates have undertaken electives, and eight others from vet schools across the UK and as far afield as Brazil have been able to accrue three weeks of their extra-mural studies (EMS) with the department. We have hosted veterinary nurses from the RVC and have plans to develop this into a formal internship. Edmund Flach ran a course on pathological investigations in the field for students attending a course at Oxford University's Wildlife Conservation Research Unit (WildCRU), and ZSL London Zoo vet Dr Tai Strike taught on the Tiger Conflict Mitigation workshop on Veterinary Training – Health and Handling, in Java.
- Members of the department have initiated research and presented their findings throughout the year. Yedra Feltrer founded the European Great Ape Heart Project (EGAHP) group to further discussions on the cardiovascular diseases we see in these species, and presented a poster on the subject at the European Association of Zoo and Wildlife Veterinarians meeting in Verona. Dr Tai, although not at the conference, co-authored another poster with Yedra on the European Contraception database, which was also presented there. Shaheed Macgregor initiated a study looking for *Clostridium difficile* from the faeces of animals at ZSL, in collaboration with the London School of Hygiene & Tropical Medicine. Nic Masters co-supervised two projects to produce locomotion and foot-scoring systems in elephants as part of his remit for the Elephant Welfare Group.

Conservation programmes

- To enable Indonesian vets to assist the Indonesian Forestry Department in rescuing or translocating such tigers, ZSL ran a practical training course in January 2012 in partnership with Taman Safari Indonesia, Wildlife Vets International, the Indonesian Forestry Ministry and HarimauKita. Dr Tai, along with vets from WVI and TSI, trained workshop participants in basic first aid and tiger anaesthesia. The work was funded by a grant from Defra and culminated in the publication of the world's first official government guidelines for tiger conflict resolution, including a comprehensive veterinary guidelines section.

4. We will continue our commitment to field conservation initiatives, strengthening activities in 50 countries and 12 core conservation hubs throughout Europe, Africa and Asia.

Conservation programmes and discovery and learning (animal collections)

- Through funding from the British Foreign & Commonwealth Office, a community engagement project was set up that involves Chagossians (people displaced from the Chagos Archipelago) based in the UK. The aim of the project was to inspire Chagossians about the natural environment, and empower them through training to become environmental ambassadors. Two project staff were appointed to organise family open days at ZSL London Zoo and Manchester Museum, and create, deliver and evaluate a training course for young Chagossians. The family days were attended by 500 people in London and 90 people in Manchester, which accounts for around one quarter of the known Chagossian population in UK. The training course ran over eight weekends and trained participants in skills such as coral identification, diving, science communication and biology of marine and terrestrial environment. One of the project's staff took part in a month-long research expedition to Chagos in November.
- The IUCN's Communication, Education and Public Awareness toolkit was a starting point for the department's work collaborating with ZSL Conservation Programmes. To strengthen the success of each project, there is a need to embed social factors (education, anthropology, sociology, psychology etc) into the project focus. Various members of the Discovery and Learning (D&L) Team worked on projects in 2012. Firstly with EDGE, the team supported individual EDGE fellows with the social aspects of their projects. Two examples are: we visited an EDGE fellow in Cameroon to help him with his project about caecilians and community interviews with villages; and assisting with improving education materials and interview questions for an EDGE fellow working with short-tailed chinchillas in Bolivia. D&L staff were involved in supporting the social factor elements delivered in the EDGE Training Tools Course in Kenya in November.

Conservation programmes

- ZSL continues to conduct robust research and science-driven conservation projects in more than 50 countries, as well as strengthening activities at 12 hub sites. A hub strategy was developed to ensure that each site is contributing to the overall mission targets set by the Society.
- Net-Works, an innovative project between ZSL and carpet-manufacturer Interface, is giving old fishing nets a new life. Through Net-Works the fishermen have an incentive to collect discarded nets, which otherwise pollute the environment. These are purchased and recycled into nylon yarn, which is then used by Interface to manufacture carpet tiles. Payment for the nets provides income to the local fishermen and is being used to develop village savings and loan schemes in local communities. In its six-month pilot phase Net-Works has cleaned up 50km to 60km of beach, while also generating income for local villagers and providing sustainably sourced products to its customers.
- Amid Mongolia's steppe grasslands, ZSL completed its annual field course between the 27 July and 17 August 2012. The participants comprised of 10 students from the National University of Mongolia and 10 international students from universities in the UK, US, Finland and Switzerland.
- The digital team developed and streamlined the structure, navigation and content in the Conservation section of the website.
- Training was provided for EDGE fellows about Communication, Education and Public Awareness on the course in Kenya.
- ZSL's Wildlife Wood Project in Cameroon was also visited by the project officer to conduct a stakeholder analysis to help to create a communication strategy to engage with communities in the future. This case study demonstrated how Conservation Programmes and D&L can successfully collaborate to strengthen the project outcomes.
- In collaboration with Save the Rhino International (SRI), the project officer visited the conservation education programme in Zambia. This programme covers local schools that are close to a national park. A meta-analysis of the programme was conducted through talking to the school teachers, SRI staff and through observations. Recommendations for improvements were made and an evaluation framework was set up. New resources were produced and will be implemented throughout the project in 2013.

5. The conservation focus of the Society will be on defining the status and trends of the world's species and ecosystems, ensuring the protection of priority EDGE of Existence species, expanding the global marine protected area (MPA) system, and addressing five crisis issues, including reversing the global decline of amphibians, coral reefs, great apes, freshwater fish and large Asian mammals.

Conservation programmes

- ZSL produced the Living Planet Index for the Living Planet Report, Priceless or Worthless: the world's most threatened species and Spineless: status of the world's invertebrates. These were three of the most influential documents on the status of species and ecosystems produced globally in 2012.
- ZSL funded a third cohort of EDGE fellows, and brought 13 early-career conservationists working on mammal, amphibian and coral EDGE species to the Coast Province of Kenya for the EDGE Conservation Tools training course. The eight international and five Kenyan participants joined experts from ZSL, the Kenya Wildlife Service and Coastal Oceans Research and Development in the Indian Ocean for four weeks' intensive training in the design, execution and management of successful conservation projects.
- EDGE corals was launched in 2011 and several EDGE coral Fellows are now going through the programme.
- ZSL has been engaging the general public and enlisting the help of volunteers to help conserve the critically endangered European eel, *Anguilla anguilla*. ZSL works with 10 partnership organisations and, since the project began in 2011, 167 volunteers have been trained to become Citizen Scientists involved in the eel monitoring project.
- After leading Project Ocean, ZSL agreed to host the Marine Reserves Coalition, which brings together the major Marine non-governmental organisations to help drive forward the implementation of MPAs in UK waters and abroad.
- ZSL conducts conservation breeding and health studies on several amphibians including mountain chickens and Chinese giant salamanders.
- ZSL supports the IUCN Amphibian Survival Alliance aiming to deliver on a global strategy to conserve amphibians.
- ZSL established three new IUCN Species Specialist Groups in 2012 – the pangolin specialist group, the okapi specialist group and the mangrove specialist group. The first two groups focus on groups containing EDGE species, while the protection of the third group encompasses many important marine zones.
- We also increased activities in our MPAs in the Philippines, improving coral reef protection. In Cameroon we continue to develop best practice guidelines to insure the logging industry minimises its impact on great apes.
- We have also taken steps to stop the wildlife trade of great apes in many of the countries where we have offices. In Equatorial Guinea (EG), ZSL played a key role in rescuing an infant gorilla illegally held as a pet at a restaurant.

With partners and the EG authorities, the gorilla was sent to a Pan African Sanctuary Alliance centre in Cameroon for rehabilitation. ZSL then led a national media campaign to raise awareness of the problem and persuade people not to get involved in the trade of great apes as pets.

- In Turkey, ZSL staff joined Fish Net Turkey partners in the Anatolian lakes region to collect fish at five sites containing endangered pupfish – one of the 100 most threatened species in the world.
- ZSL staff travelled to Panama in early 2012 to conduct an urgently needed population census and threat assessment of the critically endangered pygmy three-toed sloth (*Bradypus pygmaeus*), a top-100 EDGE mammal and one of the 100 most threatened species in the world.
- ZSL Cameroon has been supporting forestry authorities, timber companies and local communities in the south east of the country – an area recognised by the IUCN as a conservation priority for the species – to fight the trade. This year we provided training and support to Pallisco's enforcement team that directly led to the arrest of two poachers who had illegally killed elephants (an EDGE species) in the area.
- In 2012, ZSL scientists took part in two expeditions to the Chagos Archipelago, the world's largest fully protected MPA. A highlight of the first was underwater video footage from the newly discovered Sandes seamount. Images from this unexploited area, teeming with sea life, show us what our oceans should look like. The autumn expedition focused on the most neglected area of the ocean – the pelagic zone or 'big blue' open water. Trialling new camera technology, the team developed new ways to monitor top predators such as sharks and tuna. These activities, and the information gained from them, will strengthen the evidence base for the expansion of MPAs around the world, while also informing effective monitoring and management of these areas.
- A study being carried out by Project Seahorse, a collaboration between ZSL and the University of British Columbia (UBC), and Imperial College London into West Africa's burgeoning seahorse trade, obtained the first video footage of the little-known West African seahorse, *Hippocampus algiricus*, in Senegal, and is providing vital information on the biology and ecology of this species and the trade. Seahorse have been used as effective flagship species in the creation of many ZSL-led Marine Protected Areas.
- Finally, a major effort has been made to expand our tiger work in Indonesia, Bangladesh and Russia.

Animal collections

Amphibians

- Our amphibian exhibit and care facilities were brought up to date in 2012. The new exhibition has a strong narrative and guides the visitor through the evolution of amphibians, diversity, adaptability, conservation status, and finally, the work ZSL is doing to combat global amphibian declines. The exhibit showcases the important and groundbreaking work of the living collections, IoZ and EDGE, and highlights the amphibian crisis and how visitors can help. Visitor evaluation showed that visitors were more aware following a visit to this exhibit and also cared more about the fate of amphibians.
- Behind the scenes we have the ability to fine-tune temperatures, as a result we expect increased breeding success with our amphibians and improved animal welfare. Biosecurity has also been enhanced.
- 2012 was a great year for mountain chickens here at ZSL. Two of our female frogs of Montserrat origin successfully reared nests and as a result we have 76 juveniles. We anticipate that some of these juvenile frogs will be released in Montserrat in late 2013, and 50 juveniles will be sent to the Durrell Wildlife Conservation Trust, where they will be reared in preparation for the release as we do not have the space here at ZSL. We will raise 25 frogs ourselves. We have one pair of Dominican mountain chickens, this pair produced a foam nest last year, but, unfortunately, this was infertile. If we do not manage to breed this pair this year we wish to reconsider the future of this pair in the collection.
- The project in Dominica is going from strength to strength. There are now 10 mountain chickens in the captive breeding facility, which is staffed by the Dominican Forestry Department and a ZSL volunteer. The frogs in the facility are acclimatising well and it is hoped that they will breed in 2013. Juvenile frogs are being found on Dominica for the first time since the chytrid outbreak, it is vital that we now focus on developing an intensive field programme in Dominica so we can determine population size and disease status of mountain chickens in the field.

Fishnet

- Demolition started in the derelict section of Hall 1 in the aquarium for a new facility dedicated to the conservation and breeding of threatened freshwater fishes (Fish Net). Demolition and construction started for the creation of a new on-show seahorse breeding lab. This area will consist of a new exhibit, as well as a view into the behind the scenes areas, where seahorses are bred and reared.
- Brian Zimmerman spent two weeks in Greece with Fish Net partners analysing site populations, where the Corfu killifish is found, as part of plans for a translocation effort in 2014. BZ and Alex Cliffe worked in Turkey with Fish Net partners to set up breeding facilities at FarukYalçın Zoo in Istanbul and collect five species of threatened Turkish killifish and transfer them back to the Zoo's aquarium for breeding and maintenance. Alex's trip was funded by the Michael Brambell Travel Grant.

Corals

- The aquarium received its largest-ever confiscation of corals with 35 boxes containing 815 specimens of which 678 were coral colonies, as well as 28 fish, 61 clams, 40 snails, seven shrimp and several anemones. Many of the corals were rehomed at other collections subsequently, but many still exist in the aquarium.

6. The Society will increase its efforts to address the growing threat of climate change by conducting robust science on the topic as it relates to biodiversity, implementing initiatives to reduce deforestation and making our own operations more sustainable.

Conservation programmes

- In 2012 there was a strong focus on our Reducing Emissions from Deforestation and Forest Degradation (REDD) initiative in Berback, which aims to create a carbon financing mechanism that will both benefit the forests and biodiversity – with a focus on tigers. PhD research from IoZ also conducted at the site helps make it one of the best-researched REDD initiatives globally.

Scientific research

- *Natural population die-offs: causes and consequences for terrestrial mammals*
With extreme climatic events expected to occur more frequently and with greater intensity in the coming decades, there is increasing awareness that such events represent a growing threat to biodiversity. In particular, extreme natural events such as cyclones, droughts and floods have been shown to trigger episodes of high mortality in wildlife populations in relatively short timeframes. These population die-offs have been documented across different taxonomic groups and in a wide range of circumstances; yet, a consensus on how to define them has not emerged and the elements favouring the occurrence of these abrupt population losses remain surprisingly understudied. These issues hamper our ability to identify populations most at risk. Our study provided a functional definition of natural population die-offs, an assessment of extrinsic and intrinsic processes shaping these die-offs, and a framework for assessing the vulnerability of terrestrial mammals to natural and anthropogenically caused extreme events. With this framework, we hope to identify populations most at risk and support previous efforts to assess the vulnerability of species to climate change.

Ameca-y-Juárez, EI, Mace, GM, Cowlshaw, G, and Pettorelli, N (2011), 'Natural population die-offs: causes and consequences for terrestrial mammals', *Trends in Ecology and Evolution* 27: 272–277.

Charity-wide sustainability efforts

Energy

- An energy reduction programme launched with an energy reduction survey to all staff at ZSL. Quarterly energy reduction programme meetings have begun between ZSL and our energy contractors who will cover the costs of staff engagement programme. Energy reduction training for up to 40 staff is being planned for early next year. Quarterly reviews of energy consumption figures is underway to track progress. Improved monitoring of energy use at London Zoo has been very beneficial in improving focus for reduction efforts.

Waste

- Considerable improvements have been made through the centralisation of our waste management with ACM Environmental PLC. The system of waste management is being rethought, with new bins (mixed recycling and landfill) being placed throughout all public and staff areas on both sites and improved waste facilities for the estates department.
- Through efforts made over the year we are now achieving a landfill rate of only 2% (not including waste from projects). 98% of our waste is now either being composted, recycled or reused. London Zoo is above average with a 1% landfill rate and Whipsnade Zoo has a 3% landfill rate. We can now accurately monitor and report our waste data on a monthly basis at both of our sites, which is a huge improvement.
- Capital projects have been required to develop waste management plans to ensure waste is managed and reduced effectively.
- Moving forward we will look at including waste figures from projects into our overall totals, as well as improving public and staff engagement in recycling and composting.
- A green fund was awarded to Alex Cliffe's project which allows the development of a rainwater harvesting system in the aquarium using water running off from the Mappin building into disused underground reservoirs under the aquarium. The project is expected to save more than 7,000 litres of water and £3,000 annually.

- The water management system currently being used at London Zoo is being rolled out to the Whipsnade Zoo site, to identify areas of water leakage.
- Significant savings made within Penguin Beach. High levels of water consumption identified through a water monitor fitted at the beginning of the project. Through adaptation of animal management practices, with no impact on animal welfare or visitor experience, significant cost savings were made over the year. After this success we are now looking to fit water monitors as standard for new projects in the future.

Onsite biodiversity

- A botanical surveyor completed an Extended Phase 1 Habitat Survey for London Zoo and an Extended Habitat 1 and NVQ Survey for Whipsnade Zoo.
- There was positive feedback from Natural England on the status of the Site of Special Scientific Interest (SSSI) at Whipsnade Zoo and ongoing management by ZSL.

Hazardous materials

- Work was carried out to develop a centralised database of all hazardous materials as part of Control of Substances Hazardous to Health (COSHH) management, to be completed in 2013.

Travel and transport

- An LPG landtrain was introduced at Whipsnade Zoo, reducing onsite emissions.

Procurement and investment

- New procurement guidelines were developed and integrated sustainability aspects throughout. Twenty staff members were trained at London Zoo and Whipsnade Zoo on sustainable procurement.
- A lot of work was carried out over the year to ensure ZSL is procuring palm oil, timber and fish sustainably, and to ensure credibility when working on conservation projects in these areas. Guidance developed through ZSL's internal review process for palm oil is incorporated into the ZSL online Sustainable Palm Oil Platform.
- Green fund supported Whipsnade Zoo's Wildbite Café homegrown foods project. Public are now being provided with herbs and vegetables grown onsite.

Other significant news

- ISO 14001 (three-year) recertification was achieved earlier in the year.
- Both London Zoo and Whipsnade Zoo received a gold standard for their Green Tourism awards after both sites were inspected by auditors.
- Aylin McNamara joined the British and Irish Association of Zoos and Aquariums (BIAZA) environmental sustainability and climate change working group, and helped to organise a workshop for BIAZA members at ZSL. The group is working towards developing new BIAZA guidelines for sustainability.
- A supplier sustainability assessment was done for live fish and invertebrates, and two new suppliers were trialled as part of the review. Suppliers of frozen feeds were also evaluated and changes made as a result to seek local sources for aquarium feeds whenever possible.
- Sustainability in action in our Trading operations is highlighted below.

Retail and admissions

The ZSL Retail and Admission Team continue to challenge and work with suppliers to improve the sustainability of our operations. Key steps taken in 2012 include ensuring all till rolls and tickets are on Forest Stewardship Council-certified paper and moving all new adult T-shirts, and all new exhibit specific (for example Tiger Territory) T-shirts, to certified 100% organic.

7. We will assist in coordinating the conservation community to ensure that policy makers have access to the best information on species and ecosystems.

Conservation programmes

- ZSL hosted an excellent series of talks, as well as large symposiums in 2012, all of which helped to bring together the conservation community and advance specific agendas. Held monthly throughout the academic year, 2012's programme included lectures on 'The global decline of mangroves'; 'Extreme natural events: an overlooked driver of biodiversity loss'; 'The Sargasso Sea'; 'The evolution and life history of parasitism'; 'Saving the tiger: innovation, tradition or both?'; 'Surviving the century: a key species debate'; and 'Mind the gap... in our knowledge: addressing the information bias in conservation science'.

- The Living Planet Index and Spineless also pulled together the best available science for policy makers in terms of defining the status and trends of species and ecosystems.
- Since 2008 ZSL's Biodiversity and Oil Palm project has worked to develop practical guidance that can assist policy makers and the palm oil industry to reduce its impacts on both forests and wildlife. In October 2012, ZSL launched the Sustainable Palm Oil Platform – sustainablepalmoil.org – at the annual meeting of the Roundtable on Sustainable Palm Oil (RSPO). The Sustainable Palm Oil Platform is a valuable tool for all stakeholders in the palm oil supply chain, providing information, case studies, interviews and links to relevant websites and publications.
- In the run up to the global Rio+20 summit, ZSL and ClientEarth ran a Pledge for a Better Planet campaign, rallying more than 4,000 young people from around the world to hold their governments to account in fulfilling their commitments to sustainable development. 70 students from primary and secondary schools across London debated the sustainable development goals and then moved to Westminster, where they provided a list of recommendations to the UK Government's Chief Scientific Adviser, Sir Robert Watson. The pledge was then delivered to the GLOBE Summit of Legislators at Rio+20 by a youth representative, after which government officials from around the world lined up to sign the document. Jonathan Baillie, Director of Conservation Programmes, also delivered the keynote address to this gathering.
- ZSL led and supported several important political motions at the IUCN World Conservation Congress. These included calls for various initiatives from the wildlife trade and the development of national and regional red lists, to halting the loss of evolutionarily distinct lineages and developing the concept of biological security. All were adopted and will form part of the IUCN work programme for the next four years.

8. Priorities for development at ZSL London Zoo will be the construction of the Tiger Territory exhibit – a new home for our Sumatran tigers to open in 2013 – and continuing project work on improvements to the provision of catering across the site. The Regent's Park site will also link in to 2012 Olympic opportunities where possible.

Animal collections

- The Tiger Territory construction commenced, and in the lead up to this, several species had to be relocated including the birds in the African Bird Safari, Animal Activities areas, camels and anoa.
- The pygmy hippo pair remained in winter accommodation and will transfer to the existing tiger enclosure when the tigers move to Tiger Territory in late February/March. They will remain in this area until the new exhibit in Into Africa is completed later in the year.
- The new camel exhibit, adjacent to Tiger Territory, was completed in time for the two camels to be included in the Christmas Nativity.
- The Sumatran tiger EEP confirmed Global Management Species Programme recommendations for London to receive a female tiger from Perth Zoo, Australia, and male from Akron Zoo, US. These 2008-born tigers are highly ranked in the EEP and will therefore receive successive breeding recommendations.
- London's Sumatran tiger pair were transferred to the Wildlife Heritage Foundation in September, with the new tigers arriving over the following weeks. DHL-funded the tiger transfers, and this sponsorship included Keepers travelling out to both collections. The Keepers familiarised themselves with the operant conditioning programmes before travelling back with the tigers to London. These training programmes have continued and developed, and crate training is in progress for transfer to the Tiger Territory exhibit in late January. Although no introductions have occurred, behaviours are positive.
- The new tapir exhibit is under construction and the female Malayan tapir is pregnant, confirmed with ultrasound under trained behaviours. Parturition date is close to the availability of the new tapir exhibit in the Casson, and as such the male will move across in February/March. The female will remain in the present facility for parturition and transfer with her calf later in the year. In the interim period the anoa will also be on exhibit in the smaller tapir enclosure.

London Zoo marketing

- The London 2012 Olympics affected us from mid-July to mid-August, where we lost approximately 40,000 visitors over the four-week period to budget and last year. We were hit by domestic visitors being put off travelling into London, as well as less visitors coming from overseas to visit London. The only upside during this period was the value of a strong membership with lots of local visitors using the opportunity to visit the Zoo while London was significantly quieter.
- However, from September, we had a strong finish to the year, partly due to suppressed demand from the Olympics. We recovered nearly 50,000 visitors to budget post-Olympics, but in the end the shortfall was too great to recover.
- Tiger Territory is due to open to the public on 22 March in time for Easter 2013.

Communications

- The PR Team increased awareness of Tiger Territory by securing BBC coverage around the arrival of two new Sumatran tigers.
- The London 2012 Olympics were celebrated across both sites in Animal Athletes, where parallels were drawn between animal adaptations and human athletes through signage, live events and a visitor scratch card.
- The Engagement and Interpretation Team have been making plans for the exhibit and live interpretation of Tiger Territory.

Trading

A retail Tiger Territory shop is being included on the exit of the exhibit, aiming to drive Tiger product sales. Prior to Penguin Beach, Tiger product was the retail department's best-selling items, and we expect to see a suitable upswing in sales for 2013. The unit is Indonesian themed, and will feature all new ZSL products. 98% of the products will be exclusive to ZSL.

9. ZSL Whipsnade Zoo priorities include a focus on the central 'hub' area (phase 1 being indoor play improvements) and further animal welfare-related projects and completion of Zoo licence conditions.

Animal collections

Hullabazoo

- Project Horizon Phase 1 saw the introduction of Hullabazoo, animal-themed indoor play to the central 'hub' at ZSL Whipsnade Zoo. Visitor feedback has been positive and for the period since opening (27 October) until 31 December 2012, ZSL Whipsnade Zoo was 45% up on budget indicating that Hullabazoo is performing ahead of the business case.
- Research (Building Disaster Resilient Communities (BDRC) Summer Wave 2012) has also shown awareness of Hullabazoo to be high with 44% of visitors being aware of Hullabazoo before of their visit and 56% of visitors being made aware of Hullabazoo during their visit to Hullabazoo. Initial Autumn Wave 2012 BDRC research has indicated customer's satisfaction scores of 8.3 against a KPI of 8.0.
- The halo effect of Hullabazoo has meant, not only are visitors purchasing incremental refreshment from the Hullabazoo Café, but also, visiting Wild Bites Café while they wait for their allocated play time. In addition to this, Membership has seen increasing numbers of members renewing earlier as a result of the Hullabazoo indoor play area.
- Graphic support was provided for Hullabazoo indoor play, including the creation of original animal illustrations to make the Rules of Play more child-friendly.
- Celebrity singer Michelle Heaton was secured by the PR Team to launch Hullabazoo for the press preview and subsequent coverage included the *Daily Mail*.
- Building on the success of phase 1, we are now developing Project Horizon Phase 2, outdoor adventure play which will be open and ready at the end of May 2013, to coincide with the Whitsun holiday period.

Animal welfare

- The additional field shelters, wind-breaks and feed racks in the Passage Through Asia have proved very successful having been used well by the deer species over the winter. These facilities have taken the pressure off the other shelters and provided additional space for the deer. It is planned to further enhance these areas.
- The outside meshed over area for the chimpanzees had an upgrade at the start of the year, with wind shelters and heating shelves added. Of benefit all year round, this improved facility is of particular importance in bouts of extreme cold weather when the moat is frozen over, reducing the pressure on the inside facilities, and providing the chimpanzees with more usable space even in cold weather.
- The trial in early 2012 with the air lines in Lake Daedalus to keep areas of water ice-free proved a total success, so it was applied to other moats in the Zoo for the 2012 winter. This includes an enhanced system in Lake Daedalus to keep a full area of water clear around the island, the two cheetah moats and the otters. All have significant positive impacts on the welfare of animals in those areas.

Zoo licence

At Whipsnade Zoo, renovations to the filtration system at the sea lion pool have had tangible effect on the health of the animals' eyes. The Veterinary Team performed weekly ocular examinations and the gradual improvement and stabilisation of water parameters coincided with a significant reduction in corneal inflammation. These weekly visits facilitated a general level of training, with the Veterinary Team present and even leading it, for medical procedures such as examination of the mouth, lung and heart auscultation, radiography and ultrasonography, culminating in a conscious blood-draw from the male 'Dom'.

10. The Events Teams at both ZSL London Zoo and ZSL Whipsnade Zoo are being strengthened to enable more special events (such as Zoo Lates) to be run throughout the year, helping to spread our visitor numbers more evenly.

Animal collections/trading

London Zoo

- The Events Team has had a busy year in 2012 delivering the 2012 event calendar. These are important for repositioning and driving incremental visitors to ZSL London Zoo.
- 2012 saw the introduction of two new events, 'The ZSL Animal Photography Prize' and 'Little Creatures' family festival. Both were a good start with the aim to build and increase exposure of these over the next couple of years.
- Zoo Lates continues to go from strength to strength and is one of the leading summer events in the capital for visitor attractions. We sold more than 60,000 tickets. The last night coincided with the Olympics opening ceremony and still brought in 5,500 visitors.

Whipsnade Zoo

- This year saw a stronger events programme than ever before at ZSL Whipsnade Zoo. In addition to Zoo Nights, Boo at the Zoo and Christmas, we introduced two new events – Shaun the Sheep Championsheeps Live and Little Creatures.
- NEW – Shaun the Sheep Championsheeps Live.
Shaun the Sheep Championsheeps Live was a family sports day with a difference. The activity happened for the Whitsun and Diamond Jubilee holidays (2-10 June). The branded activity coincided with the build for Project Horizon and added a new dimension to our own Farm and Olympic activity. Due to appalling weather, visitor numbers and associated spend were hampered. However, the results were positive and without the activity, we may have been in a worse position coming out of the Whitsun period.
- Zoo Nights
Zoo Nights took place on the last Saturday of the month (June), which coincided with 95% of the population's payday weekend. As a result, we saw greater income and a better mix, ie more paying individuals, proving that there is still a market for an evening event at Whipsnade Zoo.
- NEW – Little Creatures
Little Creatures was a ZSL take on the yummy mummy festival, LolliBop. Featuring Maize Mazes, Baby Loves Disco, free play and storytelling, it proved to be very popular with young families.

Communications

- PR of media events and inclusion of diary dates in publications including *Wild About* and *ZSL Life*.
- The Explainer and Volunteer Team provide essential support to events throughout the year and the Graphics Team designed day planners, posters and signage.

11. Evaluation of the effectiveness of the Zoos' learning programmes will remain a priority. The implementation (and assessment) of a new and restructured education service will be designed to keep increasing the numbers of schools converting to paying visitors from the previous Greater London Authority (GLA) free visits scheme. Both Zoos will have increased provision of facilities for educational talks and more dedicated teaching staff.

Animal collections

- A major element of 2012 was the production and implementation of a new D&L strategy. This focused on not only formal learning at ZSL, but had strategic aims covering interpretation and engagement, evaluation, arts and culture, and social factors of conservation programmes. This was signed off in February and has helped move the department forward in all of these key areas.

School visits

- 2012 was the first full year of schools visits to London Zoo without financial support from the GLA. There were 84,958 educational visits to ZSL London Zoo, a decrease on last year. This decrease can be accounted for due to free visits still in place in the first quarter of 2011.
- At ZSL Whipsnade Zoo, there were 33,631 educational visits, a decrease on last year. Facilities for visiting schools have been improved by the addition of a second teaching space and dedicated lunch room. This means that provides better facilities for visiting schools. Education sessions were made free of charge during the off-peak season.

School visits

ZSL London Zoo	2011	2012
All schools	107,606*	84,958
Whipsnade Zoo	2011	2012
All schools	39,513	33,631

* The 2011 financial year was the final year of GLA schools receiving free admission and therefore the figures were inflated for the first term of this calendar year.

London:

- In September, the new 2012-13 school visits brochures were distributed, which advertise the range of curriculum-linked education sessions the team offers to schools and colleges. They include 12 sessions that are Consortium for Research, Excellence, Support and Training (CREST) award-accredited.
- The team co-ran a teacher training event on biodiversity with the London Science Learning Centre and the IoZ Research Councils UK Fellows in January.
- PGCE students came to both sites for work experience and also to London Zoo for a bespoke course on teaching outside the classroom.
- Education sessions for AMEX platinum cardholders were developed and delivered to families during August.

Whipsnade:

- Two new teaching spaces were created in the Cloisters function suite, allowing more sessions to be booked and two to be taught simultaneously. This freed the Learning Den for conversion to a dedicated indoor lunch space.
- 2012 was the first full year of Zoo Academy courses. An additional member of staff was recruited to deliver the Zoo Academy and 69 students completed courses successfully. In addition this new opportunity generates revenue for ZSL.
- Nine activities offered to primary schools received accreditation as part of the British Science Association's CREST Star scheme and are promoted to schools through the scheme website.
- Following training to allow staff to contribute to the website, a range of activities for use by education groups before, during and after visits is available online.
- A link project was undertaken with a local infant school through which the children developed their understanding of animal care, conservation and the contribution of ZSL. This reached families that have not visited the Zoo before and created a very positive awareness of the Zoo and ZSL.
- The department hosted a Luton and Bedfordshire environmental education network event, showcasing the work of ZSL and other local environmental education providers for schools and organised education groups in the area.
- Six trainee teachers completed placements with the department, coming from the Bedford Pilgrim Partnership, Bedford University, Cambridge University's Faculty of Education and London South Bank University.

Practical learning programmes

- Following a successful pilot of this course at both sites last year, six courses were delivered during 2012 at each zoo. A total of 144 young people aged between 15 and 17 attended the eight-day courses. The content was based around theoretical sessions and practical activities. Each student completed the course with a portfolio of evidence and a reference from ZSL. The aim of the course is to support them during their first steps to a career working with animals. At £550 per student, this created a new revenue stream for the department. Practical Learning Officers were recruited specifically to lead these and other practical programmes in the future.
- At London, practical learning programmes were also delivered for groups from a pupil referral unit in Camden and children from Kids Company (a children's charity). These were both funded by an external funder: Bloomberg.
- At Whipsnade, New Horizons, a group for adults with mixed learning difficulties started weekly practical programmes working on grounds and horticultural activities.

Other events

- During 2012, D&L expanded their remit and worked on several projects that linked to schools and other educational groups.
- In collaboration with ZSL Conservation programmes, D&L hosted a Youth Summit in connection with the Rio+20 United Nations Conference on Sustainable Development in June. Seven local secondary schools were invited to participate in a mock Earth summit and created an outcome document that was taken to the chief scientific officer at Defra. A member of the D&L Team also attended the Rio+20 conference to promote youth engagement in conservation decisions. This project was awarded a commendation in the BIAZA awards – Best education project: schools and other education institutions.

Special Children's Day

- Special Children's Day 2012 was attended by nearly 5,000 children with special needs and their families, raising around £70,000 in total for ZSL through sales and donations. For a second year running the event was supported by Barclays through a cash donation and 36 employee volunteers who generously gave up their time to help during the actual event, alongside our very own ZSL Volunteers. New sensory sessions were developed for 2012, including storytelling, a 'rainforest experience' for children with sight impairment, and an art event. Explainers (ZSL Presenters) also played a key role in the event for the first time, developing and running sensory sessions. The event went on to win a BIAZA Award for Best Educational Project: Public and General Visitor.

Evaluation

- In April, an evaluation coordinator was appointed and during 2012 she has collaborated on projects that cover many of ZSL's directorates. The aim was to start to implement evaluation throughout ZSL activities to maximise our understanding of our audiences and drive the success of our programmes.
- In the D&L department, all our activities now have an evaluation strategy to ensure best practice throughout our work. The evaluation coordinator has advised and produced evaluation material for school teachers, school children, Rio+20 International Youth Summit, Zoo Academy and the Living Nativity.
- In the Commercial and Communication directorate, evaluation has been carried out during the development of various exhibits, including Tiger Territory and Amphibians at London, and Passage through Asia at Whipsnade. Sections of interpretation were piloted with various audiences to test suitability prior to installation. Visitor observations were also carried out, visitor behaviour was tracked through Gorilla Kingdom and Penguin Beach to discover how they interacted with the exhibit.
- Working with the conservation programmes directorate, an evaluation framework for the EDGE fellowship scheme was created and implemented, created questionnaires and focus group questions for numerous conservation projects including: the new EDGE fellows' training course, EDGE species report cards, EDGE caecilian project in Cameroon, EDGE corals project in the Philippines.
- The evaluation coordinator also completed visitor studies activities to collect people opinions at Zoo Lates, Special Children's Day and the Chagos Family Open Day.

Arts and culture

- Building on the association between D&L and the arts as a means to communicate ZSL's mission, arts and culture became an objective of the D&L five-year strategy. An Arts and Culture Coordinator was implemented in the department and a programme developed throughout the year for launch in 2013. The programme engages with the cultural elements of ZSL and includes art courses, exhibitions, events and an art society. The programme will run across both London and Whipsnade and, as well as aiming to engage ZSL with new audiences, it will be revenue generating and purposely educational.

12. We will continue to raise funds for the new tiger exhibit and tiger conservation in Sumatra while construction work on Tiger Territory is underway. We still need around £1m in fundraising. Our future fundraising priorities are currently being determined.

Animal collections

- Through a broad range of fundraising activities and the generosity of our supporters the campaign for Tiger Territory and our work in Sumatra was close to achieving its targets by the end of 2012.
- The ZSL website and other digital channels have supported and promoted the fundraising campaign for Tiger Territory throughout 2012.
- Fundraising priorities were set and work continued to raise funds for the priority areas throughout 2012. Work also began on the next set of masterplans for both London and Whipsnade Zoos, and when complete will provide a clear focus for fundraising projects into the future.

13. We will improve the visitor experience through better customer care and further development and use of the new customer relationship database and Customer Contact Centre for a single point of contact for all customers and supporters of ZSL.

- The success of our Customer Relationship Management strategy continued to flourish with more than four million emails sent to our growing supporter base, engaging them with the exciting work and opportunities that ZSL has to offer.

- By communicating more regularly with our supporters, we saw a marked increase in visits to our Zoos from our membership.
- Regular feedback surveys are collected from our Zoo visitors, and this information is used to improve our overall service levels.
- During 2012 we merged two customer-focused departments (Membership and our Customer Contact Centre) to create a new Supporter Services Team. This new team focuses on providing a high level of customer service to our wide base of different customer groups.
- Regular communication of ZSL news and events has been sent via the database to both members and non-members alike. We have been able to track awareness of our events programme through our quarterly research. This research has identified the customer relationship manager database, website and on-park communications as main reasons for awareness.
- Customer Contact Centre (now Supporter Services) is the first point of contact for all enquiries and bookings for ZSL Experiences. A customer care charter for ZSL Experiences is being drawn up to launch in 2013 to ensure consistently high customer service at all points along the customer journey.
- A new money-saving vouchers page in *Wild About* helps ensure our customers receive excellent value for money from their membership.

14. These achievements will only be possible with the continued hard work and dedication of staff and volunteers. To support this in 2012, we will continue to develop our staff and management training programmes and our volunteer communication systems.

- There are currently 459 volunteers across ZSL in 10 roles, although recruitment is about to take place at both sites, which will bring this number to around 550. In 2012, they donated more than 90,000 hours of service, which equates to more than £750,000 in salary terms. New roles were created for volunteers for Zoo Academy and the growing programme of special events, for example helping to run Shaun the Sheep activities.
- At London, volunteer recruitment was increased from twice per year to four times for both the learning volunteers and keeper volunteer roles. This initiative is working well, allowing a steadier population of volunteers on the teams.
- The special relationship with Barclays was again evident with a large group of corporate volunteers from that organisation joining with ZSL learning volunteers to support Special Children's Day.
- At Whipsnade, the volunteer coordinator set up volunteering opportunities for New Horizons, a group of young adults with learning difficulties. Under supervision, they complete tasks that other departments need doing, for example weeding and tidying flower beds, lawns and the area around chimps and lemurs.
- Whipsnade Halloween craft activities was run almost entirely by volunteers and included touch tables, scarecrow making, mask making and lollipop making. Volunteers also assisted in the Big Draw.
- Initiatives to support volunteer motivation and retention have been put in place. These include:
 - o arranging trips to other collections (volunteers were warmly welcomed at Colchester Zoo and at the Wildlife Heritage Foundation)
 - o behind-the-scenes visits to animal sections and the veterinary hospital
 - o an evening of talks about the development of Tiger Territory and our tiger conservation work.
- A great deal of work has been put in to develop the volunteers' own website, including a lot of site-building and road-testing by volunteers themselves. This will be rolled out early in 2013, with existing volunteers being encouraged to use it regularly and new volunteers having a staged introduction to its content and usage as part of their induction process. It is hoped this project will really improve communication to the volunteers helping them to feel truly valued. In addition to the revival of volunteer team leader meetings, themed evenings to provide the volunteers with more in-depth information have started. The first of these was about the planned interpretation of Tiger Territory, information about Melati and Jae Jae – our new Sumatran Tigers, and the work ZSL is carrying out for wild tigers. The next evening will be about EDGE species.
- The BIAZA volunteer coordinators forum was held at London Zoo in November. It was attended by 20 coordinators from BIAZA collections and good feedback has been received. This was the biggest attendance for several years and it is hoped that the coordinators forum will continue to grow in strength. The contacts database compiled as a result of this meeting will be a useful tool in communicating details of future meetings and information.

Plans and Objectives for 2013 and Future Periods

1. By raising our charity profile and improving the customer service in our Zoos we will maximise our opportunities to generate funds while further striving to improve our cost efficiency in these difficult economic circumstances.
2. We will continue our commitment to performing high-quality scientific research to help understand how the natural world works, and to provide a rigorous scientific underpinning for conservation policy and practice.

3. Our scientific priorities for the coming year continue to include wildlife health and disease and our core contributions to biodiversity indicators. Following the outcome of the HEFCE review of funding to the IoZ, a priority will be to continue strengthening our own science and conservation links, and the external links with our partner, University College London.
4. We will continue our commitment to field conservation initiatives, strengthening activities in 50 countries and 12 core conservation 'hubs' throughout Europe, Africa and Asia.
5. The conservation focus of the Society will be on defining the status and trends of the world's species and ecosystems, ensuring the protection of priority EDGE of Existence species, expanding the global marine protected area (MPA) system and addressing five crisis issues, namely reversing the global decline of amphibians, coral reefs, great apes, freshwater fish and large Asian mammals.
6. The Society will increase its efforts to address the growing threat of climate change by conducting robust science on the topic as it relates to biodiversity, implementing initiatives to reduce deforestation and making our own operations more sustainable.
7. We will assist in coordinating the conservation community to ensure that policy makers have access to the best information on species and ecosystems.
8. Priorities for development at ZSL London Zoo will be to complete the construction and then open the *Tiger Territory* exhibit – a new home for our Sumatran tigers (March 2013).
9. ZSL Whipsnade Zoo priorities include a focus on the central 'hub' area (indoor and outdoor play areas and improving the farm and educational spaces) and further animal welfare-related projects and completion of Zoo licence conditions.
10. The Events Teams at both ZSL London Zoo and ZSL Whipsnade Zoo are being strengthened to enable more special events (such as Zoo Lates) to be run throughout the year, helping to spread our visitor numbers more evenly.
11. Evaluation of the effectiveness of the Zoos' learning programmes will remain a priority. The implementation (and assessment) of a new and restructured education service will be designed to keep increasing the numbers of schools converting to paying visitors from the previous GLA free visits scheme. We will also further develop the ZSL Arts strategy.
12. We will continue to improve the general provision of catering on the London Zoo site through the opening of a renovated and expanded 700-seat capacity 'Terrace Restaurant' by July 2013.
13. We are well underway with our masterplan for London and Whipsnade – our vision for our sites for the next 20 years. Once they are completed and signed off by ZSL Council, they will enable us to determine, along with the Development Strategy Board, our future fundraising priorities for capital and revenue projects.
14. We will improve the visitor experience through better customer care and further development and use of the new customer relationship database and Customer Contact Centre for a single point of contact for all customers and supporters of ZSL.
15. These achievements will only be possible with the continued hard work and dedication of staff and volunteers. To support this in 2013, we will continue to develop our staff and management training programmes and our volunteer communication systems.

Corporate Status

ZSL, also referred to in this report as 'the Zoos', 'the Charity', and 'the Society', is a charity incorporated under Royal Charter, registered in England and Wales with the Charity Commission (No. 208728). Certain of the commercial operations of the two Zoos, principally catering and shops, are carried out through its wholly owned subsidiary companies Zoo Operations Limited, Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited.

Organisation Council

The Society is governed by the Charter, the current version of which dates from 1995, and by Byelaws and Regulations. The Byelaws set out requirements concerning membership, the Officers (President, Secretary, and Treasurer), the election and proceedings of Council, and general and other meetings.

The Council is the ruling body of the Society, meets five times each year, and is responsible for establishing and monitoring the policies of the Society. Council members are elected from and by the membership of the Society by postal ballot and serve for periods of four years. All members are circulated with invitations to nominate Trustees, and advised of the retiring Trustees and specialist skills that the Council consider would be helpful to the Society. The election is by postal ballot of the complete Fellowship.

New Trustees are invited to an induction/training meeting prior to taking up their role, where, in accordance with Charity Commission guidelines, they are briefed on their legal obligations under charity law and, where relevant, company law, the Charter and Byelaws of the Society, the committee and decision-making process, directors' reports and the financial performance of the Society. Additional training, if required, can be provided internally or externally.

Committees

In addition to Council, the Society operates through a number of committees and boards whose terms of reference and membership is shown below.

+ to 19 June 2012, * from 19 June 2012

• Finance and General Purposes Committee

Terms of Reference – To monitor the financial management of the Society and act as an audit committee, and to preview and prepare papers for Council requiring policy or capital investment decisions.

Membership – Paul Rutteman (Chair), Professor Geoff Boxshall, Professor Sir Patrick Bateson, Martin Cooke+, Ken Sims+, Dr Brian Bertram, John Edwards, Richard Melville Ballerand, Michael Bird*, Rupert Hambro.*

• Animal Welfare Committee

Terms of Reference – To advise Council on matters relating to Animal Welfare in the collections, both at ZSL London Zoo and ZSL Whipsnade Zoo, at the IoZ, and in the work of Conservation Programmes.

Membership – Professor Anna Meredith (Chair), Dr Brian Bertram, Natasha Fleming, Dr Andrew Higgins, Dr Charlotte Nevison, David Pritchard, Robert Wingate, Martin Cooke, Dr Kirsten Pullen.

• Awards Committee

Terms of Reference – Council presents a number of awards for contributions to Zoology and Conservation. The committee advises Council on all matters relating to these awards and the appointment of Honorary Fellows.

Membership – Professor Andrew Hildrew (Chair from February 2011), Professor Geoff Boxshall, Professor Tim Blackburn, Professor Jonathan Baillie, Professor Laurence Hurst, Professor Neil Metcalfe, Professor Josephine Pemberton, Professor Sunetra Gupta, Dr Rebecca Kilner, Professor EJ Milner Gulland, Professor Nina Wedell, Dr Paul Donald, Dr David Ferrier, Dr Rosie Trevelyan.

• Joint University College London/Zoological Society of London Committee

Terms of Reference – To determine, in the light of the policies and plans of the Society and where appropriate those of the University, the academic policy and development of the IoZ, and to advise the Director of Science of the Society thereon.

To coordinate and monitor the implementation of the IoZ's policies and plans, including planned staffing levels, student numbers and its financial management, and to submit an annual report thereon to the Council of the Society and the General Board of the Faculties of the University. To undertake other business as may be assigned to it by the Society or the University.

Membership – Professor Mary Collins (Chair), Professor John Carroll, Dr Helen Chatterjee, Professor Andrew Pomiankowski, Professor Geoff Boxshall, Ralph Armond, Professor Ian Owens, Sir Cyril Chantler.

• Zoos Advisory Committee

Terms of Reference – To provide specialist advice on the objectives of the Zoos and on specific aspects of their management; to review the annual business and financial plans for the Zoos and to recommend them to Council; to review any material variances to the plans and, where necessary, recommend to Council remedial actions; to review and recommend to Council any capital developments.

Membership – Ken Sims (Chair to September 2012), Dr Brian Bertram (Chair from September 2012), Sheila Anderson+, Dr Andrew Kitchener, Mark Challis, Dr Kristin Leus, Andy Simpson, The Hon Sir William McAlpine Bt, James Breheny (corresponding member), Martin Rowson, Sean Rovai, Darren Tossell, Mark Ridgeway.*

Day-to-Day Management

Day-to-day management is delegated to the Director General and the seven operational directors, and monitored by Council through the Officers. All matters of policy are determined by Council and the Officers of ZSL.

Council Members/Trustees

The following were Council members in the period 1 January 2012 to the date of this report unless otherwise indicated.

President

Professor Sir Patrick Bateson FRS

Secretary

Professor Geoff Boxshall FRS

Treasurer

Paul Rutteman CBE

Council Members

Martin Cooke+ (Vice President+)
Dr Brian Bertram (Vice President+)
Elizabeth Passey (Vice President*)
Ray Heaton* (Vice President*)

Sheila Anderson MBE
Michael Bird
John Edwards
The Hon Sir William McAlpine Bt+
Richard Melville Ballerand
Professor Anna Meredith
Mark Ridgway
Sean Rovai
Ken Sims+
Robert Wingate*
Dr Ruth Padel*

+ to 19 June 2012, * from 19 June 2012

Registered Charity in England and Wales No. 208728

Directors

Director General	Ralph Armond
Finance Director	Mike Russell
Human Resources Director	Ian Meyrick
Zoological Director	David Field
Conservation Programmes Director	Professor Jonathan Baillie
Director of the Institute of Zoology	Professor Tim Blackburn
Commercial & Communications Director	Rich Storton
Development Director	James Wren

Financial Results

In 2012, ZSL recorded a consolidated surplus on operations of £2.8m (2011: £4.2m) and a total surplus, before movements on the pension fund, of £3.1m (2011: £4m) after a £0.2m gain (2011: £0.2m loss) on investments. The actuarial gain on the pension fund was £0.3m (2011: £1.1m loss). This leaves a net movement in funds as a surplus of £3.4m (2011: £2.9m).

Total incoming resources decreased by £1.2m in the year, which primarily related to lower levels of animal collections income (£0.7m) and subsidiary trading turnover (£0.7m) resulting from lower visitor numbers to our Zoo's due to poor spring and early summer weather and the impact of the Olympics in London. Voluntary income also reduced by £0.2m with income from our science and research activities up by £0.3m and conservation programmes up by £0.2m.

ZSL remains dependent on its two Zoos for the bulk of its incoming resources. In 2012, ZSL London Zoo visitor numbers reached 974,433, a decrease of 116,308 (11%) on 2011. ZSL Whipsnade Zoo visitor numbers were 476,226, a decrease of 26,559 (5%) on 2011. The total number of visitors to the two Zoos in 2012 was 1,450,659 (2011: 1,593,526).

Incoming resources included Gift Aid recoveries on day entry to our Zoos, which amounted to £1.6m (2011: £1.6m), whilst in total, on all sources of income, amounted to £2.2m (2011: £2.3m).

As shown above, both IoZ, within science and research incoming resources – and conservation programmes – increased their revenues with new grants received in 2012, but these were mainly connected to specific projects and, although they supported ZSL's mission, they did not contribute to the unrestricted funds of the Society to fund future development.

Resources expended increased by £0.2m in the year, which primarily related to an increase in conservation programmes (£0.5m) offset by a reduction in trading subsidiary costs due mainly to lower sales volumes.

The total capital spend of £7.3m (2011: £3.3m) included significant progress on *Tiger Territory*, our main animal exhibit for 2013, commencement of a major refit of our main catering facilities (completion planned for summer 2013), both located at ZSL London Zoo and completion of 'Hullabazoo', an indoor soft play centre, opened in October 2012 at ZSL Whipsnade Zoo.

We continue to invest in our infrastructure to improve visitors' experiences, improve our facilities for scientific research and ensure the Society's compliance with the disability discrimination legislation and its sustainability profile.

The June 2011 triennial actuarial valuation of the ZS 1988 defined benefit pension scheme showed that it remains fully funded. On the basis of the Accounting Standards Board's financial reporting standard 17, it had a £0.5m surplus at the end of 2012 (2011: £0.4m deficit) after a curtailment gain of £0.3m. Funding levels continue to be monitored by ZSL and the pension fund Trustees on a regular basis. Whilst this scheme is now closed to employees joining after 30 June 2011, a new stakeholder defined contribution scheme is available for those employees.

Our main trading subsidiaries, Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited, produced lower results than 2011 due substantially to the lower visitor volume, some outsourcing of ZSL London Zoo Day Visitor Catering (DVC) in the final quarter of the year and also the difficult economic conditions. Turnover at £9.3m was £0.7m behind 2011 and cost reductions, aided by the outsourcing of the DVC activity, helped keep down the net profit decrease from £2.3m in 2011 to £2m in 2012.

Donated Facilities

The Society leases the Regent's Park site from the Department for Culture, Media and Sport. The lease was renewed in 1999 for a term of 56 years at no annual rent. The Trustees do not believe it is possible to reasonably quantify and measure the benefit conferred to the Society under this rent-free arrangement, and to do so would incur disproportionate expense, and as such have not included the value of this donated facility in the Consolidated Statement of Financial Activities.

Animals

The animals are generally acquired by the Society from other zoological organisations at zero cost and a realistic valuation cannot be placed thereon.

Heritage Assets

ZSL holds a collection of books and artwork located at the ZSL London Zoo site, which are held to support ZSL's charitable objectives, being the advancement of zoology. The Trustees do not consider that reliable cost or valuation information can be obtained for the vast majority of items held in the collection of books and artwork due to the unique features of the assets held, the number of assets held and the lack of comparable market values. Furthermore, the Trustees believe the cost of obtaining a valuation of these assets would be onerous compared with the benefit that would be derived by users of the accounts in assessing their stewardship of the assets. The Society does not therefore recognise these assets on its Balance Sheet.

Funds

ZSL's funds as at 31 December 2012 amounted to £53.8m (2011: £50.4m), which includes a £0.5m defined benefit pension scheme asset (2011: £0.4m liability). These were represented by buildings and other tangible fixed assets of £38.8m (2011: £35.2m), with the balance being represented by cash, short-term deposits, investments, stocks, debtors and a defined pension scheme asset, less creditors and, for 2011, a defined pension scheme liability.

Reserves Policy

ZSL's policy concerning the level of cash and investments is to have funds available to:

- Meet liabilities as they fall due
- Meet emergencies
- Augment the capital expenditure programme from time to time as appropriate
- Build up investments over a period with the aim of providing an additional income stream for non-commercial activities

The policy is reviewed annually in connection with the setting of revenues and capital budgets.

The Trustees have considered the level of free reserves (that is those funds not tied up in tangible fixed assets and other designated funds, pension scheme assets (but after any pension scheme deficit) and restricted funds), which amounted to £7.7m at 31 December 2012 (2011: £7.2m). The level of free reserves at 31 December 2012 is considered to be sufficient to support the current operations and continued activity in the redevelopment of the Zoos, as well as providing adequate funds to meet emergencies.

The Trustees free reserves target, at a minimum, is to cover the costs of running the Zoos during an emergency closure to the public, for a period of up to three months. This would require minimum free reserves of around £3.5m.

The current higher level of reserves are held for investment in existing (Tiger Territory, Terrace Restaurant) and future capital programmes.

Investment Policies

ZSL holds most of its available funds in bank and short-term deposits, which at 31 December 2012 totalled £11.9m (2011: £13.6m). In addition, ZSL holds listed investments of £3.9m (2011: £3.7m), the majority in the Newton Investment Management 'Socially Responsible Investment (SRI) Fund for Charities'. This SRI Fund for Charities contains a mixture of funds with the intention of providing a balance of income from dividends and capital appreciation.

The Scientific and Reserve Fund portfolios have a common approach to the management of both portfolios and to the adoption of a common benchmark for the two. In 2012, the Scientific Fund and the Reserve Fund each returned a 9.3% surplus, against its (blended) benchmark return of 9.8%.

The benchmark for both funds is a composite comprising 20% FTSE Government All Stocks Index, 50% FTSE All Share Index, 25% FTSE World (ex UK) and 5% 7 Day London InterBank Bid rate (LIBID). The net investment gain amounted to £0.2m in 2012 (2011: £0.2m loss).

The Charter and Byelaws of ZSL give the Trustees the right to invest the funds of the Society in such investments, securities or property as may be thought fit. Investments are managed by Newton Investment Management Limited, which has been instructed not to directly make investments that are contrary to the Society's stated purpose and objectives. Specific areas of constraint in investment include companies involved in animal testing, marine harvesting, high environmental impact products and practices using Red List ingredients and substances, and those using tropical hardwoods from unsustainable sources. In addition, all shareholder voting is to be actively used and conducted in line with these socially responsible guidelines and principles.

Risk Management

The Trustees review annually the major risks to which ZSL is exposed. The review considers all risks to which ZSL is exposed and how those risks are managed; this includes operational and financial risks, together with major external influences and events outside the control of ZSL, specifically adverse weather conditions and epidemics such as foot-and-mouth disease, and avian and swine influenza. The Trustees are generally satisfied that proper systems, including risk-assessment procedures, health and safety policies and insurances are in place, and that policies are in place to recognise and mitigate exposure where possible to other major risks. The procedures established by the Trustees allow for an ongoing assessment of risks and, in addition, a limited internal audit function has been put in place.

The Financial Statements and Trustees' Responsibilities

The Trustees are responsible for preparing the Trustees' Report and the financial statements in accordance with applicable law and UK Accounting Standards (UK Generally Accepted Accounting Practice).

The law applicable to charities in England and Wales requires the Trustees to prepare financial statements for each financial year, which give a true and fair view of the state of affairs of the Charity and group, and of the incoming resources and application of resources of the Charity and group for that period.

In preparing these financial statements, the Trustees are required to:

- Select suitable accounting policies and then apply them consistently
- Observe the methods and principles in the Charities Statement of Recommended Practice (SORP)
- Make judgments and estimates that are reasonable and prudent
- State whether applicable UK accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Charity will continue in business.

The Trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the Charity and group, and enable them to ensure that the financial statements comply with the Charities Act 2011, the Charity (Accounts and Reports) Regulations 2008 and the provisions of the Royal Charter. They are also responsible for safeguarding the assets of the Charity and group, and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Trustees are responsible for the maintenance and integrity of the Charity and group, and financial information included on the Charity's website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Auditors

Baker Tilly UK Audit LLP were reappointed for 2012. A resolution to reappoint Baker Tilly UK Audit LLP, chartered accountants, as auditors will be put to the members at the Annual General Meeting.

Reference and Administrative Information

Principal address	Regent's Park London NW1 4RY	Principal bankers	Royal Bank of Scotland London Drummonds Branch 49 Charing Cross London SW1A 2DX
Also at	Whipsnade Wild Animal Park Dunstable Bedfordshire LU6 2LF	Statutory auditors	Baker Tilly UK Audit LLP 25 Farringdon Street London EC4A 4AB
Registered office	Regent's Park London NW1 4RY	Investment advisors	Newton Investment Management Limited 160 Queen Victoria Street London EC4V 4LA
Lawyers	Hempsons Solicitors 40 Villiers Street London WC2N 6NJ	Internal audit	Oakwell BDI 3 Barn Meadow Lane Great Bookham Surrey KT23 3HJ

Approved by Council on 16 April 2013
Signed on behalf of Council



Professor Sir Patrick Bateson
President

2. Independent Auditor's Report to the Trustees of the Zoological Society of London

We have audited the financial statements of the Zoological Society of London for the year ended 31 December 2012 on pages 30 to 55. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

This report is made solely to the Charity's Trustees as a body, in accordance with the Charities Act 2011. Our audit work has been undertaken so that we might state to the Charity's Trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Charity and the Charity's Trustees as a body, for our audit work, for this report, or for the opinions we have formed.

Respective responsibilities of Trustees and auditor

As explained more fully in the Financial Statements and Trustees' responsibilities set out on pages 27 and 28, the Trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

We have been appointed as auditors under section 151 of the Charities Act 2011 and report in accordance with regulations made under section 154 of that Act. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's (APB's) Ethical Standards for Auditors.

Scope of the audit of the financial statements

A description of the scope of an audit of financial statements is provided on the APB's website at www.frc.org.uk/apb/scope/private.cfm.

Opinion on financial statements

In our opinion, the financial statements:

- give a true and fair view of the state of the group's and charity's affairs as at 31 December 2012 and of their incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Charities Act 2011.

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters where the Charities Act 2011 requires us to report to you if, in our opinion:

- the information given in the Trustees' Report is inconsistent in any material respect with the financial statements; or
- the parent charity has not kept sufficient accounting records; or
- the parent charity financial statements are not in agreement with the accounting records and returns; or
- we have not received all the information and explanations we require for our audit.

Baker Tilly UK Audit LLP

BAKER TILLY UK AUDIT LLP
Statutory Auditor
25 Farringdon Street
London
EC4A 4AB
18 April 2013

3. Consolidated Statement of Financial Activities

For the year ended 31 December 2012

	Notes	Unrestricted		Restricted		2012	2011
		General £000	Designated £000	Endowment £000	Other £000	Total £000	Total £000
Incoming resources							
Incoming resources from generated funds:							
Voluntary income	3	1,762	–	–	1,310	3,072	3,238
Activities for generating funds:							
Subsidiaries' trading turnover	4	9,329	–	–	–	9,329	10,010
Interest and investment income	5	289	–	1	54	344	446
Incoming resources from charitable activities:							
Animal collections		24,313	–	–	104	24,417	25,139
Science and research		863	–	–	4,487	5,350	5,084
Conservation programmes		11	–	–	2,107	2,118	1,928
Total incoming resources		36,567	–	1	8,062	44,630	45,845
Resources expended							
Cost of generating funds:							
Costs of generating voluntary income		795	–	–	–	795	641
Fundraising trading:							
Subsidiaries' cost of goods sold and other costs	4	7,328	–	–	–	7,328	7,732
Charitable activities:							
Animal collections		23,660	–	–	74	23,734	23,667
Science and research		1,526	2	–	4,095	5,623	5,731
Conservation programmes		1,573	–	–	2,540	4,113	3,654
Governance costs		199	–	–	–	199	181
Total resources expended	6a	35,081	2	–	6,709	41,792	41,606
Net incoming/(outgoing) resources before transfers							
		1,486	(2)	1	1,353	2,838	4,239
Transfers between funds	14	(851)	2,975	–	(2,124)	–	–
Net incoming/(outgoing) resources before other recognised gains/(losses)							
		635	2,973	1	(771)	2,838	4,239
Other recognised gains/(losses):							
Gain/(loss) on investments	10	80	–	53	90	223	(223)
Actuarial gain/(loss) on pension scheme	15	300	–	–	–	300	(1,100)
Net movement in funds		1,015	2,973	54	(681)	3,361	2,916
Reconciliation of funds							
Total funds balance brought forward		7,219	36,209	640	6,347	50,415	47,499
Total funds balance carried forward		8,234	39,182	694	5,666	53,776	50,415

The above results are all for continuing operations.

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

The notes on pages 33 to 55 form part of these financial statements.

4. Consolidated and Charity Balance Sheets

As at 31 December 2012

	Notes	Group		Charity	
		2012 £000	2011 £000	2012 £000	2011 £000
Fixed assets					
Tangible assets	9	38,790	35,179	38,790	35,179
Investments	10	3,930	3,687	5,591	5,348
		<u>42,720</u>	<u>38,866</u>	<u>44,381</u>	<u>40,527</u>
Current assets					
Stocks	11	689	730	136	137
Debtors	12	4,084	3,396	5,492	3,712
Short-term deposits		4,005	6,000	4,005	6,000
Cash at bank and in hand		7,933	7,622	6,607	6,843
		<u>16,711</u>	<u>17,748</u>	<u>16,240</u>	<u>16,692</u>
Creditors: amounts falling due within one year	13	(6,155)	(5,799)	(7,345)	(6,404)
		<u>10,556</u>	<u>11,949</u>	<u>8,895</u>	<u>10,288</u>
Net current assets					
		<u>10,556</u>	<u>11,949</u>	<u>8,895</u>	<u>10,288</u>
Net assets excluding pension scheme asset/(liability)		53,276	50,815	53,276	50,815
Defined benefit pension scheme asset/(liability)	15	500	(400)	500	(400)
		<u>53,776</u>	<u>50,415</u>	<u>53,776</u>	<u>50,415</u>
Net assets		<u>53,776</u>	<u>50,415</u>	<u>53,776</u>	<u>50,415</u>
Funds					
Unrestricted – General		7,734	7,619	7,734	7,619
– Designated		39,182	36,209	39,182	36,209
		<u>46,916</u>	<u>43,828</u>	<u>46,916</u>	<u>43,828</u>
Unrestricted funds excluding pension asset/(liability)		46,916	43,828	46,916	43,828
Unrestricted – Pension reserve		500	(400)	500	(400)
		<u>47,416</u>	<u>43,428</u>	<u>47,416</u>	<u>43,428</u>
Total unrestricted funds		<u>47,416</u>	<u>43,428</u>	<u>47,416</u>	<u>43,428</u>
Restricted – Endowments		694	640	694	640
– Other		5,666	6,347	5,666	6,347
		<u>6,360</u>	<u>6,987</u>	<u>6,360</u>	<u>6,987</u>
Total funds	14	<u>53,776</u>	<u>50,415</u>	<u>53,776</u>	<u>50,415</u>

Approved and authorised for issue by Council on 16 April 2013 and signed on their behalf by:



Professor Sir Patrick Bateson
President



Paul Rutteman, FCA
Treasurer

The notes on pages 33 to 55 form part of these financial statements.

5. Consolidated Cash Flow Statement

For the year ended 31 December 2012

	<i>Notes</i>	<i>2012</i> <i>£000</i>	<i>2011</i> <i>£000</i>
Net cash inflow from operating activities	18a	4,758	7,305
Returns on investments and servicing of finance			
Interest received on bank and cash balances		223	95
Investment income		110	138
Net cash inflow from returns on investments and servicing of finance		333	233
Capital expenditure and financial investment			
Purchase of tangible fixed assets		(6,768)	(3,284)
Purchase of fixed asset investments		(90)	(69)
Sale of tangible fixed assets		13	2
Sale of fixed asset investments		70	38
Net cash outflow from capital expenditure and financial investment		(6,775)	(3,313)
Net cash (outflow)/inflow before use of liquid resources		(1,684)	4,225
Management of liquid resources and financing			
Decrease/(increase) in cash on short-term deposit		1,995	(4,000)
Increase in cash		311	225
Reconciliation of net cash flow to movement in net cash resources			
		<i>2012</i> <i>£000</i>	<i>2011</i> <i>£000</i>
Increase in cash at bank and in hand		311	225
(Decrease)/increase in cash on short-term deposit		(1,995)	4,000
Change in net cash resources resulting from cash flows		(1,684)	4,225
Net cash resources at 1 January		13,622	9,397
Net cash resources at 31 December	18b	11,938	13,622

The notes on pages 33 to 55 form part of these financial statements.

6. Notes to the Financial Statements

For the year ended 31 December 2012

1. Accounting policies

Accounting convention and basis of preparation

The financial statements are prepared on the going concern basis and under the historical cost convention, modified to include the revaluation of investments, and in accordance with the Charities Act 2011 and applicable accounting standards in the UK (UK GAAP) including the SORP 'Accounting and Reporting by Charities', issued in 2005. The use of the going concern basis of accounting is appropriate because there are no material uncertainties related to events or conditions that may cast significant doubt about the ability of the Charity and group to continue as going concerns.

Consolidation

The financial statements consolidate on a line-by-line basis the results and the assets and liabilities of the Society and its wholly owned subsidiaries – Zoo Operations Limited, Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited. The Society's wholly owned subsidiaries Zoo Restaurants Limited, ZSL (Web of Life) Limited, as well as the Zoological Society of London Development Trust and Biota, for both of which the Council were able to appoint the Trustees, were dissolved in 2011 and had no income or expenditure to the dates of their dissolution.

The Consolidated Statement of Financial Activities represents the results of both the charitable and non-charitable activities of the Society. A separate Statement of Financial Activities for the Charity alone is not produced as permitted by paragraph 397 of the SORP. The results for the activities carried out by the Society's subsidiaries are set out in note 4 in respect of catering and merchandising and in note 10 in respect of other activities.

Funds

The Society maintains a number of internal funds, which include restricted and unrestricted funds:

- (i) Unrestricted – General Fund: The General Fund is the free fund of the Society.
- (ii) Unrestricted – Designated Funds: These funds are derived from donations, grants, bequests and other resources set aside to be used in accordance with the resolutions passed by the Council of the Society. Both the capital and income may be spent. Until expended, the funds are held in cash or tangible fixed assets. Designated funds are as follows:

Students' awards fund – this fund represents resources set aside to meet the cost of an annual prize for best talk, awarded annually at the IoZ student conference, and to fund awards to the IoZ-registered students for travel and subsistence in connection with their research projects. This fund is expected to be fully utilised within the next 10 years.

Tiger SOS fund – this fund represents resources set aside to meet the capital cost of the new tiger exhibit, *Tiger Territory*, which was completed and opened in March 2013 at ZSL London Zoo.

Tangible fixed assets fund – this fund represents those resources that have been used to acquire tangible fixed assets. The value of this fund at the year end represents the net book value of tangible fixed assets.

- (iii) Restricted – Endowment Funds: These funds are derived from bequests to the Society, are held permanently by the Trustees, and comprise investments, the income from which may be used to support Society activities. These funds are as follows:

De Arroyave Fund and Davis Fund – these funds are held permanently by the Trustees, and comprise investments, the income from which, being unrestricted, may be used to support Society activities.

Fantham bequest – this fund is held permanently by the Trustees, and comprises investments, the income from which is to be used to endow a Memorial Research Fellowship for research in parasitology or aquatic animal ecology.

- (iv) Restricted – Other Funds: These funds are as follows:

Scientific fund – this fund was derived from grants and donations and the Society, by trust deed dated 30 May 1991, created a trust over the fund and converted it into a restricted fund that can be used for the 'advancement of zoology and animal physiology'.

Notes to the Financial Statements

For the year ended 31 December 2012

1. Accounting policies (continued)

Tiger SOS fund – this fund is derived from grants and donations for the use of tiger conservation and, in particular, the Sumatran tiger.

Library support fund – the fund represents the resources given for the activities of the library.

HEFCE fund – this fund represents grants received from HEFCE to support the core IoZ science and research activities.

Big Lottery Fund Grant – this fund is funded by the Big Lottery Fund International Communities Programme and is for work being undertaken on the rehabilitation of mangrove forests in the Philippines.

Other funds – these are derived from donations, grants and bequests to be used in accordance with the donor's wishes, which are primarily to fund animal collection, science and research and conservation programme activities and capital expenditure relating thereto.

Fund transfers

Restricted funds are transferred to unrestricted funds in accordance with restrictions upon which the Society may use such restricted funds and include occasions when restricted income has been used, in accordance with donors' instructions, in the acquisition of tangible fixed assets.

Incoming resources

In accordance with the SORP, all incoming resources, including Gift Aid on admissions, becoming receivable by the Society during the year, are recognised in the Consolidated Statement of Financial Activities, regardless of their source or of the purpose to which they are to be put or have been put. The exceptions to this relate to membership income and similar income, which is deferred to the extent that it relates to a service to be provided in future periods, and grants and donations, which are deferred where milestones and conditions for recognition are expected to be met in future periods.

Where income is received for a specific purpose, the income is included in Restricted Funds.

Income from grants is recognised when entitlement is assured, there is certainty of receipt, and when the amount can be reliably measured.

Legacies are recognised when the Society's entitlement is advised by the personal representative of an estate, there is adequate certainty that payment will be made or assets transferred and the amount involved can be reasonably quantified.

Donated services, as they are not reasonably quantifiable or measurable, and the estimated value of volunteer time are not recognised in the Consolidated Statement of Financial Activities but are disclosed in the Trustees' report where relevant.

Resources expended

Expenditure is recognised when a liability is incurred.

Expenditure is allocated to categories in accordance with the main activity of the staff concerned or the substance of the costs incurred as set out in note 6a. Resources expended include the costs of generating funds and charitable expenditure including support, management and administration costs.

Governance costs include those expenses incurred in the governance of the Society's assets and are primarily associated with constitutional and statutory requirements and include an appropriate proportion of senior management time.

Support costs are those costs incurred in support of expenditure on the objectives of the Society and are allocated to the activities set out in note 6a on the basis set out in note 6b.

VAT

Admissions income is treated as VAT exempt and accordingly, as a partially exempt body, ZSL may not recover all VAT paid, with the exception of VAT incurred in connection with the catering and merchandising operations that

Notes to the Financial Statements

For the year ended 31 December 2012

1. Accounting policies (continued)

operate through subsidiary companies. Irrecoverable VAT is included within the category of expenditure to which it related. Catering and merchandising income is stated excluding VAT.

Fixed assets and depreciation

Fixed assets acquired by purchase or gift are shown at cost or valuation and are depreciated (with the exception of freehold land and assets under construction, which are not depreciated) on a straight-line basis at rates appropriate to write off the cost over their expected useful lives. Freehold buildings are depreciated over five to 50 years; leasehold buildings from three years to the shorter of the lease term, and 50 years; plant and equipment five to 15 years; and motor vehicles five years.

Assets under construction consist of expenditure incurred in respect of tangible assets in the course of their construction and installation and which are directly attributable to bringing the asset into operation. Transfers are made to the relevant fixed assets category as and when the assets are available for use.

The carrying values of tangible fixed assets are reviewed for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Tangible fixed assets with a cost below £5,000 are charged to resources expended and are not capitalised.

Foreign currencies

Transactions in foreign currencies are recognised at the rate of exchange at the date of the transaction. Any exchange differences are recognised through the Consolidated Statement of Financial Activities. Foreign exchange monetary assets and liabilities are recognised at the rate of exchange ruling at the balance sheet date.

Investments

Listed investments are included in the balance sheet at market value with gains or losses recognised in the Consolidated Statement of Financial Activities.

Stocks

Stocks are stated at the lower of direct cost and net realisable value.

Animals

The animals are generally acquired by the Society from other zoological organisations at zero cost and a realistic valuation cannot be placed thereon.

Heritage assets

ZSL holds a collection of books and artwork located at the ZSL London Zoo site, which are held to support ZSL's charitable objectives, being the advancement of zoology. The Trustees do not consider that reliable cost or valuation information can be obtained for the vast majority of items held in the collection of books and artwork. This is because of the unique features of the assets held, the number of assets held and the lack of comparable market values. Furthermore, the Trustees believe the cost of obtaining a valuation of these assets would be onerous compared with the benefit that would be derived by users of the accounts in assessing their stewardship of the assets. The Society does not therefore recognise these assets on its Balance Sheet.

The collection of books and artwork are held to advance zoology by facilitating the improvement and dissemination of zoological knowledge.

During the year ended 31 December 2012, there were no acquisitions or disposals of heritage assets (2011: none).

Donated facilities

The Society leases the Regent's Park site from the Department for Culture, Media and Sport. The lease was renewed in 1999 for a term of 56 years at no annual rent. The Trustees do not believe it is possible to reasonably quantify and measure the benefit conferred to the Society under this rent-free arrangement and, as such, have not included the value of this donated facility in the Consolidated Statement of Financial Activities.

Notes to the Financial Statements

For the year ended 31 December 2012

1. Accounting policies (continued)

Advertising costs

Costs incurred in relation to advertising are charged to the Consolidated Statement of Financial Activities at the time the advertisements appear in the media or are otherwise made public. Amounts invoiced but not yet taken to the Consolidated Statement of Financial Activities are included in prepayments and accrued income.

Pension costs

The Society participates in various defined benefit and defined contribution pension schemes.

Defined Benefit Scheme

The cost of providing benefits under the defined benefit plan is determined using the projected unit method, which attributes entitlement to benefits in the current period (to determine current service cost) and to the current and prior periods (to determine the present value of defined benefit obligations) and is based on actuarial advice. Past service costs are recognised in the Consolidated Statement of Financial Activities on a straight-line basis over the vesting period or immediately if the benefits have vested. When a settlement or a curtailment occurs the change in the present value of the scheme liabilities and the fair value of the plan assets reflects the gain or loss, which is recognised in the Consolidated Statement of Financial Activities. Losses are measured at the date that the Society becomes demonstrably committed to the transaction and gains when all parties whose consent is required are irrecoverably committed to the transaction.

The interest element of the defined benefit cost represents the change in present value of scheme obligations relating to the passage of time, and is determined by applying the discount rate to the opening present value of the benefit obligation, taking into account material changes in the obligation during the year. The expected return on plan assets is based on an assessment made at the beginning of the year of long-term market returns on scheme assets, adjusted for the effect on the fair value of plan assets of contributions received and benefits paid during the year. The difference between the expected return on plan assets and the interest costs is recognised in the Consolidated Statement of Financial Activities as pension finance income or within resources expended as appropriate.

Actuarial gains and losses are recognised in full in the Consolidated Statement of Financial Activities in the period in which they occur.

The defined benefit pension asset or liability in the balance sheet comprises the present value of the defined benefit obligation (using a discount rate based on corporate bonds that have been rated at AA or equivalent status), less any past service cost not yet recognised and less the fair value of plan assets out of which the obligations are to be settled directly. Fair value is based on market price information and in the case of quoted securities is the published bid price. The value of the net pension benefit asset is limited to the amount that may be recovered through either reduced contributions or agreed refunds from the scheme.

The Society participates in the Universities Superannuation Scheme (USS), which is a defined benefit scheme and which is contracted out of the State Second Pension (S2P). The assets of the USS scheme are held in a separate fund administered by its trustee, Universities Superannuation Scheme Limited. Because of the mutual nature of the USS scheme, the scheme's assets are not hypothecated to individual institutions and a scheme-wide contribution rate is set. The Society is therefore exposed to actuarial risks associated with other institutions' employees and is unable to identify its share of the underlying assets and liabilities of the scheme on a consistent and reasonable basis. Therefore, as required by FRS 17 'Retirement benefits', it accounts for the scheme as if it were a defined contribution scheme and as a result the amount charged to the Consolidated Statement of Financial Activities represents the contributions payable to the USS in respect of the accounting period.

Defined Contribution Scheme

Contributions to defined contribution schemes are recognised in the Consolidated Statement of Financial Activities in the period in which they become payable. Any unpaid (or prepaid) contributions are separately disclosed within creditors or debtors as required.

Notes to the Financial Statements

For the year ended 31 December 2012

1. Accounting policies (continued)

Leasing commitments

Rentals payable under operating leases are charged to the Consolidated Statement of Financial Activities on a straight-line basis over the lease term.

2. Incoming resources from charitable activities

Animal collections incoming resources include those derived from providing: access to ZSL London Zoo and ZSL Whipsnade Zoo to view the collections and to learn about animals and conservation; animal adoption services; animal-keeping experiences; and animal and conservation educational services inside and outside (outreach programmes) the Zoos.

Incoming resources from charitable activities include grants of £6,143,000 (2011: £5,811,000), which comprise:

	2012	2011
	£000	£000
Higher Education Funding Council for England (HEFCE)	2,219	2,219
Defra (Darwin Initiative)	1,090	751
Big Lottery Fund Grant	51	102
Other grants	2,783	2,739
	<u>6,143</u>	<u>5,811</u>

3. Voluntary income

Voluntary income includes gifts, legacies and donations including those given at the Zoo gates from visitors.

4. Income from subsidiaries' trading activities

The Society wholly owns Zoo Operations Limited, which is the investment holding company for its wholly owned companies, Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited. Merchandising and catering are undertaken by these subsidiary companies. The consolidated results of Zoo Operations Limited comprise those of Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited. Taxable net profits are donated to the Society annually.

The turnover and net contribution to the Society from catering and merchandising in Zoo Enterprises Limited (ZEL) and Whipsnade Wild Animal Park Limited (WWAPL) were as follows:

	2012			2011		
	ZEL	WWAPL	Total	ZEL	WWAPL	Total
	£000	£000	£000	£000	£000	£000
Turnover:						
Catering	3,249	1,689	4,938	4,018	1,834	5,852
Merchandising	3,165	1,226	4,391	3,151	1,007	4,158
	<u>6,414</u>	<u>2,915</u>	<u>9,329</u>	<u>7,169</u>	<u>2,841</u>	<u>10,010</u>
Cost of activities	(4,049)	(2,229)	(6,278)	(4,522)	(2,078)	(6,600)
Catering and merchandising (net)	2,365	686	3,051	2,647	763	3,410
Support and overhead costs	(643)	(407)	(1,050)	(692)	(440)	(1,132)
Interest receivable	7	–	7	9	–	9
Group interest receivable/(payable)	(5)	5	–	(5)	5	–
	<u>1,724</u>	<u>284</u>	<u>2,008</u>	<u>1,959</u>	<u>328</u>	<u>2,287</u>
Net profit for the year before donation	1,724	284	2,008	1,959	328	2,287
Gift Aid donation to the Society	(1,724)	(284)	(2,008)	(1,959)	(328)	(2,287)
	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>
Retained in subsidiary companies	–	–	–	–	–	–

Notes to the Financial Statements

For the year ended 31 December 2012

4. Income from subsidiaries' trading activities (continued)

Catering and merchandising turnover at ZSL London Zoo is generated by Zoo Enterprises Limited and at ZSL Whipsnade Zoo by Whipsnade Wild Animal Park Limited. Catering and shops turnover of £9,329,000 (2011: £10,010,000) is included in the Consolidated Statement of Financial Activities within subsidiaries' trading turnover. Cost of activities, support and overhead costs of £7,328,000 (2011: £7,732,000) are included within fundraising trading while interest receivable of £7,000 (2011: £9,000) is included within interest and investment income.

5. Interest and investment income

	2012 £000	2011 £000
Interest on bank and cash balances	219	116
Investment income:		
Other (UK)	125	130
Pension finance income	–	200
	<u>344</u>	<u>446</u>
	<u><u>344</u></u>	<u><u>446</u></u>

6a. Group analysis of total resources expended

	<i>Staff costs £000</i>	<i>Direct costs £000</i>	<i>Other support costs £000</i>	<i>Total 2012 £000</i>	<i>Total 2011 £000</i>
Charitable activities:					
Animal collections	10,339	10,949	2,446	23,734	23,667
Science and research	2,431	2,452	740	5,623	5,731
Conservation programmes	1,555	2,050	508	4,113	3,654
	<u>14,325</u>	<u>15,451</u>	<u>3,694</u>	<u>33,470</u>	<u>33,052</u>
Costs of generating funds:					
Costs of generating voluntary income	406	265	124	795	641
Subsidiaries' costs of goods sold and other costs	2,821	3,872	635	7,328	7,732
Governance costs	–	183	16	199	181
Total resources expended for Group in 2012	<u>17,552</u>	<u>19,771</u>	<u>4,469</u>	<u>41,792</u>	
Total resources expended for Group in 2011	<u>17,931</u>	<u>19,177</u>	<u>4,498</u>		<u>41,606</u>

Notes to the Financial Statements

For the year ended 31 December 2012

6b. Analysis of support costs

	2012 £000	2011 £000
Staff costs	2,273	1,796
Other costs	2,196	2,702
	<u>4,469</u>	<u>4,498</u>

Support costs consist of Finance, Information Technology, Human Resources, Press Office, Reception and Switchboard and Central Management services. These have been allocated to the activities in note 6a as follows:

Finance: on volume of transactions processed in year.

Human Resources/Reception and Switchboard: on Head Count.

Information Technology: on the number of PCs and electronic tills.

Press Office: on time apportionment.

Central Management services: on total expenditure by activity.

7. Net incoming resources before other recognised gains/(losses)

Net incoming resources before other recognised gains/(losses) is stated after charging the following items:

	2012 £000	2011 £000
Auditors' remuneration:		
Audit services – charged by Baker Tilly UK Audit LLP	79	75
Non-audit services – charged by Baker Tilly Tax and Accounting Limited and Baker Tilly Tax and Advisory Services Limited	34	29
Depreciation of fixed assets	3,064	3,125
Loss on disposal of tangible fixed assets	80	44
Operating lease rentals in respect of:		
Plant and equipment	373	210
Other	70	46
Trustees' expenses	5	5
	<u> </u>	<u> </u>

Trustees' expenses consist mainly of the reimbursement of travel expenses. In the current year these Trustees' expenses relate to nine (2011: nine) Trustees who served as Council members during the year. None of the Trustees, nor any persons connected to the Trustees, received remuneration for their services.

The Society pays the insurance premiums on behalf of the Trustees in respect of professional indemnity insurance. The premium paid is incorporated with the general professional liability premiums and so is not separately disclosable.

There are no other reportable transactions with related parties.

The auditors' remuneration for non-audit services is in respect of fees in connection with general tax advice and agreed upon procedures on specific grants.

Notes to the Financial Statements

For the year ended 31 December 2012

8. Staff costs

	<i>2012</i>	<i>2011</i>
	<i>£000</i>	<i>£000</i>
Salaries and wages	16,965	16,571
Social security costs	1,591	1,562
Pension cost	1,269	1,594
	<u>19,825</u>	<u>19,727</u>

The pension cost benefits from a curtailment gain of £300,000 (2011: £nil) following the transfer of some members out of the scheme.

In addition, the cost of temporary staff in the year was £248,000 (2011: £292,000).

The average full-time equivalent number of employees during the year was as follows:

	<i>2012</i>	<i>2011</i>
	<i>No.</i>	<i>No.</i>
Animal collections	359	352
Science and research	59	62
Conservation programmes	50	43
Cost of generating funds – voluntary income	10	9
Cost of generating funds – voluntary trading	105	110
Support costs	64	58
	<u>647</u>	<u>634</u>

The number of employees' emoluments in excess of £60,000 p.a. (higher-paid employees) exclusive of pension contributions were:

Band	<i>2012</i>	<i>2011</i>
	<i>No.</i>	<i>No.</i>
£60,001 – £70,000	4	3
£70,001 – £80,000	2	2
£80,001 – £90,000	4	3
£90,001 – £100,000	–	1
£150,001 – £160,000	1	1

In respect of higher-paid employees amounts of £42,927 (2011: £42,684) were made to defined contribution pension schemes and retirement benefits for higher-paid employees are accruing under:

- a) defined benefit schemes only for five (2011: four) individuals;
- b) defined contribution schemes only for two (2011: two) individuals;
- c) defined benefit schemes and defined contribution schemes for four (2011: four) individuals.

Notes to the Financial Statements

For the year ended 31 December 2012

9. Tangible fixed assets

<i>Group and Charity</i>	<i>Freehold land and buildings £000</i>	<i>Buildings on leased land £000</i>	<i>Assets under construction £000</i>	<i>Plant and equipment £000</i>	<i>Motor vehicles £000</i>	<i>Total £000</i>
Cost:						
At 31 December 2011	17,884	43,851	57	7,158	844	69,794
Additions during the year	1,865	1,393	3,611	294	99	7,262
Reduction in costs previously capitalised	(109)	(385)	–	–	–	(494)
Disposals and impairments	–	(569)	–	(370)	(57)	(996)
At 31 December 2012	19,640	44,290	3,668	7,082	886	75,566
Depreciation:						
At 31 December 2011	9,532	18,654	–	5,731	698	34,615
Provided during the year	938	1,721	–	416	62	3,137
Reduction in depreciation as a result of reduction in costs previously capitalised	–	(73)	–	–	–	(73)
Disposals and impairments	–	(494)	–	(352)	(57)	(903)
At 31 December 2012	10,470	19,808	–	5,795	703	36,776
Net book value:						
At 31 December 2012	9,170	24,482	3,668	1,287	183	38,790
At 31 December 2011	8,352	25,197	57	1,427	146	35,179

A VAT refund of £494k was received in the year that related to irrecoverable VAT which had been capitalised in previous periods.

All tangible fixed assets are held by ZSL and, substantially, all are used for the charitable purposes of the Society.

The land at ZSL Whipsnade Zoo was purchased by the Society many years ago at negligible cost. In the absence of a formal valuation, it is not considered practicable to quantify the market value of the land at Whipsnade.

The Trustees are not aware of any other material difference between the carrying value and the market value of land and buildings.

Notes to the Financial Statements

For the year ended 31 December 2012

10. Investments

Group	Value at	Additions	Proceeds on	Net gains/(losses)		Value at
	31 December			at cost	disposals	Realised
	2011	at cost	disposals	Realised	Unrealised	2012
	£000	£000	£000	£000	£000	£000
Listed investments at market value:						
Fixed interest (UK)	2	2	(2)	-	-	2
Other (UK)	3,685	88	(68)	-	223	3,928
	<u>3,687</u>	<u>90</u>	<u>(70)</u>	<u>-</u>	<u>223</u>	<u>3,930</u>
<i>Charity</i>						
Unlisted investments at net asset value:						
Investment in Zoo Operations Limited	1,661	-	-	-	-	1,661
	<u>5,348</u>	<u>90</u>	<u>(70)</u>	<u>-</u>	<u>223</u>	<u>5,591</u>
Listed investments historical cost	<u>3,381</u>					<u>3,401</u>

The unlisted investment in the wholly owned subsidiary, Zoo Operations Limited, is carried in the Charity balance sheet at its net asset value and has remained as the investment holding company for its wholly owned subsidiaries Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited and is incorporated in the UK.

Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited undertake the merchandising and catering operations at ZSL London Zoo and ZSL Whipsnade Zoo respectively and Gift Aid their profits to ZSL annually. The results of Zoo Enterprises Limited and Whipsnade Wild Animal Park Limited are set out in note 4.

The value of investments at 31 December 2012 of £5,591,000 included the following:

	£000
Newton SRI Fund for Charities	3,286
M&G Charifund	576
Zoo Operations Limited	1,661

The financial position of the individual subsidiaries was as follows:

	Assets	Liabilities	Funds	Assets	Liabilities	Funds
	2012	2012	2012	2011	2011	2011
	£000	£000	£000	£000	£000	£000
Zoo Operations Limited	1,661	-	1,661	1,661	-	1,661
Zoo Enterprises Limited	2,276	(2,174)	102	1,663	(1,561)	102
Whipsnade Wild Animal Park Limited	932	(575)	357	548	(191)	357
	<u>4,869</u>	<u>(2,749)</u>	<u>2,120</u>	<u>3,872</u>	<u>(1,752)</u>	<u>2,120</u>

Notes to the Financial Statements

For the year ended 31 December 2012

11. Stocks

	<i>Group</i>		<i>Charity</i>	
	<i>2012</i>	<i>2011</i>	<i>2012</i>	<i>2011</i>
	<i>£000</i>	<i>£000</i>	<i>£000</i>	<i>£000</i>
Raw materials	135	136	135	136
Finished goods and goods for resale	554	594	1	1
	<u>689</u>	<u>730</u>	<u>136</u>	<u>137</u>
	<u><u>689</u></u>	<u><u>730</u></u>	<u><u>136</u></u>	<u><u>137</u></u>

12. Debtors

	<i>Group</i>		<i>Charity</i>	
	<i>2012</i>	<i>2011</i>	<i>2012</i>	<i>2011</i>
	<i>£000</i>	<i>£000</i>	<i>£000</i>	<i>£000</i>
Trade debtors	1,336	1,011	805	490
Amounts owed by group companies	–	–	2,008	883
Taxation and social security	–	–	92	–
Other debtors	169	126	169	126
Accrued interest and investment income	96	85	96	85
Prepayments and accrued income	2,483	2,174	2,322	2,128
	<u>4,084</u>	<u>3,396</u>	<u>5,492</u>	<u>3,712</u>
	<u><u>4,084</u></u>	<u><u>3,396</u></u>	<u><u>5,492</u></u>	<u><u>3,712</u></u>

13. Creditors: amounts falling due within one year

	<i>Group</i>		<i>Charity</i>	
	<i>2012</i>	<i>2011</i>	<i>2012</i>	<i>2011</i>
	<i>£000</i>	<i>£000</i>	<i>£000</i>	<i>£000</i>
Trade creditors	1,930	1,569	1,730	1,183
Amounts owed to group companies	–	–	1,656	1,327
Taxation and social security	501	577	414	391
Accruals and deferred income	3,309	3,444	3,165	3,302
Other creditors	415	209	380	201
	<u>6,155</u>	<u>5,799</u>	<u>7,345</u>	<u>6,404</u>
	<u><u>6,155</u></u>	<u><u>5,799</u></u>	<u><u>7,345</u></u>	<u><u>6,404</u></u>

Notes to the Financial Statements

For the year ended 31 December 2012

13. Creditors: amounts falling due within one year (continued)

The movement in deferred income included within creditors: amounts falling due within one year is analysed below:

	<i>Group</i>		<i>Charity</i>	
	<i>2012</i>	<i>2011</i>	<i>2012</i>	<i>2011</i>
	<i>£000</i>	<i>£000</i>	<i>£000</i>	<i>£000</i>
Deferred income at 1 January	2,535	2,275	2,506	2,275
Amounts released from previous years	(2,535)	(2,216)	(2,506)	(2,216)
Incoming resources deferred	2,520	2,476	2,408	2,447
	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Deferred income at 31 December	2,520	2,535	2,408	2,506
	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Deferred income comprises membership and similar income, which relates to services that will be provided in future periods, and grants and donations where milestones and conditions for recognition are expected to be met in future periods.

Notes to the Financial Statements

For the year ended 31 December 2012

14. Funds

A full description of the individual fund categories and their purpose is set out in note 1.

(a) Movement of funds for the year – Group

	<i>Balance at 31 Dec 2011 £000</i>	<i>Incoming resources £000</i>	<i>Resources expended £000</i>	<i>Transfers £000</i>	<i>Other gains & (losses) £000</i>	<i>Balance at 31 Dec 2012 £000</i>
<i>Unrestricted funds</i>						
General fund *	7,219	36,567	(35,081)	(851)	380	8,234
<i>Designated funds:</i>						
Students' awards fund	15	–	(2)	–	–	13
Tiger SOS	1,015	–	–	(636)	–	379
Tangible fixed asset fund	35,179	–	–	3,611	–	38,790
	<u>36,209</u>	<u>–</u>	<u>(2)</u>	<u>2,975</u>	<u>–</u>	<u>39,182</u>
<i>Restricted funds</i>						
<i>Endowment funds:</i>						
De Arroyave fund	564	–	–	–	54	618
Fantham bequest	72	1	–	–	(1)	72
Davis fund	4	–	–	–	–	4
	<u>640</u>	<u>1</u>	<u>–</u>	<u>–</u>	<u>53</u>	<u>694</u>
<i>Other funds:</i>						
Scientific fund	1,863	53	–	(80)	90	1,926
Tiger SOS	1,685	259	(2)	(1,932)	–	10
Library support fund	100	–	–	–	–	100
HEFCE fund	(158)	2,219	(2,025)	–	–	36
Big Lottery Fund Grant	61	51	(70)	–	–	42
Other	2,796	5,480	(4,612)	(112)	–	3,552
	<u>6,347</u>	<u>8,062</u>	<u>(6,709)</u>	<u>(2,124)</u>	<u>90</u>	<u>5,666</u>
Total funds	<u><u>50,415</u></u>	<u><u>44,630</u></u>	<u><u>(41,792)</u></u>	<u><u>–</u></u>	<u><u>523</u></u>	<u><u>53,776</u></u>

Fund transfers of £636,000 have been made from the designated Tiger SOS fund and £1,932,000 from the restricted Tiger SOS fund to the unrestricted General fund to help meet the capital cost of the new tiger exhibit, *Tiger Territory*. Fund transfers of £3,611,000 have been made to the designated Tangible fixed asset fund from the General fund, which was set up to separately identify the resources that have been used to acquire tangible fixed assets. The value of this fund at the year end represents the net book value of tangible fixed assets.

Fund transfers of £80,000 from the Scientific fund were made to other restricted funds, and fund transfers of £112,000 were made from restricted funds to unrestricted funds in accordance with restrictions upon which the Society may use such restricted funds.

* Incorporating the unrestricted pension asset at 31 December 2012, being £500,000 (2011: liability £400,000).

Notes to the Financial Statements

For the year ended 31 December 2012

14. Funds (continued)

(b) Movement of funds for the year – Charity

	Balance at 31 Dec 2011 £000	Incoming resources £000	Resources expended £000	Transfers £000	Other gains & (losses) £000	Balance at 31 Dec 2012 £000
<i>Unrestricted funds</i>						
General fund *	7,219	29,239	(27,753)	(851)	380	8,234
Designated funds:						
Students' awards fund	15	–	(2)	–	–	13
Tiger SOS	1,015	–	–	(636)	–	379
Tangible fixed asset fund	35,179	–	–	3,611	–	38,790
	36,209	–	(2)	2,975	–	39,182
<i>Restricted funds</i>						
Endowment funds:						
De Arroyave fund	564	–	–	–	54	618
Fantham bequest	72	1	–	–	(1)	72
Davis fund	4	–	–	–	–	4
	640	1	–	–	53	694
Other funds:						
Scientific fund	1,863	53	–	(80)	90	1,926
Tiger SOS	1,685	259	(2)	(1,932)	–	10
Library support fund	100	–	–	–	–	100
HEFCE fund	(158)	2,219	(2,025)	–	–	36
Big Lottery Fund Grant	61	51	(70)	–	–	42
Other	2,796	5,480	(4,612)	(112)	–	3,552
	6,347	8,062	(6,709)	(2,124)	90	5,666
Total funds	50,415	37,302	(34,464)	–	523	53,776

Incoming resources of the Charity amounted to £37,302,000 (2011: £38,113,000) and its net movement in funds amounted to a £3,361,000 increase (2011: £2,916,000 increase).

Fund transfers of £636,000 have been made from the designated Tiger SOS fund and £1,932,000 from the restricted Tiger SOS fund to the unrestricted General fund to help meet the capital cost of the new tiger exhibit, *Tiger Territory*. Fund transfers of £3,611,000 have been made to the designated Tangible fixed asset fund from the General fund, which was set up to separately identify the resources that have been used to acquire tangible fixed assets. The value of this fund at the year end represents the net book value of tangible fixed assets.

Fund transfers of £80,000 from the Scientific fund were made to other restricted funds, and fund transfers of £112,000 were made from restricted funds to unrestricted funds in accordance with restrictions upon which the Society may use such restricted funds.

* Incorporating the unrestricted pension asset at 31 December 2012, being £500,000 (2011: liability £400,000).

Notes to the Financial Statements

For the year ended 31 December 2012

14. Funds (continued)

(c) Analysis of Group net assets between funds:

	<i>Tangible assets £000</i>	<i>Investments £000</i>	<i>Other net assets £000</i>	<i>Total £000</i>
Unrestricted funds	38,790	1,438	7,188	47,416
Restricted funds				
– Endowment funds	–	644	50	694
– Big Lottery Fund Grant	–	–	42	42
– Other funds	–	1,848	3,776	5,624
	<hr/>	<hr/>	<hr/>	<hr/>
Total group net assets	38,790	3,930	11,056	53,776
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

15. Pension schemes

The Society has contributed to both defined benefit and defined contribution schemes during the year. Defined benefit schemes are accounted for as if they were defined contribution schemes if required by FRS 17 'Retirement benefits', and employees join the appropriate scheme, depending on employment terms. The total cost to the Society for the year ended 31 December in respect of pension contributions, which have been allocated between resources expended categories in proportion to staff costs and charged to the Consolidated Statement of Financial Activities as appropriate, are as follows:

	<i>2012 £000</i>	<i>2011 £000</i>
Defined benefit scheme contributions	1,000	1,300
Defined contribution schemes	269	294
	<hr/>	<hr/>
	1,269	1,594
	<hr/> <hr/>	<hr/> <hr/>

At 31 December 2012 there were outstanding employers and employees contributions, including any additional voluntary contributions, to the scheme as follows:

	<i>2012 £000</i>	<i>2011 £000</i>
Defined benefit scheme contributions	120	126
Defined contribution schemes	48	30
	<hr/>	<hr/>
	168	156
	<hr/> <hr/>	<hr/> <hr/>

Most employees who participate in a scheme do so in either the Zoological Society 1988 Pension Scheme (ZS 1988), which is the Society's own self-administered occupational pension scheme, or the Universities Superannuation Scheme (USS), which is contracted out of the State Second Pension (S2P). Whilst the ZS 1988 scheme is now closed to employees joining after 30 June 2011, a new stakeholder-defined contribution scheme is available for those employees.

Zoological Society 1988 Pension Scheme (ZS 1988)

The ZS 1988 scheme is a defined benefit scheme and is valued every three years by a professionally qualified independent actuary and payments to the scheme are made based on actuarial advice. This scheme is now closed to employees joining after 30 June 2011.

Notes to the Financial Statements

For the year ended 31 December 2012

15. Pension schemes (continued)

The Society operates the ZS 1988 defined benefit scheme in the UK for staff, which is now closed to employees joining after 30 June 2011. The last actuarial valuation was carried out as at 30 June 2011 and was updated to 31 December 2012 by a qualified independent actuary. The pension expense charged in the Consolidated Statement of Financial Activities includes an allowance for the actuarial gains and losses incurred during the year they occur, and these actuarial gains and losses are disclosed separately in the Consolidated Statement of Financial Activities.

	<i>At year-end</i> <i>31 December</i> <i>2012</i> <i>£000</i>	<i>At year-end</i> <i>31 December</i> <i>2011</i> <i>£000</i>
Change in benefit value of obligation		
Benefit obligation at beginning of year	28,200	26,700
Current service cost	1,300	1,300
Current interest cost	1,300	1,400
Actuarial losses/(gains)	1,600	(400)
Benefits paid	(1,000)	(800)
Plan curtailments	(300)	–
	<hr/>	<hr/>
Benefit obligation at end of year	31,100	28,200
	<i>At year-end</i> <i>31 December</i> <i>2012</i> <i>£000</i>	<i>At year-end</i> <i>31 December</i> <i>2011</i> <i>£000</i>
Change in plan assets		
Fair value of plan assets at the beginning of the year	27,800	27,000
Expected return on plan assets	1,300	1,600
Actuarial (loss)/gain	1,900	(1,500)
Employer contribution	1,600	1,500
Benefits paid	(1,000)	(800)
	<hr/>	<hr/>
Fair value of plan assets at end of year	31,600	27,800
Analysis of defined benefit obligation		
Present value of wholly or partly funded obligations	31,100	28,200
Fair value of plan assets	31,600	27,800
	<hr/>	<hr/>
(Surplus)/deficit for funded plans	(500)	400
	<hr/>	<hr/>
Net (asset)/liability	(500)	400
	<hr/>	<hr/>
Liabilities	–	400
Assets	(500)	–
	<hr/>	<hr/>
Net (asset)/liability	(500)	400
	<hr/> <hr/>	<hr/> <hr/>

Notes to the Financial Statements

For the year ended 31 December 2012

15. Pension schemes (continued)

	<i>At year-end</i> 31 Dec 2012 £000	<i>At year-end</i> 31 Dec 2011 £000
Components of pension cost		
Current service cost	1,300	1,300
Interest cost	1,300	1,400
Expected return on pension plan assets	(1,300)	(1,600)
Actuarial (gains)/losses immediately recognised during the year	(300)	1,100
Curtailement gain	(300)	–
	<hr/>	<hr/>
Total pension cost recognised in Group Statement of Financial Activities	700	2,200
	<hr/> <hr/>	<hr/> <hr/>
Cumulative amount of actuarial losses immediately recognised	3,700	4,000
	<hr/> <hr/>	<hr/> <hr/>
Actual return on plan assets	3,200	100
	<hr/> <hr/>	<hr/> <hr/>

Weighted average assumptions used to determine benefit obligations at:

	<i>31 December</i> 2012 %	<i>31 December</i> 2011 %
Discount rate	4.5	4.7
Rate of salary increase	3.9	4.0
Rate of price inflation (Retail Price Index)	2.9	3.0
Rate of price inflation (Consumer Price Index)	2.2	2.2
Rate of pension increases:		
Retail Price Index capped at 5%	2.9	2.9
Retail Price Index capped at 5% subject to a minimum of 3%	3.5	3.6

Weighted average assumptions used to determine net pension cost:

	<i>31 December</i> 2012 %	<i>31 December</i> 2011 %
Discount rate	4.7	5.3
Expected long-term rate of return on plan assets	4.8	5.7
Rate of salary increase	4.0	4.4
Rate of price inflation (Retail Price Index)	3.0	3.4
Rate of price inflation (Consumer Price Index)	2.2	2.9
Rate of pension increases:		
Retail Price Index capped at 5%	2.9	3.0
Retail Price Index capped at 5% subject to a minimum of 3%	3.6	3.7

Notes to the Financial Statements

For the year ended 31 December 2012

15. Pension schemes (continued)

Average life expectancy on retirement age at 65

	31 December 2012		31 December 2011	
	Male	Female	Male	Female
Member age 65 (current life expectancy)	23.2	25.7	22.9	25.2
Member age 45 (life expectancy at age 65)	25.0	27.7	24.3	26.8

Plan assets

Percentage of plan assets by asset allocation

Asset category:	Plan assets at 31 December 2012		Plan assets at 31 December 2011	
	%		%	
Equity securities	68.0		67.5	
Debt securities	28.6		29.2	
Property	1.5		1.7	
Other	1.9		1.6	
Total	100.0		100.0	

Expected return on assets by asset allocation

Asset category:	Plan assets at 31 December 2012		Plan assets at 31 December 2011	
	%		%	
Equity securities	6.1		6.1	
Debt securities	3.6		3.9	
Property	5.6		5.6	
Other	0.5		0.5	
Total *	4.7		4.8	

* The total expected return on asset assumptions shown above are net figures after making allowance for expenses of 0.6% p.a. as at 31 December 2011 and as at 31 December 2012.

To develop the assumption for the expected long-term rate of return on assets assumption, the Trustees considered the current level of expected returns on risk-free investments (primarily government bonds), the historical level of the risk premium associated with the other asset classes in which the portfolio is invested, the expectations for future returns on each asset class and the expected expenses of the Scheme. The expected return for each asset class was then weighted based on the actual asset allocation to develop the expected long-term rate of return on assets assumption for the portfolio. This resulted in the selection of the 4.7% p.a. assumption at 31 December 2012.

Notes to the Financial Statements

For the year ended 31 December 2012

15. Pension schemes (continued)

Five-year history of experience gains and losses

	2012	2011	2010	2009	2008
	£000	£000	£000	£000	£000
Benefit obligation	31,100	28,200	26,700	23,300	19,900
Fair value of plan assets	31,600	27,800	27,000	23,300	19,500
Deficit/(surplus)	(500)	400	(300)	–	400
Difference between the expected and actual return on plan assets:					
amount	(1,900)	1,500	(1,400)	(1,900)	5,700
percentage of scheme assets	(6)%	6%	(5)%	(8)%	29%
Experience (gain)/loss on plan liabilities:					
amount	–	(1,800)	–	–	200
percentage of scheme assets	–	(6)%	–	–	1%

Contributions

There were outstanding contributions payable to the Scheme of £120,000 (2011: £126,000) at 31 December 2012 and the Society expects to pay £1,600,000 into the scheme in 2013.

Universities Superannuation Scheme (USS)

The Society participates in USS, a defined benefit scheme which is contracted out of the State Second Pension (S2P). The assets of the USS scheme are held in a separate fund administered by its trustee, Universities Superannuation Scheme Limited.

Because of the mutual nature of the USS scheme, the scheme's assets are not hypothecated to individual institutions and a scheme-wide contribution rate is set. The Society is therefore exposed to actuarial risks associated with other institutions' employees and is unable to identify its share of the underlying assets and liabilities of the scheme on a consistent and reasonable basis and therefore, as required by FRS 17 'Retirement benefits', accounts for the scheme as if it were a defined contribution scheme. As a result, the amount charged to the Consolidated Statement of Financial Activities represents the contributions payable to the USS in respect of the accounting period.

The appointment of Directors to the Board of the trustee is determined by the trustee company's Articles of Association. Four of the Directors are appointed by Universities UK; three are appointed by the University and College Union, of whom at least one must be a USS pensioner member; and a minimum of two and a maximum of four are co-opted directors appointed by the Board. Under the scheme trust deed and rules, the employer contribution rate is determined by the trustee, acting on actuarial advice.

The latest actuarial valuation of the scheme was at 31 March 2011. This was the second valuation for USS under the scheme-specific funding regime introduced by the Pension Act 2004, which requires schemes to adopt a statutory funding objective, which is to have sufficient and appropriate assets to cover their technical provisions. The actuary also carries out regular reviews of fund levels. In particular, he carries out a review of the funding level each year between triennial valuations and details of his estimate of the funding level at 31 March 2012 are also included in this note.

The triennial valuation was carried out using the projected unit method. The assumptions which have the most significant effect on the result of the valuation are those relating to the rate of return on investments (ie the valuation rate of interest), the rates of increase in salary and pensions and the assumed rates of mortality. The financial assumptions were derived from market yields prevailing at the valuation date. An 'inflation risk premium' adjustment was also included by deducting 0.3% from the market-implied inflation on account of the historically high-level inflation implied by government bonds (particularly when compared with the Bank of England's target of 2% for CPI, which corresponds broadly to 2.75% for RPI per annum).

Notes to the Financial Statements

For the year ended 31 December 2012

15. Pension schemes (continued)

To calculate the technical provisions, it was assumed that the valuation rate of interest would be 6.1% p.a., salary increases would be 4.4% p.a. (with short-term general pay growth 0.65% p.a. and an additional allowance for increases in salaries due to age and promotion reflecting historic scheme experience, with a further cautionary reserve on top for past service liabilities) and pensions would increase by 3.4% p.a. for three years following the valuation then 2.6% p.a. thereafter.

Standard mortality tables were used as follows:

Male members' mortality	S1NA ["light"] YoB tables – no age rating
Female members' mortality	S1NA ["light"] YoB tables – rated down one year

Use of these mortality tables reasonably reflects the actual USS experience, but also provides an element of conservatism to allow for further improvements in mortality rates. The CMI 2009 projections with a 1.25% pa long-term rate were also adopted. The assumed life expectations on retirement at age 65 are:

Males (females) currently aged 65	23.7 (25.6) years
Male (females) currently aged 45	25.5 (27.6) years

At the valuation date, the value of assets of the scheme was £32,433.5m and the value of the scheme's technical provisions was £35,343.7m, indicating a shortfall of £2,910.2m. The assets therefore were sufficient to cover 92% of the benefits which had accrued to members after allowing for expected future increases in earnings.

The actuary also valued the scheme on a number of other bases at the valuation date. On the scheme's historic gilts basis, using a valuation rate of interest in respect of past service liabilities of 4.4% p.a. (the expected return on gilts), the funding level was approximately 68%. Under the Pension Protection Fund regulations introduced by the Pensions Act 2004, the scheme was 93% funded; on a buy-out basis (ie assuming the scheme had discontinued on the valuation date) the assets would have been approximately 57% of the amount necessary to secure all the USS benefits with an insurance company; and using the FRS 17 formula as if USS was a single-employer scheme, using an AA bond discount rate of 5.5% p.a. based on spot yields, the actuary estimated that the funding level at 31 March 2011 was 82%.

As part of this valuation, the trustees have determined, after consultation with the employers, a recovery plan to pay off the shortfall by 31 March 2021. The next formal triennial actuarial valuation is at 31 March 2014. If experience up to that date is in line with the assumptions made for this current actuarial valuation and contributions are paid at the determined rates or amounts, the shortfall at 31 March 2014 is estimated to be £2.2bn, equivalent to a funding level of 95%. The contribution rate will be reviewed as part of each valuation and may be reviewed more frequently.

The technical provisions relate essentially to the past service liabilities and funding levels, but it is also necessary to assess the ongoing cost of newly accruing benefits. The cost of future accrual was calculated using the same assumptions as those used to calculate the technical provisions, but the allowance for promotional salary increases was not as high. Analysis has shown very variable levels of growth over and above general pay increases in recent years, and the salary growth assumption built into the cost of future accrual is based on more stable, historic, salary experience. However, when calculating the past service liabilities of the scheme, a cautionary reserve has been included, in addition, on account of the variability mentioned above.

At the valuation date the scheme was still a fully Final Salary Scheme for future accruals and the prevailing employer contribution rate was 16% of salaries.

Following UK government legislation, from 2011 statutory pension increases or revaluations are based on the Consumer Prices Index measure of price inflation. Historically these increases had been based on the Retail Prices Index measure of price inflation.

Notes to the Financial Statements

For the year ended 31 December 2012

15. Pension schemes (continued)

Since the previous valuation as at 31 March 2008 there have been a number of changes to the benefits provided by the scheme, which became effective from October 2011. These include:

New entrants

Other than in specific, limited circumstances, new entrants are now provided on a Career Revalued Benefits (CRB) basis rather than a Final Salary (FS) basis.

Normal pension age

The normal pension age was increased for future service and new entrants, to age 65.

Flexible retirement

Flexible retirement options were introduced.

Member contributions increased

Contributions were uplifted to 7.5% p.a. and 6.5% p.a. for FS Section members and CRB Section members, respectively.

Cost sharing

If the total contribution level exceeds 23.5% of Salaries p.a., the employers will pay 65% of the excess over 23.5% and members will pay the remaining 35% to the fund as additional contributions.

Pension increase cap

For service derived after 30 September 2011, USS will match increases in the official pensions for the first 5%. If official pensions increase by more than 5% then USS will pay half of the difference up to a maximum increase of 10%.

Since 31 March 2011 global investment markets have continued to fluctuate and following its peak in September 2011 inflation has declined rapidly towards the year end, although the market's assessment of inflation has remained reasonably constant. The actuary has estimated that the funding level as at 31 March 2012 under the scheme-specific funding regime had fallen from 92% to 77%. This estimate is based on the results from the valuation at 31 March 2011 allowing primarily for investment returns and changes to market conditions. These are cited as the two most significant factors affecting the funding positions which have been taken into account for the 31 March 2012 estimation.

On the FRS 17 basis, using an AA bond discount rate of 4.9% p.a. based on spot yields, the actuary calculated that the funding level at 31 March 2012 was 74%. An estimate of the funding level measured on a historic gilts basis at that date was approximately 56%.

Surpluses or deficits which arise at future valuations may impact on ZSL's future contribution commitment. A deficit may require additional funding in the form of higher contribution requirements, where a surplus could, perhaps, be used to similarly reduce contribution requirements. The sensitivities regarding the principal assumptions used to measure the scheme liabilities on a technical provisions basis as at the date of the last triennial valuation are set out below:

Assumption	Change in assumption	Impact on scheme liabilities
Investment return	Decrease by 0.25%	Decrease by £1.6bn
The gap between RPI and CPI	Decrease by 0.25%	Increase by £0.6bn
Members live longer than assumed	One year longer	Increase by £0.8bn
Equity markets in isolation	Fall by 25%	Increase by £4.6bn

USS is a 'last man standing' scheme so that in the event of the insolvency of any of the participating employers in USS, the amount of any pension funding shortfall (which cannot otherwise be recovered) in respect of that employer will be spread across the remaining participant employers and reflected in the next actuarial valuation of the scheme.

Notes to the Financial Statements

For the year ended 31 December 2012

15. Pension schemes (continued)

The Trustees believe that over the long term equity investment and investment in selected alternative asset classes will provide superior returns to other investment classes. The management structure and targets set are designed to give the fund a major exposure to equities through portfolios that are diversified both geographically and by sector. The trustee recognises that it would be theoretically possible to select investments producing income flows broadly similar to estimated liability cash flows. However, in order to meet the long-term funding objective within a level of contributions that it considers the employers would be willing to make, the trustee needs to take on a degree of investment risk relative to the liabilities. This taking of investment risk seeks to target a greater return than the matching assets would provide while maintaining a prudent approach to meeting the fund's liabilities. Before deciding what degree of investment risk to take relative to the liabilities, the trustee receives advice from its internal investment team, its investment consultant and the scheme actuary, and considers the views of the employers.

The positive cash flow of the scheme means that it is not necessary to realise investments to meet liabilities. The trustee believes that this, together with the ongoing flow of new entrants into the scheme and the strength of covenant of the employers, enables it to take a long-term view of its investments. Short-term volatility of returns can be tolerated and need not feed through directly to the contribution rate, although the trustee is mindful of the desirability of keeping the funding level on the scheme's technical provisions close to or above 100%, thereby minimising the risk of the introduction of deficit contributions. The actuary has confirmed that the scheme's cash flow is likely to remain positive for the next 10 years or more.

At 31 March 2012, USS had more than 145,000 (2011: 142,000) active members and the Society had, at 31 December 2012, 33 (2011: 35) active members participating in the scheme. The total USS pension cost to the Society for the year ended 31 December 2012 was £223,000 (2011: £245,000) and there were £19,000 (2011: £19,000) outstanding employer's contributions at 31 December 2012. The contribution rate payable by the ZSL was 16% of pensionable salaries.

16. Leasing commitments

	<i>2012</i>	<i>2011</i>
	<i>£000</i>	<i>£000</i>
Leases expiring:		
Within one year	28	227
Within two to five years	513	29
	<hr/>	<hr/>
	541	256
	<hr/> <hr/>	<hr/> <hr/>

The lease commitments relate to the annual amounts payable over the following 12 months on non-cancellable operating leases in respect of plant and equipment and motor vehicles.

17. Capital commitments

The Society leases the Regent's Park site from the Department for Culture, Media and Sport. The lease was renewed in 1999 for a term of 56 years at no annual rent (as more fully explained within note 1 under 'donated facilities'). As a condition of the renewed lease, the Society submitted to undertake a survey of the site in order to agree a strategy for future works. The survey was completed and initial indications gave a preliminary estimate of a maximum cost of £31m, which forms the basis for continuing discussion with the landlord of the programme of works to be undertaken in the context of the Society's cash resources at future dates. Development work has been undertaken in certain areas, which reduces the estimate of costs for outstanding works to £15.2m. Further work is budgeted for in 2013. Capital expenditure of £6.5m (2011: £4.9m) had been authorised but not provided at 31 December 2012, of which £5.7m (2011: £0.2m) had been contracted and £0.8m (2011: £4.7m) had not been contracted.

Notes to the Financial Statements

For the year ended 31 December 2012

18. Notes to the consolidated cash flow statement

- (a) Reconciliation of net incoming resources before other recognised gains to net cash inflow from operating activities

	<i>2012</i>	<i>2011</i>
	<i>£000</i>	<i>£000</i>
Net incoming resources before other recognised gains	2,838	4,239
Current service cost surplus	(300)	(200)
Pension finance income	–	(200)
Pension curtailment gain	(300)	–
Interest and investment income	(344)	(246)
Depreciation of fixed assets	3,064	3,125
Loss on disposal of tangible fixed assets	80	44
Decrease/(increase) in stocks	41	(83)
(Increase)/decrease in debtors	(677)	336
Increase in creditors	356	290
	<hr/>	<hr/>
Net cash inflow from operating activities	4,758	7,305
	<hr/>	<hr/>

- (b) Analysis of consolidated net cash resources

	<i>1 January</i>	<i>Cash</i>	<i>31 December</i>
	<i>2012</i>	<i>flow</i>	<i>2012</i>
	<i>£000</i>	<i>£000</i>	<i>£000</i>
Cash at bank and in hand	7,622	311	7,933
Cash on short-term deposit	6,000	(1,995)	4,005
	<hr/>	<hr/>	<hr/>
	13,622	(1,684)	11,938
	<hr/>	<hr/>	<hr/>

19. Contingent liabilities

The Charity is joint and severally liable for all Value Added Tax (VAT) debts of the VAT group registration of which it is a part, relating to the period that it has been a member of the VAT group. The total VAT liability for the VAT group at 31 December 2012 was £113,000.

20. Related parties

There were no material-related party transactions in the year (2011: none).

The Society has taken the exemption given by Financial Reporting Standard 8, Related Party Disclosures, from disclosing transactions with subsidiaries.

21. Subsequent events

In February 2013, to assist in funding the capital development of the London Zoo main restaurant (Terrace Restaurant), ZSL secured a £2.2m bank loan, which is repayable by quarterly investments over five years and which, at that time, increased cash at bank and in-hand and creditors by £2.2m.



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