



Chester Zoo Review 2005

Annual Report of the North of England Zoological Society



THE QUEEN'S AWARDS
FOR ENTERPRISE:
SUSTAINABLE DEVELOPMENT
2006

Working in Partnership



World Association of
Zoos and Aquariums

IUCN

The World Conservation Union



Conservation Breeding
Specialist Group



European Association of
Zoos and Aquariums



Joint Management of
Species Programmes



World Wildlife Fund



International Species
Information System



European Union of
Aquarium Curators



British & Irish Association
of Zoos & Aquariums



Wildlife Conservation
Society, New York



Eco Systems India



Fauna & Flora
International



English Nature



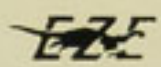
The Wildlife
Trusts Cheshire



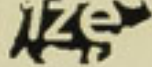
Save the Rhino



Kenya Wildlife Service



European Zoo Educators



International Zoo
Educators



University of Liverpool



Liverpool John
Moores University



University
College London



Manchester
Metropolitan
University



Association of Leading
Visitor Attractions



Cheshire & Warrington
Tourism Board



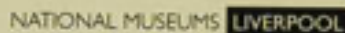
Cheshire & Warrington
Economic Alliance



LIVERPOOL
The world in a city
Capital of Culture
2008



North West Tourist Board



National Museums
Liverpool



Northwest
Regional Development Agency

Welcome to the
Annual Report of the
North of England
Zoological Society.
We are a charitable
trust for conservation,
education and
science, independent
of government or local
authority funding.

Contents

This report explains the progress, achievements and challenges of the Society in relation to our conservation mission during the business year of 2005. To achieve its mission, the Zoo works in partnership with many conservation, science, education, tourism and other organisations at local, regional, national and international level. Members of staff also sit on many other scientific, business, tourism, communication and development boards and panels. For further detailed information on the Zoo's business and mission visit the website www.chesterzoo.org

Pages 1 to 38 of this report focus on our mission, pages 40 to 59 on the Society's business.

Introduction

- 04 Chairman's Statement
- 06 Director General's Report
- 07 Awards
- 08 Management Structure

Accomplishing Our Mission

- 09 Animal and Plant Conservation Division
- 11 Higher Vertebrates
- 12 Lower Vertebrates and Invertebrates
- 13 Animal Health Care
- 14 Animal Supplies and Services
- 15 Botany and Horticulture
- 16 Conservation and Science Division
- 18 Conservation and Science Worldwide
- 20 Scientific Advisory Boards
- 21 International Breeding Programme Co-ordination
- 22 Scientific Publications and Technical Reports
- 36 Education Division
- 38 Junior Members

Livestock

- 24 Summary
- 26 Threatened Species: Animals and Plants
- 28 General Holdings
- 28 Mammals
- 29 Birds
- 31 Reptiles
- 32 Amphibians
- 33 Fishes
- 34 Invertebrates

Organising Our Business

- 40 Visitor Services Division
- 42 Marketing and Development Division
- 44 Estates Division
- 45 Maintenance
- 45 Safety, Health and Environment
- 46 Facilities
- 47 Personnel Division
- 48 Staff List
- 50 Finance and Administration Division
- 51 Information Technology

Governance and Financial Reports

- 52 Presidency, Council and Council Committees
- 54 Trusts, Grants, Sponsorship and Donations
- 55 Financial Report
- 57 Group Summary Financial Statements
- 57 Council Statements
- 57 Auditors Report
- 58 Financial Activities
- 59 Balance Sheet

Front cover picture
Okapi (*Okapia johnstoni*)
Keith Freeburn

All pictures
Chester Zoo archives



Tony Williams

Chairman, North of England
Zoological Society

Chairman's Statement

Through 2005 we have pursued a vigorous programme of growth, with major new capital build projects and a complete restructure of the management team. This will enable us to respond to increased global commitments in conservation and the changing needs of our visitors.

Our newly adopted mission to be a 'major force in conserving biodiversity worldwide' has helped us to strategically refocus on conservation, research and education. Looking forward, we are well placed to become recognised as world-class in these vital areas of activity.

We strive to provide a high level of visitor satisfaction and recognise the need to invest in core facilities. To this end we commenced work on *Café Tsavo* – a themed East African restaurant that will offer a wide selection of healthy option meals and greatly enhance the dining experience in 2006. As always, we aim to design animal enclosures to ensure an optimum environment for conservation breeding and welfare while maximising the visitor experience. Work started this year on several major animal projects. Among these, the *Elephants of the Asian Forest* will be unique in its large-scale construction and create a leading visitor experience to a high international standard for 2006. Our warm thanks go to Council Member Neville Chamberlain CBE, who chaired a fundraising group and raised £1.5m for Asian elephants. This tremendous achievement was recognised with a celebratory reception at the Linnean Society of London, where we were able to say a personal thank you to many of our supporters (photo left).

Work started on *Realm of the Red Ape* for the ever popular Orang-utans. At a cost of £3m, this will be a massive, state-of-the-art, living environment for the apes and an 'immersion experience' for the public. It also allows us to continue a breeding programme for one of the most endangered animals in our collection. Fundraising for this project has begun and, following construction in 2005 and 2006, we have an Easter 2007 opening date.

Even bigger plans for future development are being considered and these are encapsulated in the *SuperZoo* project. While still at an embryonic stage, this initiative will create a Zoo at the forefront in Europe. The sheer scale of this world class project demands a great deal of external input. I would like to record our thanks for the cooperation and support that we have already received in 2005 from many partner organisations, notably the North West Development Agency.



Reception for the North of England Zoological Society
hosted by the Linnean Society of London

Continued expansion at home and abroad means we must place a correspondingly high priority on the development of our staff and the structure that they work within. Hence Council, in close dialogue with the Director, undertook a critical review of organisational structure and introduced changes that will allow us to meet present and future demands (p.8). Last year I mentioned the appointment of the Director, Professor Gordon McGregor Reid as President Elect of the World Association of Zoos and Aquariums (WAZA). He assumed that post in October 2005 and we wish him well in this most prestigious appointment.

Because of the need for Gordon to continue to represent the Society's mission and business in a wider arena, Council considered it time to create a higher-level tier of support. As a result, Gordon has been promoted to the role of Director General, with two new Directors appointed to report to him. The new Conservation and Education Director is Mark Pilgrim (formerly Chief Curator). The new Commercial Director is Silvio Liedkte (from February 2006). We heartily congratulate these individuals and wish them well in their new roles!

The Society's financial position remains very strong. There have been marginally fewer visitor numbers this year but we remain in the 'million plus club' and have increased our gross income over last year by 2.4%, excluding last year's 'one off' recovery of VAT. We also appear in official disclosed tourism lists as the 6th most popular paid-entry attraction in the UK, close to the much publicised *Eden Project* (source: Association of Leading Visitor Attractions, data published 2006).

This year's report, as always, contains contributions from many members of the management team and highlights the wide breadth of their activity within the Zoo, the local region and overseas. On behalf of Council I would like to thank the Zoo staff for their tremendous dedication and enthusiasm, as it is this that underpins our success.

'Our newly adopted mission to be a major force in conserving biodiversity worldwide has helped us to strategically refocus on conservation, research and education.'



Spectacled Bear
(*Tremarctos ornatus*)



Gordon McGregor Reid

Director General

Director General's Report

The role of the Society has expanded and evolved over the last decade. Increasingly, we work both in the Zoo and worldwide with endangered animals, plants and threatened habitats. The Council and the executive team felt it was time to update the Society's Vision and Mission in order to face the challenges of the future. The revised Vision for the Society is *'A diverse, thriving and sustainable natural world'* and our core purpose, or Mission, is *'To be a major force in conserving biodiversity worldwide'*. Our business strategy is designed to support this Vision and Mission.

Sustainable Futures

External events in 2005 reminded us that global resources are finite and unwise use may impact adversely on the health of the planet and on biodiversity, i.e. the variety of animals, plants and habitats. For example, it took the world 125 years to use the first trillion barrels of oil, and we'll use up the next trillion within 30 years, so making a major contribution to 'greenhouse gas' emissions. According to climate change experts, humans have at most 10 years to enact drastic cuts in emissions to prevent temperatures rising higher than for half a million years, with corresponding deleterious effects on ecosystems and biodiversity. With growing environmental concerns, the new watch words are 'reduce, re-use and recycle'. The Zoo is playing its part by greatly reducing our own emissions and by achieving an international environmental management standard (ISO 14001). We are also proud to retain the *Queen's Award for Enterprise* in the category *Sustainable Development*, the highest accolade that we can achieve. Furthermore, we provided input to an important research project on 'Climate Change and the Visitor Economy in the North West of England' carried out by the Centre for Urban and Regional Ecology (CURE) at the University of Manchester.

New Strategy and Structure

In this complex and rapidly changing world, strategic and organisational planning for the Society and Zoo becomes a top priority. There have been externally facilitated staff training exercises in strategic planning, and much dialogue between the executive team and the Scientific, Education and Finance Committees of Council on developing a more comprehensive, integrated long-term plan for 2006 onwards.

In 2005, to better address the structural challenges of growth, Council approved the re-organisation of the Zoo's management into three major functional groups: Conservation & Education; Commercial Services and Corporate Services (p.8). Accordingly, I am pleased to warmly welcome Mark Pilgrim as Conservation and Education Director and Silvio Liedtke as Commercial Director. With these and other new arrangements, I now have an even stronger executive team around me, very well equipped to continue to move forward.

My own role has changed and, as Director General, I need to devote more time to external conservation and business activities in order to influence regional, national and international decision makers and gain their support. I now have a duty to represent the Society's mission on an international level, and in October 2005 became President Elect of the World Association for Zoos & Aquariums (WAZA). This involves major new responsibilities for the entire Zoo community, not just Chester Zoo. As President of the Linnean Society of London (the oldest biological society in the world and the venue for the original Darwin and Wallace paper on Origin of Species), I presided over a number of meetings, including the Society's Anniversary Meeting in 2005, where I gave an address on 'Linnaeus – the father of biotechnology'. As a Trustee of the National Museums Liverpool, it is good to note the success of the *Liverpool 2008 Capital of Culture* bid; and the implications of this for the North West, including Chester and its Zoo. I have been a Zoo Inspector for many years, and following a major five-yearly performance review of Zoo Inspectors, DEFRA have invited me to remain on the Secretary of State's List.



Awards

Developing Partnerships

The Zoo must assist with and position itself in relation to other relevant strategies and interest groups: local, regional and international. The North West Development Agency (NWDA) invited the public, voluntary and business sectors to submit comments on the revised North West Regional Economic Strategy (the 'RES' 2005/2006). Originally launched in 2000, the RES is updated every few years. Since 2003, the Agency has been working on its five key priorities of Business Development, Regeneration, Skills and Employment, Infrastructure and Image.

Representing the Society's interests – and as a Culture Northwest Board Member and a Business Ambassador for the Cheshire and Warrington Economic Alliance – I participated in RES planning meetings. I highlighted the Zoo's potential large input to the 'Knowledge Sector' listed in the RES as well as the 'Quality of Life' (tourism) sector. Encouragingly, the Zoo has been identified as an 'attack brand' and 'signature project' and is listed as one of the key transformational activities on which the region should focus. This means that the Zoo – from its demonstrated economic impact, high profile and potential – is in a strong position to receive significant support at a regional level.

In this context, the Society has been keen to progress the idea of a *SuperZoo*, which was unveiled to NEZS Members at the Society's AGM in May 2005. This is a vision for achieving far more in mission and business (visitor attraction) terms through a major physical expansion and diversification of the existing Zoo site. To determine our 'best fit' with the RES, and to advance the *SuperZoo*, we continue to work in close partnership with the City Council, County Council, Cheshire and Warrington Economic Alliance (CWEA), Cheshire and Warrington Tourist Board (CWTB) and the Northwest Business Leadership Team. With the assistance of the Parish Council, we are also in close contact with the local community.

Building for the Future

With a turnover of £18 million plus, the Society has never been in better financial health. In line with our heightened aspirations, 2005 has seen an unprecedented investment in Zoo projects and infrastructure: *Elephants of the Asian Forest*, the *Secret World of the Okapi* and *Café Tsavo*. These projects are truly *SuperZoo* in scale and concept, and currently being delivered for the 2006 peak visitor season. The *Realm of the Red Ape* is also in construction and *Origins* (a massive new water zone) is in planning. Recent and on-going capital development exceeds £11 million. By the year end the Society's cash deposits stood at an all time record of £10 million, reflecting the £7.5 million VAT recovery.

Global Conservation

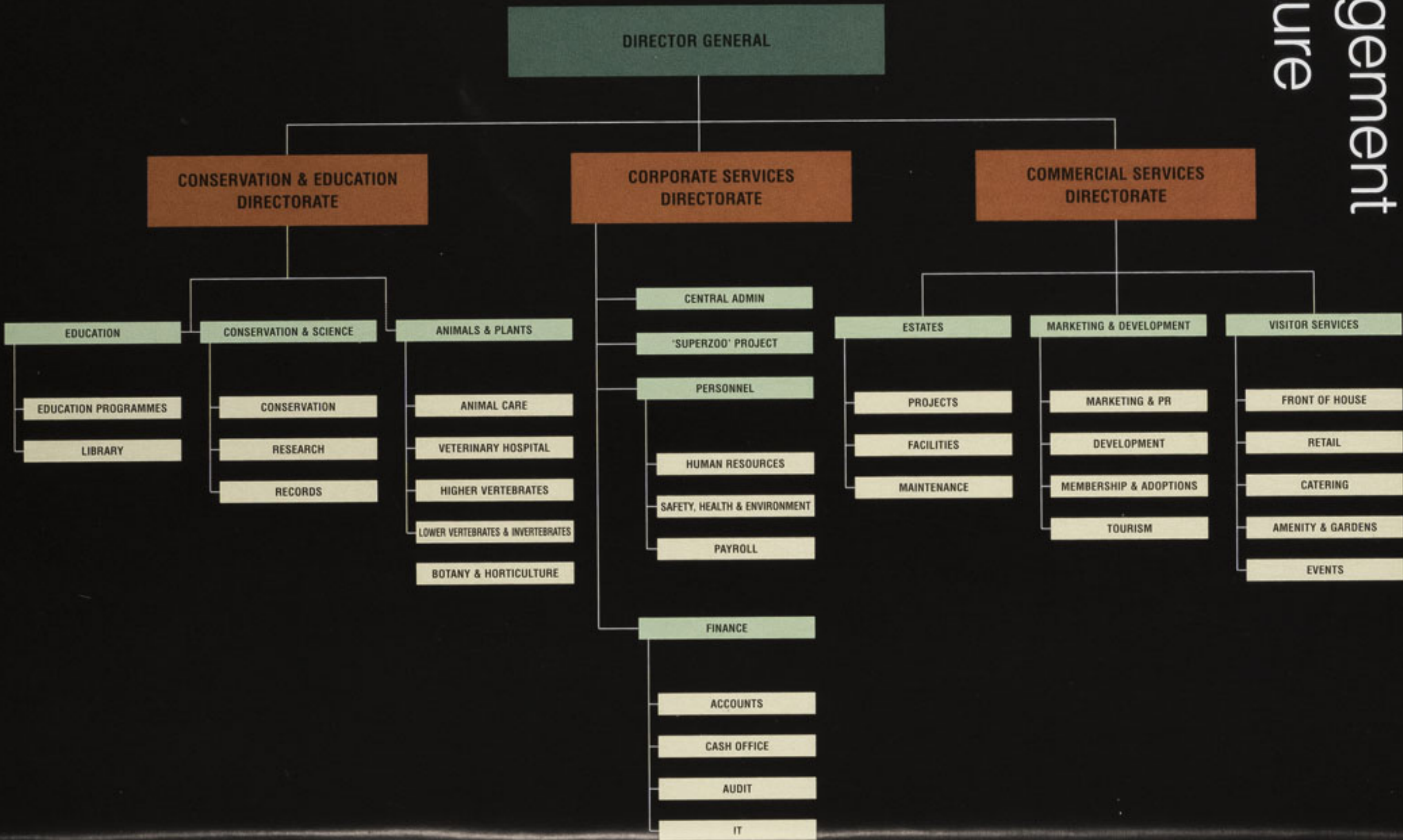
The Society has been heavily engaged in the production and launch of the new *World Zoo and Aquarium Conservation Strategy* (2005) of the World Association of Zoos and Aquariums (WAZA). This 'blueprint' for zoos and aquariums promotes a clear view of their unique potential contribution to global conservation as champions of species conservation, population management, sustainability, science, education, animal welfare, bioethics and much more. WAZA has called upon zoos and aquariums to allocate their financial and human resources strategically and to collaborate with others to achieve the greatest possible conservation benefits for threatened species and habitats. The most immediate crisis is that of the potential global extinction of the world's frogs, toads and other amphibians (p.12). WAZA has urged zoos and aquariums to respond strongly to this. Be assured that our Society will be a major force in this area.

The Society has gained more than 80 awards since 2000 in all areas of activity. This year's awards include:

Tommy's Parent Friendly Awards 2005
Best Family Visitor Attraction (picture below)
Cheshire and Warrington Tourism Board
Best Tourism Website of the Year
England's Northwest Tourism Award
Best Tourism Website
EAZA Shellshock Education Award 2005
Turtle and tortoise conservation
EAZA Shellshock Gold, Silver and Platinum Awards
Shellshock Campaign
Northwest in Bloom Awards 2005
Best Large Tourist Attraction
Chester in Bloom 2005
Best Tourist Attraction
National Horticulture Week Awards
Second place in 'Best Garden Design and Construction' for *Dragons in Danger Garden*
BIAZA commendation
Collaborative work with the Zoological Society of London, training veterinarians working in primate sanctuaries in Africa
BIAZA commendation
Turn your *Trash into Cash* recycling scheme
Queen's Award for Enterprise
Sustainable Development



Management Structure





Animal and Plant Conservation Division

Mark Pilgrim

Chief Curator

(Conservation and Education
Director from January 2006)

A key challenge is in balancing conservation and welfare needs against the need to satisfy our visitors and so keep the Zoo financially viable.

Animal and Plant Conservation Functions

- Manage, care for and exhibit the Society's animal and plant collections to an excellent standard for the purposes of conservation, education and benign non-invasive scientific study
- Where appropriate, engage in national and international breeding programmes
- Engage in wildlife conservation programmes in the UK and abroad with like-minded bodies

Accomplishing our mission

The most significant event of 2005 for the strategic development of the Society and its Zoo was the 'vision, mission and values' exercise (see p.6). This task was completed with enthusiastic participation from my naturally 'mission-oriented' Division. The clear outcome from the exercise was to show that conservation remains at the heart of all that we do. The restated mission is: *to be a major force in conserving biodiversity worldwide.*

It was essential to retain a focus on pursuing this revised mission, especially in a year where all areas of the Animal and Plant Conservation Division were growing and diversifying at a high rate. A key challenge is in balancing conservation and welfare needs against the need to satisfy our visitors and so keep the Zoo financially viable. Visitors mainly come to see exhibits – and so ever more discipline is required to forward plan for 2, 3 or more years. However, we cannot ignore external conservation and animal welfare crises in a rapidly changing world where environmental deterioration is widespread. Hence, we must balance the amount of time staff work on projects based in the Zoo (*ex-situ*) against time spent working on urgent conservation and welfare projects outside the Zoo (*in-situ*), including overseas. Our rapid response to the effects of the Tsunami on animals is a good example here (p.19).

Zoo Conservation Breeding Programmes

Managing the large collections of threatened animals and plants within the Zoo is the core role of our Curators. In their Departmental reports they give impressive details of the way in which the collections continue to develop to support the mission. The three Curators each supervise highly-skilled and experienced teams, consisting of some of the very best animal and plant specialists in Europe. We could not accomplish the substantial achievements reported if this were not the case.

Transferring our magnificent breeding bull Asian Elephant *Chang* to Le Pal Zoo in France was an event of European significance (p.11). *Chang* sired ten calves during his time at Chester – a fantastic achievement, not only for *Chang* but also for the staff involved! At the other end of the size scale, the breeding and hatching for the first time at Chester of the tiny (the size of a 50p piece on hatching) and Critically Endangered Egyptian Tortoise was hugely pleasing, especially during a year which featured *Shellshock*, an innovative international campaign to conserve turtles and tortoises (p.12).



Egyptian Tortoise (*Testudo kleinmanni*)

Our conservation and welfare activities would not be possible without the vital support of the operational departments: Animal Health (veterinary and nutrition), Animal Supplies and Services and our Central Administration. Among the many challenges for 2006 is the development of a policy and contingency plan to deal with the threat of Avian Influenza. The Zoo is involved in the development of a risk assessment and integrated strategy for Avian Influenza at global, European and national level.

Conservation Programmes in Nature

I visited the site of the Gashaka Gumpti National Park in Nigeria – one of the Society's eight important field programmes. This remnant of West African savannah forest is the last hope for survival of the Nigerian Chimpanzee (*Pan troglodytes vellerosus*) in the wild. Our successful work to protect Chimps and the other biodiversity of this beautiful forest fills me with enormous pride. We have supported sophisticated research, practical action and, very importantly, have trained Nigerian students and fieldworkers. I also travelled to the Bolivian High Andes with Stephen McKeown, Head of Education. We were both working in a multi-national team to assist the Mallasa Zoo, near the capital city La Paz (at 3200 metres, the 'highest zoo in the world'). Working with the British Consultancy Charitable Trust, the main objectives were to train staff in improved animal welfare, safety and conservation procedures and to begin to develop the ecotourism potential of the Mallasa Zoo (p.36). Being located at the cool headwaters of the Amazon River makes this site particularly important.

Consultation, training and capacity building

Many other staff engaged in conservation and welfare work overseas. Utilising the high expertise of our personnel on such projects is a rapidly growing aspect of our work.

Consultation services, coupled with rigorous training and capacity-building for people in the habitat countries, are growing weapons in our armoury for conservation action. A remarkable number of staff members from all areas of the Division assisted projects in 2005. Curator of Higher Vertebrates, Mike Jordan, organised field training in Bangladesh, India and the Philippines; while Veterinary Officer, Steve Unwin led a Healthcare Workshop in Cameroon for African veterinarians working in ape sanctuaries. Utilising incubation and hand-rearing skills developed at Chester, members of our Bird Teams hatched and reared critically endangered Mauritian birds in the field (p.12).

Building a World-Class Zoo

Achieving our mission is dependent on creating and running world-class facilities in Chester that continue to attract large numbers of paying visitors. To do this we must continuously improve all aspects of the Zoo and develop new exhibits to ensure that our regular visitors return year-on-year. In construction in 2005 (for an opening in 2006) are two stunning new exhibits: *Elephants of the Asian Forest* and the *Secret World of the Okapi* (showcasing a rare giraffe-like animal from the Congo rainforest).

The Chairman and Director General have noted the major organisational re-structuring that has taken place in 2005. This has resulted in a new Directorate being formed from a union of the Animal and Plant Division, the Conservation and Science Division and the Education Division. I am proud to note that I have been appointed as the Director of this new mission-oriented function, with effect from January 2006. Drawing together the various strands of divisional activity to create better-integrated programmes in conservation, education and science will be an exciting opportunity for 2006.



Chimpanzee (*Pan troglodytes*)



Mike Jordan

Curator of Higher Vertebrates

Higher Vertebrates

Exciting species of mammals and birds new to the collection arrived at the Zoo in 2005 and we had an extremely busy and varied breeding season. It was particularly satisfying to see the expertise of the mammal and bird staff being increasingly recognised and called upon to support field conservation and training around the world.

This year has been intensive and complex for animal transactions – far too many to list in detail. For example, more than 50 mammals and 100 birds were exported to other animal collections. Notable mammalian transactions were: the departure of male Spectacled Bear *Valentin* (who went to Johannesburg Zoo in South Africa), and the arrival of a female Spectacled Bear *Loja*; and the replacement of a female Red Panda *Lushan* with a male Red Panda *Pali*. These new arrivals will place us in a potentially excellent breeding situation for 2006 for both of these charismatic species. New female Scimitar-horned Oryx were received in advance of a male due to arrive in 2006, again with a view to breeding this threatened species. A second male Okapi has joined us as part of the European Endangered Species Programme as have two new Critically Endangered Black Rhinos. Other departures included *Pundu*, the female Bornean Orang-utan, and our breeding male Asian Elephant *Chang* (who went to Le Pal Zoo in France). There were highly significant arrivals and, among these, several taxa are new to the collection. This includes three Vicuna and two Warthog, which were exciting visitors immediately in their separate enclosures (adjacent to Spectacled Bears and Black Rhinos, respectively).

Other arrivals were: Giant Pouched Rat, African Dormouse and Belanger's Tree Shrew – all ultimately destined for the new *Elephants of the Asian Forest* and the *Secret World of the Okapi* exhibits, scheduled to open in 2006.

After rationalising our bird collection to make it more conservationally relevant, there were exciting additions during 2005: Chestnut-backed Thrush, Orange-headed Thrush, Chestnut Thrush, White-naped Yuhina, Timor Zebra Finch and the Critically Endangered Grey-breasted Conure. We received 10 Kikuyu White-eye, specifically to help build the skills of our bird staff involved in the incubation and rearing in the field of Critically Endangered Olive White-eye on Mauritius.

The Zoo is maintaining UK native Water Voles as part of a conservation translocation project. Thirty-one animals arrived from an industrialised site in Rochdale as part of a North West Development Agency funded project. Water Voles will not be returned to the site until 2007. Hence a conservation breeding programme was started which has produced 19 young in 2004/2005.

The Geoffroy's Marmoset ('miniature monkeys') continued to breed and the group that started as a pair last year, now numbers seven! The newly-arrived Vicuna surprised everyone by quickly producing two youngsters. We also had young from the Red River Hog, Eastern Bongo, Lion-tailed Macaque, Buffy-headed Capuchin, Mandrill, Bush Dog, Giraffe and Philippine Spotted Deer (of which all three females currently have youngsters). The bird breeding season has been very productive and we successfully bred Red-billed Curassow, Red-crowned and West African Crowned Crane, Great Grey Owl, Waldrapp Ibis, Laysan Teal, Baer's Pochard, Pekin Robin, Superb Starling, Scissor-billed Starling, Chilean and Caribbean Flamingo. The young Rhea delighted visitors over the summer with their antics in a bird creche near the Giraffe area.

As with any large animal collection there were age-related deaths during 2005. The most sad and notable of these were: female Asiatic Lion *Chandani*; two stillborn Jaguar cubs to first-time mother *Sofia*; our male Asian Short-clawed Otter; and the male Wrinkled Hornbill (who had been here at Chester Zoo for nearly 20 years). It has been a testing time to manage the animals around many of the building developments – but also hugely satisfying when projects such as our new *Rare Parrot Breeding Centre* were completed and staff and stock moved in.

This year has seen many bird and mammal staff working around the globe to support field conservation. One of our key assets is the greatly enhanced field expertise of our staff – the fruition of skills acquired over many years here at the Zoo with our own collection. This expertise was put to good use in places as diverse as Mauritius, Bangladesh, South Africa, Sri Lanka, Philippines, Cameroon, USA and India (see p.18/19). Among the huge variety of conservation and training work carried out, Chester Zoo's bird staff have spent eight months in Mauritius conducting field-work and helping build local capacity in the incubation, hand-rearing and reintroduction of Critically Endangered Mauritius birds.

Grey-breasted Conure
(*Pyrhura leucotis griseipectus*)



Kevin R Buley

Curator of Lower Vertebrates
and Invertebrates

Lower Vertebrates and Invertebrates

The success of the EAZA *Shellshock* conservation campaign, organised by Chester Zoo staff, has exceeded all expectations.

In addition to raising awareness of the turtle crisis with 125 million visitors in 170 zoos and aquariums across Europe, campaign participants managed to raise a total of more than £200,000 to support turtle conservation projects in the wild. We were particularly proud here at Chester to reach the highest of the four institutional fundraising targets, raising over £15,000 to secure the platinum award. The Zoo also received a special award for education during the campaign (p.7). *Shellshock* is now recognised as the world's largest ever turtle and tortoise conservation initiative.

During the *Shellshock* year, we have made significant progress in establishing important safety-net Zoo populations for six additional species of Endangered and Critically Endangered freshwater turtle: the Rote Island Snake-necked Turtle *Chelodina mccordi*, the Annam Leaf Turtle *Mauremys annamensis*, the Four-eyed Turtle *Sacalia quadriocellata*, Beal's Eyed Turtle *Sacalia bealei*, the Golden Coin Box Turtle *Cuora trifasciata* and Zhou's Box Turtle *Cuora zhoui* have all joined the Chester Zoo collection in the past 12 months.

A significant breeding success at the Zoo during 2005 was the hatching of our first Egyptian Tortoises *Testudo kleinmanni*. A total of seven of these Critically Endangered animals were born during the year. Egyptian Tortoises are the world's second smallest tortoise species, with adult females only reaching 12-13 cm in length. At the other end of the tortoise size scale, we were very pleased to make room for four young Galapagos Giant Tortoises *Geochelone nigra* from Zurich Zoo in Switzerland. Although these four-year-olds are currently only the size of a dinner plate, in twenty years time they will be the size of a dinner table! All being well, they will still be a part of the Chester Zoo collection in 100 years time.

In the aquarium we were delighted to welcome Colin Grist to the team. Colin joins us in the new position of Aquarium Projects Coordinator.

One of his main responsibilities will be to help us develop our fish conservation activities in the wild – linking these directly to the conservation breeding work that goes on in the aquarium. New species on public display in the aquarium include the threatened endemic Indian Red-lined Torpedo Barb *Puntius denisonii* and the impressive Longsnout Seahorse *Hippocampus reidi*. The Longsnout is one of the larger seahorse species – with adults growing up to 17 cm in length. The specimens here at the Zoo were part of a Custom's seizure of illegally traded juvenile seahorses. They have settled into life in the aquarium particularly well, and have now started to breed.

The Director General is Chair of the WAZA Aquarium Committee which is currently developing a Global Conservation Strategy for Aquariums and also International Standards for Marine Mammal Management. He is also Global Chair of the IUCN/Wetlands International Freshwater Fish Specialist Group which held its Inaugural Meeting at the Zoo in March 2005. The group plans to develop a Global Freshwater Fish Threat Assessment and associated Conservation Action Plan.

The recovery programme for the Critically Endangered Puerto Rican Crested Toad *Bufo lemur* has become one of the world's most successful amphibian conservation programmes. We have reared specimens of the species here at the Zoo for the last five years, and were absolutely delighted when the young adults bred for the first time in November. This is the first successful Zoo breeding of this species outside the USA. In 2006, it is planned that Chester bred animals will be reintroduced to the wild in Puerto Rico.



Mission Golden-eyed Frog
(*Phrynohyas resinifictrix*)

Three species of amphibian joined the collection during the year. Individuals of one taxon, the Mission Golden-eyed Frogs, *Phrynohyas resinifictrix* (pictured below), look rather like a frog shaped mound of bird droppings! This camouflage presumably gives them some protection against predators in the wild. Also joining the collection, were the bizarre and aptly named Mossy Frog *Theloderma corticale* – recently discovered in the mountain forests of Vietnam. Completing the trio of species are Dyeing Poison-dart Frogs *Dendrobates tinctorius*, one of the largest and most spectacular of the family.

The 2004 *Global Amphibian Assessment* confirmed what many scientists had long believed – that the world's frogs, toads, salamanders and caecilians – an entire vertebrate Class – are experiencing an extinction crisis never before seen. Nearly a third of the planet's 5,743 species of amphibian are threatened with extinction. A further 1,290 species are Data Deficient, and many of these will also likely be under threat. At least 122 species are believed to have gone extinct since 1980, though this number is likely to be a substantial under estimate. Compounding the existing pressures of habitat loss and degradation, pollution, over-collection, climate change and alien invasive species, a fatal fungal disease – *chytridiomycosis* – has swept through frog populations in North, Central and South America, Australia and now Europe. In many cases, the disease is decimating amphibian populations in otherwise pristine habitat. Conventional *in-situ* conservation techniques will therefore not help to save these species from extinction. Rather like the Asian Turtle Crisis, it is a sad fact that, for many hundreds of species of amphibian, their only immediate hope of survival is in *ex-situ* assurance populations that will keep species alive until we have found methods to prevent and treat the spread of *chytridiomycosis* in the wild. Urgent action needs to be taken now and WAZA has urged zoos, aquariums and botanical gardens to establish breeding programmes for up to 1000 species at risk of extinction. Chester Zoo is already responding to this *ex-situ* 'call to arms' with plans for an *Amphibian Ark*. We have a vital and unique role to play in preventing the extinction of amphibians and Chester Zoo will be helping to lead the global initiative.



Stephanie Sanderson
Veterinary Manager

Animal Health Care

During 2005 we made over 3000 visits to 750 individuals of 250 species.

Clinical Care

The department continues to develop preventative health care protocols, including an electronic database of all diets fed, using *Zootrition™* software, developed in part by our nutritionist, Dr Andrea Fidgett. Our diagnostic parasitology capabilities continue to expand under the supervision of Karen Homer with over 600 samples having been processed on site. Additional clinical support is provided by specialists from Liverpool University Veterinary School and colleagues working in human medicine.

The Animal Health Care Team and Registrar are also responsible for the Zoo's compliance with national and international animal health and welfare legislation including animal health certification for some 120 consignments of animals exported in 2005. During the latter part of the year we have been involved in formulating Avian Influenza contingency plans both for the Zoo and nationally, with me as a member of advisory groups for the British Veterinary Association, British and Irish Association of Zoos and Aquariums (BIAZA), and the British Veterinary Zoological Society.

The health and welfare of the collection and work of the AHC team is reviewed on a quarterly basis by NEZS's Animal Welfare, Conservation and Scientific Committee. Our expertise in this field led to me being asked to contribute to DEFRA's *Zoo Forum Handbook* chapter 'Animal Welfare and its Assessment in Zoos' published in Sept '05.

Research and conservation

The Department has contributed to collaborative research in a variety of fields including nutrition, anaesthesia, diagnostics, genetics, cryobiology and the anatomy, physiology and pathology of wild animals.

Field conservation activities this year included the collaborative *Dormouse Project* with Cheshire Wildlife Trust, English Nature and the Countryside Commission for Wales. Steve Unwin continues his work as veterinary advisor to the Pan African Sanctuaries Alliance and this year, in partnership with colleagues at ZSL,

he received a Commendation from BIAZA in their *Best Field Conservation Project* category for his veterinary capacity-building for great ape sanctuaries in Africa.

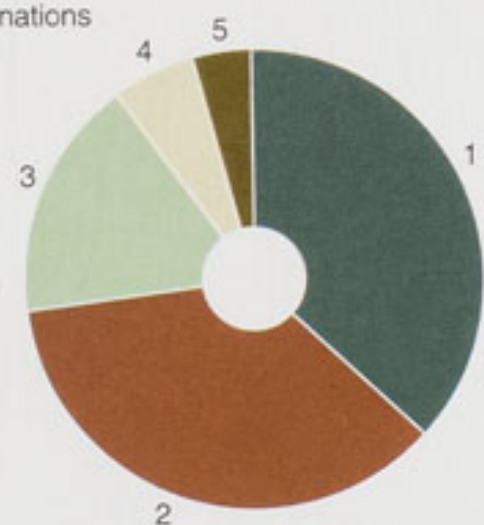
Education, Training and Advocacy

AHC staff provided on-site training to 20 vets, vet students and vet nurses and also gave 30 lectures and workshops outside the Zoo, as part of BSc and MSc degree courses and post graduate training programmes, including the growing field of conservation medicine.

AHC staff continue to serve on many national and international committees and act as veterinary and nutrition advisors to several UK and European conservation breeding programmes.

Case load by Taxa

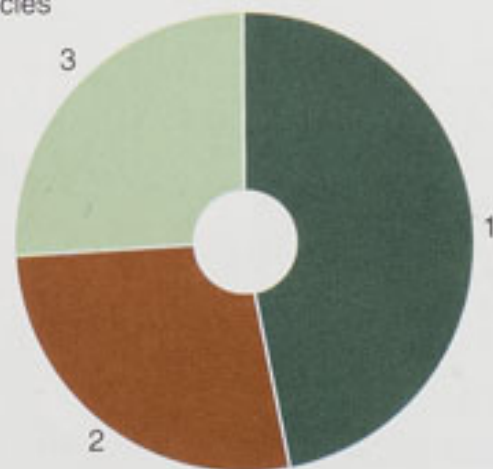
Including preventive health care and post-mortem examinations



1 Birds	1327	36%
2 Mammals	1354	37%
3 Reptiles	633	17%
4 Amphibians	213	6%
5 Fishes	142	4%

Causes of Mortality

All species



1 Non-infectious	218	47%
2 Infectious	126	27%
3 Undetermined	122	26%

Environmental Enrichment and Animal Welfare

Dr Sonya Hill

Research Officer

Good husbandry practice in modern zoos includes the use of environmental enrichment efforts, to provide animals with stimulating environments that give them the opportunity to show a wide range of their normal behaviours, thus promoting physical and mental health. Chester Zoo enthusiastically supports environmental enrichment as a major principle in the provision of excellent animal welfare standards.

By using our knowledge of individual animals, and the behaviour and ecology of each species, we aim to provide the animals with an environment that more than satisfies their biological, social and individual needs for behaviour and resources. We provide species-appropriate enrichment devices and techniques to give the animals the opportunity to display a wide range of natural behaviour. Enrichment can also be obtained through the provision of complex, naturalistic enclosures, such as the heavily-planted Chimpanzee island and Spectacled Bear enclosure, and social enrichment from conspecifics is also very important to many species that would naturally live in social groups. Keepers in all Animal Teams use a variety of established husbandry techniques and develop new enrichment ideas for the animals in their care.

Many of the scientific studies undertaken in the Zoo are investigations of the effects of enrichment efforts on animal behaviour and welfare. For example, one of our MSc degree students investigated the effects of foraging-related enrichment efforts on Asian Elephant behaviour, aimed at promoting a naturalistic behavioural repertoire. A BSc degree student investigated the preference for particular enclosure furniture and enrichment devices in the Colombian Black-faced Spider Monkeys, and a BVetMed degree student investigated the use of 'boomer balls' as food-delivery devices for Californian Sealions. Results from studies such as these help us to monitor the animals and maintain excellent welfare standards. We can also quantify the effects of established husbandry techniques on the animals' welfare and publish and disseminate the results.



Anthony Hutchinson
Animal Supplies Manager

Animal Supplies and Services

The department's ability to perform its service function professionally has been transformed by the completion of the new operations compound to the front of the main building. This is the first stage of a long-term facility upgrade programme, planned and implemented in-house.

Forage Production

Other enhancement works, to refurbish the Dutch barns and erect a new security fence at Caughall Farm, have allowed the transfer to the forage stores from the old elephant facility to this new location. The supply of fresh grass to animal sections continued throughout the Spring and most of the Summer – but a growing emphasis on browse (succulent twigs) for food and behavioural enrichment necessitated a change of labour priorities. Regular browse collection runs for quantities of oak, ash, lime, sycamore, willow, poplar and sea buckthorn yielded large amounts of this increasingly important food resource. Sources included woodland management and hedge-laying schemes (or competitions) outside of the Zoo. Plans were also progressed to establish yet more in-house plantations of suitable browse species. Such arrangements have of necessity to be tied in with the other aspects of managing the Society's farmland. To boost our credentials in sustainable management we made an application to the Department of the Environment (DEFRA) to join the Entry Level Scheme for utilising land in as environmentally sympathetic a fashion as possible.

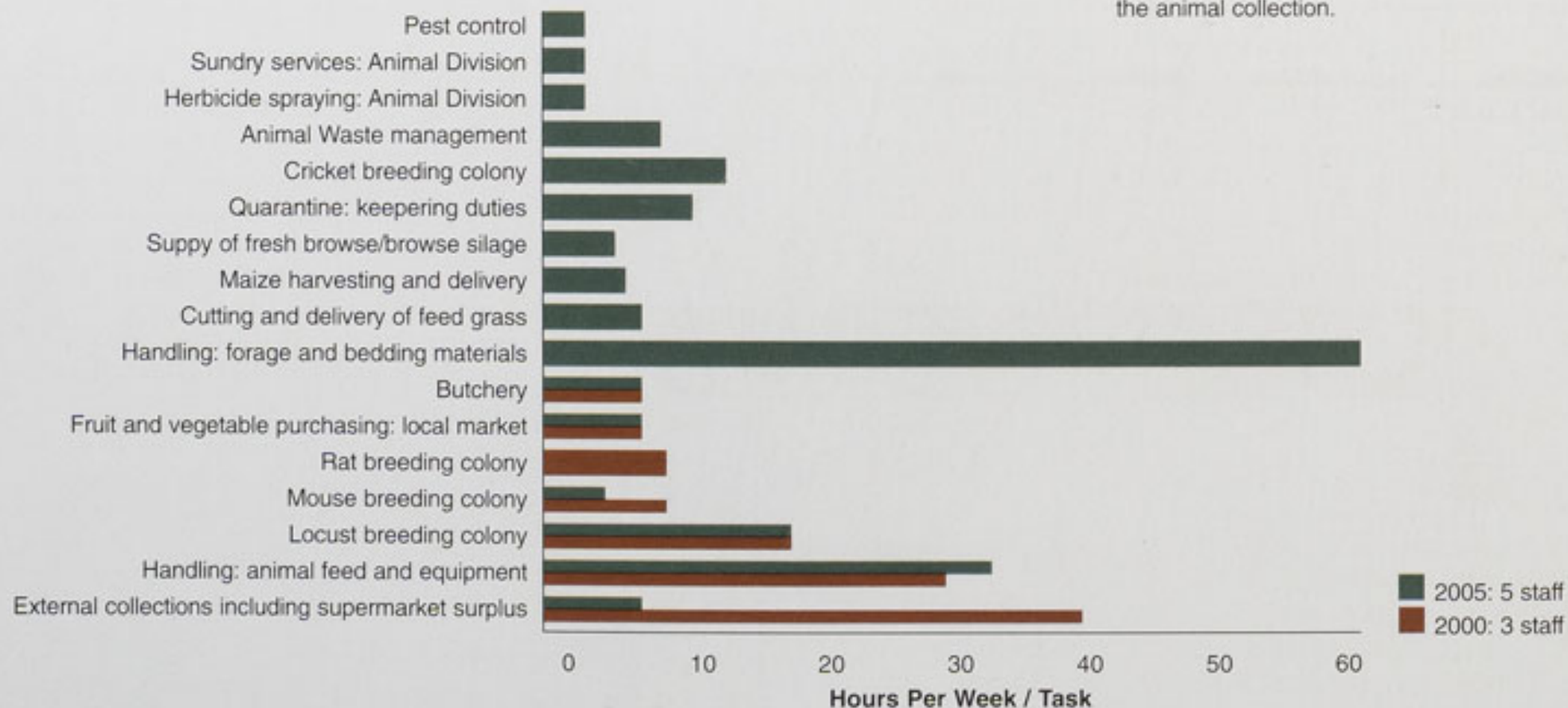
Food Production

The section evaluated production methods in its new cricket breeding colony. After months of research and development work, the colony is finally producing meaningful numbers of these essential, nutritious food items. The historically successful locust colony continues to generate a far greater bulk output than the fledgling cricket colony – but the nutritional advantages of crickets over locusts may necessitate a future change in production priority. Nutritional and welfare enrichment considerations have necessitated changes to the range of general foodstuffs sourced: nowhere more apparent than in the ever-increasing variety of fresh fruit and vegetables delivered daily to the animal sections. The diverse range of materials, equipment and other services supplied to the Animal Division continues to expand in keeping with changes throughout the Zoo.

Pest Control

The need to control pests, including rodents, cockroaches, pharaoh ants and wasps remains a year-round undertaking. Indeed the scale of this operation increases annually in proportion to the Zoo's expansion and particularly the construction of new animal exhibits. The increasing emphasis on animal welfare and resultant improvements in housing standards in turn creates ever more advantageous environments for pest species. Control is effected via external professional agencies and also in-house staff trained to achieve the removal of pests without risk to the animal collection.

Expansion of Animal Supplies
Department responsibilities:
comparison between 2000 and 2005





Mark Sparrow
Curator of Botany
and Horticulture

Botany and Horticulture

The year started with the construction and planting of the *Wildlife Garden* exhibit, based on an earlier prize-winning design forged by Chester Zoo in partnership with English Nature. It was installed to represent a typical suburban back garden – to give visitors ideas for their own sustainable gardens.

Awards

The Gardens picked up a number of awards during the year (p.7) including the *Northwest in Bloom* and *Chester in Bloom* trophies for the best large tourist attraction. We also came second in the *National Horticulture Week Awards*, 'Best Garden Design and Construction' category, for the *Dragons in Danger* garden.

The *Dragons in Danger* garden contains a pond, garden shed, compost heaps, log pile, wild flower area, herbaceous border and a small vegetable patch. It is environmentally friendly, with bird feeders, nest boxes and insect homes. Interpretation panels give information about the importance of gardens for native wildlife. A large area of the Rock Garden, near to Oakfield House, was also re-landscaped. A waterfall, stream and ponds were constructed and large rocks were positioned to create a naturalistic landscape for plants from China, Japan and the Himalayan region.

A busy programme of planting to new and existing animal enclosures was undertaken throughout the year including for *Tsavo* (Black Rhinos, Phase 2), *Okapi*, *Tigers*, *Tropical Realm*, *Monkey Islands*, and *Spirit of the Jaguar*. Working closely with the Education Department, more plant signs were put out in the Zoo. Plant identification labels were erected on the *Very Important Plant* border and information signs now accompany the cacti and carnivorous plants in the attractive *Grow Zone*.

Conferences and Festivals

The first joint European and UK National (EAZA/ BIAZA) *Zoo Horticulture Conference* was hosted by the Zoo in June. Seventy delegates attended from 35 organisations representing 13 countries. The conference focused on three main subjects - plant conservation in zoos, environmental issues and enclosure design and exhibit theming. A CD-rom of the proceedings was produced at Chester.

The *4th Orchid Festival* took place in February and proved to be a very popular event. The displays by National Association of Flower Arranging Societies were spectacular and members of the Cheshire and North Wales Orchid Society and our own staff were on hand to offer cultivation tips. The Zoo is also heavily involved in promoting the *Cheshire Gardens Strategy* (see Marketing and Development report p.42).

As ever, continuous professional development has been a high priority for staff. Senior Horticulturists Keith Done and Ray Newey both gained an NVO 2 in Amenity Horticulture (Nursery). Horticulturist Scott Ashton attained an NVO 3 in Amenity Horticulture (Landscaping) and also completed the Modern Apprenticeship scheme. I am particularly proud to note that Team Leader Mark Hargreaves was presented with the *City and Guilds Medal of Excellence* for outstanding performance in the Level 3 NVO in Amenity Horticulture (Landscaping).

Outreach Work

Conservation outreach is becoming a central pillar of botanical activity. I visited the Philippines from 5th – 18th March with Maggie Esson from the Education Division (picture below). The purpose of our trip was to evaluate important plant conservation work sponsored by Chester Zoo. It was very exciting to see at first hand the various projects that we support. I was particularly impressed with the wardening schemes on Polillo and Cebu Islands, which are protecting areas of forest and therefore conserving both animal and plant species. Paul Shippides, Team Leader in the Plant Nursery, visited Argentina on a four-week botanical expedition, concerning the conservation of cacti.

Records and Network

We continue to input and add to the number of significant plant records maintained on the BG-Base database. As a member of the Plant Network Board of Directors I attended a number of meetings during the year ensuring that Chester Zoo is helping to shape and influence decisions regarding the future of botanical conservation work and collections in the UK.





Roger Wilkinson
Head of Conservation
and Science

Conservation and Science Division

The Conservation and Science Division manages our field conservation work, databases, Zoo research, animal records and breeding programmes.

The restatement of the vision and mission of the North of England Zoological Society this year has reinforced the conservation role and purpose of our organisation. To become a 'major force in conserving biodiversity worldwide' we have strengthened field-based activities at home and abroad and greatly increased staff and technical support directed towards this mission. Our ever expanding remit in conservation and research work involved at least 150 projects in 43 countries in six continents (see p.18/19). Most projects are organized within eight major Conservation Programmes, some geographically inspired and others species or habitat based.

Philippines Programme

In the Philippines our long-term work continues to support critical forest habitats on Polillo Island and Cebu, as well as conservation breeding centres on Panay and Negros islands. A most important event in 2005 was the first *ex-situ* breeding of the critically endangered Visayan Wreathed-billed Hornbill in Panay. We assisted with the attendance of three Filipino staff members who presented papers at the International Hornbill Conference in South Africa. Our support for Philippine Hornbill conservation was also greatly enhanced through funds received from the German Zoo supported *Stiftung Artenschutz*. We also continue with the Philippine Red-vented Cockatoos field conservation programme.



Rodrigues Fruit Bat
(*Pteropus rodricensis*)

Chinese Partnerships

The China Programme moves from strength-to-strength, with our investment in assisting Sichuan forest reserves showing results with increases in the flagship population of Sichuan Partridge in one of the reserves. A new three-year agreement was signed between the Society and the Sichuan Forestry Department. Support for Yellow-throated Laughing Thrushes continues in Wuyuan, as does collaborative genetic research with Cardiff University. Links with China were furthered by a visit in July from a senior delegation of Zoo Directors from the Association of Zoological Parks & Gardens, Beijing Zoo, and Chengdu Giant Panda Breeding Base. The purpose of the visit was to forge closer cultural, scientific, technical and tourism ties with the North West, Cheshire and Chester. And this was expressed as a *Memorandum of Cooperation* signed by both parties. The delegation was formally welcomed by the Lord Mayor of Chester at a civic reception in the Town Hall attended by the Chairman, Director General and Zoo Council Members. Professors Peter Wheeler and Malcolm Bennett also kindly hosted sections of the programme. In November, the Society hosted a second regional delegation of representatives from the Urumqi Government and the Chinese Association of Zoological Gardens. Urumqi is to develop a major new wildlife park, and the delegation showed a particular interest in understanding how their Zoo might link to local and regional biodiversity initiatives. This type of exchange of information helps to conserve animals and plants in China, and may also lead to improvements in animal welfare. There are likely to be wider, long-term benefits from fostering Chinese tourism and trade links in the North West.

Active in Africa and Asia

Support for Black Rhinos in Kenya, in partnership with *Save the Rhino International*, included assistance for anti-poaching teams in Tsavo East and the Chyulus area, and for community education in Laikipia. We also continued our input for Black Rhinos in Mkomazi Reserve, Tanzania and for scientific studies on individual recognition of rhinos through photographic and genetic techniques.

In Nigeria the important primate research at Gashaka Gumti National Park received continued support. This includes bursaries for Nigerian students and significant funds donated to the National Parks authority to proceed with

demarcation of the reserve boundary. Associated botanical conservation work in montane forest at Ngel Nyake also received our support (see also Botany Report, p.15).

On Mauritius we continue with the recovery programmes for Critically Endangered passerine birds and Echo Parakeet. Three of our keeping staff were seconded to assist with this work, where their incubation and hand-rearing skills are being used to increase the productivity of the wild populations of Mauritius Fodies and White-eyes. With Zoo help, botanical work began on threatened endemic plants of Mauritius.

The *Assam Haathi Elephant Programme*, now in its second year, has involved several training sessions for our 20 Assamese field assistants, and 'cash crop workshops' for local farmers affected by crop-raiding elephants. Both the GIS computerised mapping and community outreach components are progressing well, and the project received international press attention. Our *Jaguar Conservation Programme* is being developed to include an international survey of Jaguar-human conflict.

Native Species Conservation

Our *Native Species Programme* focuses on work in Cheshire and North Wales. Highlights include the Black Poplar scheme, the development of a new Dormouse initiative, continuation of work on Harvest Mice, and further releases of zoo-bred Sand Lizards.

The skills and experience of our own conservation staff are supported by increased training for continuous professional development. This included advanced courses in computerized Geographical Information Systems (GIS) and support for MSc and DPhil research degrees.



Echo Parakeet
(*Psittacula eques*)

International training workshops were facilitated by members of our curatorial staff and many individuals at all levels of our organisation were encouraged and helped to work with conservation projects at home and abroad (some through the proceeds of our *Keeper for a Day* scheme).

Research for Conservation

Zoo research included studies on: the Spectacled Bears following the arrival of a new female; behavioural changes in the Mandrills in relation to Zoo visitor presence; the breeding and courtship behaviour of the Ecuadorian Amazon Parrots; and the global impact of introduced species of fish. More than 90 undergraduate and 17 post-graduate research projects were conducted in the Zoo, and many other projects were conducted by Research Assistants and Zoo volunteers. This has resulted in over 65 scientific publications and reports (p.22-23).

Animal records and studbooks come under the Conservation & Science remit because these records may serve as a valuable research tool. In 2005, a great deal of support was given to the development of the Zoological Information Management System (ZIMS-ISIS) as the new global animal records database. At home, our own records and studbooks received international recognition because of their outstanding data quality – a considerable undertaking given the 20,000 detailed records, ten studbooks and 130 studbook species that are now (or have been) maintained at Chester.

In-house Scientific Research

Good quality research has an important role in modern zoos, as well as being a legal requirement. Chester Zoo is committed to research as part of its drive to support and promote conservation by breeding threatened species, by excellent animal welfare, high quality public service, recreation, education and science. The Zoo's Research Dept is located within this Division. In 2005, the Research Dept co-ordinated more than 123 research projects by Zoo staff and visiting scientists, from Universities and Colleges in the UK and worldwide (see box). Many studies were carried out at the Zoo by academics and students, including postgraduates. Zoo staff are also involved in research projects, including the Vets, Nutritionist, Curators, Animal Keepers, Education staff and Conservation and Science Division staff, in a variety of basic and applied fields. In-house

research projects that Zoo staff have been involved in during 2005 include an investigation of inbreeding in European-housed Jaguars, an investigation of enrichment techniques used across Europe for Jaguars, Asian Elephant birth behaviour, nutrition of equids, and reproductive hormonal monitoring in the Eastern Black Rhinoceros. The Zoo also coordinates several *in-situ* conservation programmes, which include large components of research. For example, the Jaguar programme incorporates doctorate research – and is an investigation of jaguar-rancher conflict in South America; and the Asian Elephant Programme is a study of human-elephant conflict, using Geographical Information Systems as a research tool. In 2006, we intend to increase the output of good quality scientific research conducted at the Zoo.

The Director General and a team of Zoo staff attended the EAZA Annual meeting hosted by Bristol Zoo in September. Over 550 participants from 27 countries attended the 4 day conference, with more than a hundred presentations, meetings and workshops taking place.

The Director General chaired the EAZA Research Committee meeting and also chaired a working group to formulate EAZA's response to the *World Zoo and Aquarium Conservation Strategy* (WZACS). Chester Zoo has developed a significant profile in Europe, the Director General is on the EAZA Council and Zoo staff are involved in all of the key committees.

The Society hosted a meeting of the EAZA Research Committee at the Zoo in February. The Committee agreed a draft *European Zoo Research Strategy* which was presented at the EAZA AGM in Bristol. Zoo Nutritionist Dr Andrea Fidgett contributed substantially to the meeting as Chair of the European Zoo Nutrition Group (which operates as a subset of the EAZA Research Committee).

The Society has sent a full response to DEFRA who requested views on a draft document on the conservation requirements of the Zoo Licensing Act. This is part of a national conservation consultation exercise.



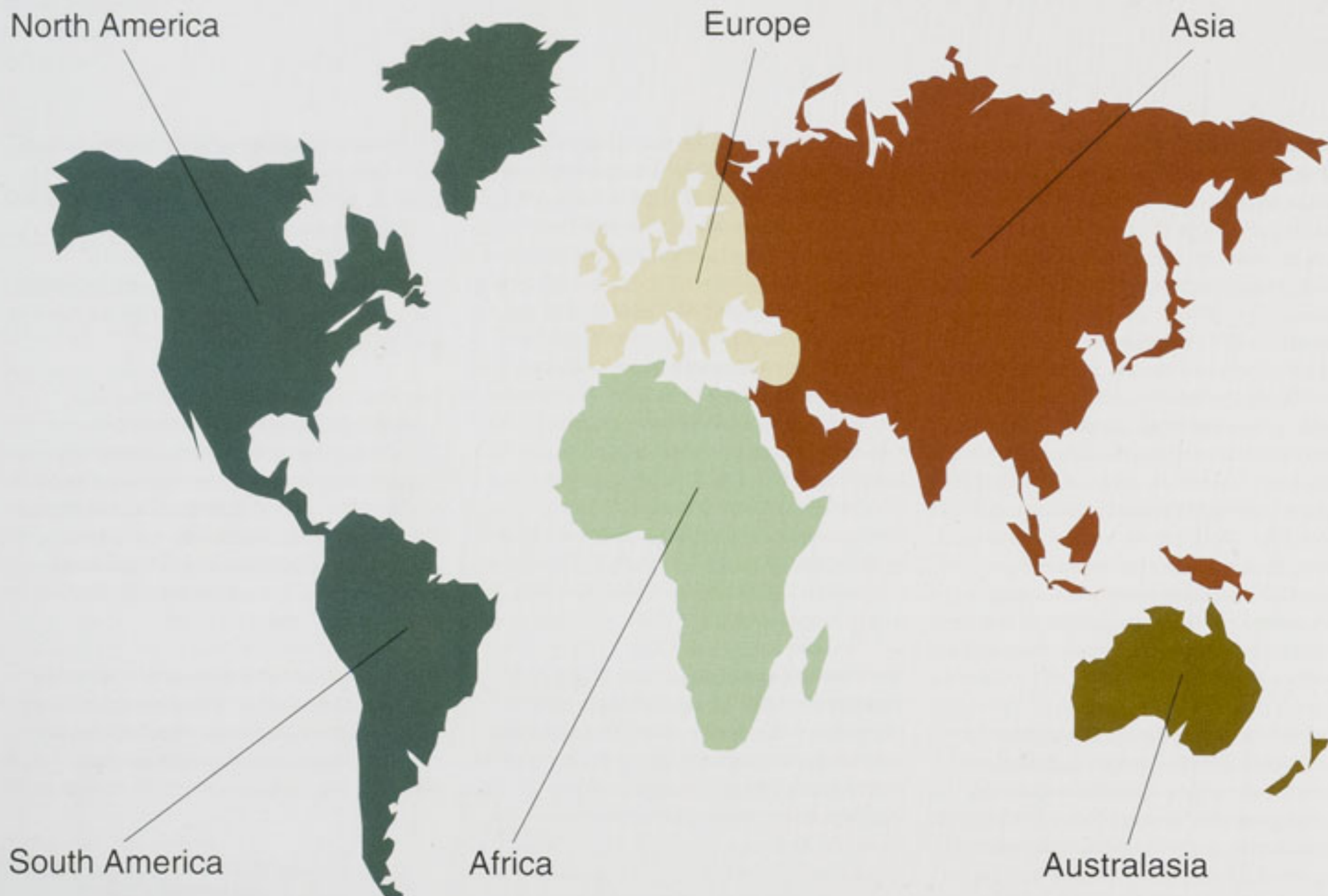
Visayan Writhe-billed Hornbill (Aeros waldeni)

On-site research

This involved 112 visiting researchers (from 23 institutions) for 123 projects. The majority were students, including 87 BSc, 12 MSc, 3 PhD, 2 MPhil, 2 BVetMed, 1 BA and 1 HND. Of these, 85 were based in the North West, 25 from the rest of the UK and 2 from overseas.

Conservation and Science Worldwide

Our conservation work in 2005 spanned more than 150 activities or projects in 43 countries and 6 continents.



North and South America

Argentina

- Support via the *Declining Amphibian Population Task Force* for the Patagonian Frog conservation project
- Support for the 3rd International Tapir Symposium

Belize

- NEZS Jaguar Programme: Jaguar surveys at the Cockscomb Basin Wildlife Sanctuary

Bolivia

- Student project support: Varzea Forest expedition
- Advisory visit of NEZS staff to La Paz Zoo

Brazil

- Black Lion Tamarin group sponsorship
- Support for Buffy-headed Capuchin field surveys
- Staff participation at the Society for Conservation Biology Annual Conference
- Support for Spider Monkey socio-ecological research
- Support for Atlantic Forest Tapir and habitat conservation

Colombia

- Staff capacity building visit to Barranquilla Zoo
- NEZS Jaguar Programme: Jaguar Grant support for research into comparative Jaguar abundance in Colombian Amazonia

Ecuador

- Student project support: Glasgow University expedition

Guatemala

- Support for *ex situ* reproduction schemes for endangered reptiles at the Guatemala Natural History Museum

Mexico

- Support for the conservation of axolotl at Lake Xochimilco
- Support for the conservation, maintenance and management of Mexican goodeid fishes

Trinidad and Tobago

- Support via the *Declining Amphibian Population Task Force* for a pilot study on the Cane Toad

United States of America

- Director and staff participation at the *WAZA/CBSG Conference*, New York
- Staff participation in rhino keeper workshops
- Curator participation at the *Zoos and Aquariums Committing to Conservation Conference* and workshops
- Staff participation at the *Envirovet Summer Institute*
- Staff participation at the Society for Conservation GIS Annual Conference
- Curator participation at the CBSG workshop on Amphibian Conservation, Syracuse
- Staff participation at the Visitor Studies Conference
- Staff participation at the joint conference for the American Association of Zoo Veterinarians/ Wildlife Disease Association/Nutrition Advisory Group
- Curator participation in the *Global Amphibian Summit*
- Support and Curator participation in Atelopus Harlequin Toad conservation workshop
- Curator participation at the IUCN SSC CBSG annual meeting

Venezuela

- Support for the creation of the *Andean Bear Defenders Club for Kids*

Europe

Czech Republic

- Curator participation in the EAZA Small Mammal TAG meeting

Denmark

- Staff participation in the EAZA Lower Vertebrate & Invertebrate TAG meeting

Eire

- Curator participation at the *Plant Network Conference*
- Staff participation at the *BA Festival of Science*

Europe wide

- Coordination of the EAZA *Shellshock Campaign*

France

- Staff participation at the EAZA Rhino TAG meeting
- Staff participation at the European Zoo Educators Conference

Germany

- NEZS coordination and staff participation at the *WAZA/EAZA Marketing Conference*
- Staff participation at the *4th European Zoo Nutrition Conference*
- Staff participation at the *1st Congress of the European Federation of Primatology*
- Curator participation at the EAZA Ape TAG meeting

Greece

- Student project support: Assessing the distribution and marking activity of Brown Bears

Netherlands

- Staff participation at the *ZIMS Data Standards workshop*
- Curator participation in EAZA amphibian crisis meeting

In 2005 Chester Zoo was involved in 45 mammal, 17 bird, 4 reptile, 8 amphibian, 5 fish, 5 invertebrate and 5 plant-related conservation activities. 35 activities included staff participation at conferences or workshops with a broad remit, and 16 activities involved projects with a habitat, community, education or general biodiversity focus.

Poland

- Staff participation in the 2nd International Conference, *Animals and Zoos: Current Research Focus*

Russian Federation

- Education interpretation support for Moscow Zoo

Turkey

- Support for the *Birecik Bald Ibis Project*

United Kingdom

- NEZS continued support for rECOrd through provisional improved office accommodation
- Staff participation at 2005 rECOrd conference *Unlocking the Past*
- Support, and Directors participation as Trustee, for the *Frozen Ark Project*
- Support for *Diseases in Elephants* publication
- NEZS hosted and funded the global IUCN/WI Freshwater Fishes Specialist Group meeting
- Support for research into the physiological adaptability of larval fish to changing environmental parameters
- Support via the BIAZA Elephant TAG for elephant research
- NEZS *Native Species Programmes*: Support for studies into the status and distribution of Barn Owls in NE Wales
- Black Poplar project
- Harvest Mouse project
- Support for the Clwyd Badger Group
- Fresh Water Pearl Mussel project
- Dormouse conservation project
- Support for the Cheshire Mammal Atlas
- Support for aquatic plant conservation
- NEZS contracted to produce a *Rehabilitation of Wildlife* publication for the Greater London Authority
- Support for the Natural Sciences Collections
- Director and staff participation at the EAZA Conference
- Director participation and hosting of *Frozen Ark* project meeting
- Director participation in WWF Programme Committee meetings
- Director participation and trustee chair of Linnean Society meetings
- Staff participation at the Incubation and Fertility Research Group
- Staff participation in the UK launch of the Jane Goodall Institute's *Roots and Shoots* programme
- NEZS hosted meetings of Cheshire Regional Biodiversity Partnership and steering group
- Support for the protection of the remaining Eastern Lowland Gorilla
- Director chair and support for EAZA Research Committee Meeting

Africa

Botswana

- Staff participation at the *African Zoo and Reserve Educators Conference*

Cameroon

- Support and staff participation at the *Third Annual Pan African Sanctuaries Alliance Veterinary Healthcare* workshop
- Support for research into gastrointestinal parasite burdens of great apes and their husbandry staff

Democratic Republic of Congo

- Support for Okapi Wildlife Reserve Breeding and Research Centre
- Support for a safe house for orphaned chimpanzees and other primates

Kenya

- NEZS Rhino Programme: Support for the running costs of the Black Rhino monitoring and protection programme in Tsavo East National Park
- Support for *Save the Rhino International* activities
- Support for Black Rhino protection in the Chyulu Hills National Park
- Support for rhino conservation at Solio Ranch
- Support for a Community Conservation Programme in Laikipia
- Support for research into non-invasive molecular genetic analysis of enclosed Black Rhino populations

Mauritius

- NEZS Mascarenes Programme: Support for the conservation of critically endangered plants
- Support for the monitoring of marine reserves and assessing the status of endemic species
- Support for the annual survey of the Rodrigues Fruit Bat population
- Support for the conservation of the Echo Parakeet
- Support for the establishment of a translocated Mauritius Fody population on the predator free island of Ile aux Aigrettes
- NEZS Mascarenes Programme: Secondment of Chester Zoo keepers for bird rearing projects

Nigeria

- Support via the *Declining Amphibian Population Task Force* for research into the distribution and ecological requirement of the Goliath Frog
- NEZS Nigeria Programme: Curator programme field trip to Gashaka Gumti National Park
- Support for the demarcation of Gashaka Gumti National Park boundary
- Support for the Gashaka Primate Project: continuing capacity building, research and conservation efforts
- Support for the Nigerian Montane Forest Project

Republic of Congo

- Student project support: Community attitudes around Nouabale-Ndoki National Park

South Africa

- Staff participation at *Envirovet* Summer Institute
- NEZS staff and Filipino Programme staff participation at International Hornbill Conference
- Curator participation in the Southern Ground Hornbill PHVA meeting
- Staff secondment to EWT Kruger game capture team

Tanzania

- NEZS Rhino Programme: Support for fence maintenance at the Mkomazi Rhino Reserve

Uganda

- Keeper exchange with Ngamba Island Chimpanzee sanctuary
- Support for conservation education and community awareness programme at the Chimpanzee Sanctuary and Conservation Trust

Asia

Bangladesh

- Curator conducted IUCN field training workshop

China

- NEZS China Programme: Support for the Sichuan Forest Biodiversity Project: Support for field studies and conservation management of the Yellow-throated Laughing Thrush
- Support for research into the genetic diversity of South China Tigers
- Curator field trip to monitor and coordinate development of China Programme
- Support for research into the molecular sexing of Yellow-throated Laughing Thrush
- Support into research on the isolation and characterisation of microsatellite loci of Red Panda

India

- Support for the Greater Adjutant rescue and rehabilitation project
- NEZS Asian Elephant Conservation Programme: *Assam Haathi Project*
- Support for various activities of the Zoo Outreach Organisation and Wildlife Information Liaison Development Society
- Curator participation in the IUCN SSC CBSG and Reintroduction Specialist Group meeting on translocation and rehabilitation of wildlife
- Curator participation in the South Asian Zoo Association for Regional Cooperation meeting

Indonesia

- Support for a mobile Orang-utan education unit in Aceh west, Sumatra
- Support for an Orang-utan habitat protection project in the Sangkil Swamp, Sumatra
- Support for the Komodo Dragon Project – Community awareness, habitat and wildlife protection plan for the Wae Wuul Nature Reserve, West Flores
- Student project support: Orang-utan research in Borneo

Malaysia

- Support for the production of an *Orang-utan State Action Plan* for Sabah
- Support for the Lower Kinabatangan Wildlife Sanctuary – Wildlife Warden Project

Nepal

- Support for an Asian elephant helminth parasite study

Philippines

- Support for the Philippine Cockatoo Conservation Programme
- NEZS Philippines Programme: Support for the *in-situ* protection scheme for the Visayan Writhe-billed Hornbill on Panay
- Support for a Biodiversity Conservation Education Programme for the Nug-as Forest Reserve
- Curators visits to the Philippines to assess conservation breeding support and conduct small mammal training workshops
- West Visayas and Polillios core funding
- Support via *Stiftung Artenschutz* for remote nest monitoring of Visayan Hornbills
- Support via *Stiftung Artenschutz* for the construction of holding aviaries and nest boxes for *ex situ* bred Visayan Hornbills at the Mari-It Conservation Park
- Support via *Stiftung Artenschutz* for the conservation management and breeding of a world founder *ex-situ* populations of West Visayan hornbills
- Support for an education and awareness campaign on Negros

Sri Lanka

- Emergency support to the Pinnawella Elephant Orphanage following the Asian Tsunami disaster
- Emergency support for the community-based Turtle Conservation Project following the *Asian Tsunami* disaster
- Curator conducted IUCN field training workshop

Thailand

- Support for the *Tapoh Village Conservation Education Centre*
- Hornbill nest adoptions
- Student project support: An investigation into the long term effects of natural and anthropogenic factors on coral communities of reef flats
- Student project support: An investigation into the preferential susceptibility of coral species to bleaching on intertidal reef flat
- Support for hornbill research on fragmented forest landscapes

United Arab Emirates

- Support for the Wadi fish project – ecology, distribution and conservation status

Australasia

Australia

- Directors participation at WAZA mid-year council meeting
- Staff participation at the *International Zookeepers Conference* Steering Group meeting and SEAZA Research Workshop

Polynesia

- Support for the Partula Field Programme Consortium

Scientific Publications and Technical Reports

Below is a selection from more than 70 publications and reports involving numerous staff and external colleagues in 2004/2005. In addition, the Zoo funded various external conservation and research publications and published in-house 8 editions of *International Zoo News* (Editor Nicholas Gould). There were 32 original feature articles published in *International Zoo News* in 2005. Authors originated from the UK (14), U.S.A. and Germany (5), France and Poland (2), and one each from Brazil, Ireland, Italy and New Zealand.

Brassey, N.R., 2005. *Orang-utan density estimates and ecological preferences in the lowland dipterocarp forests of Central Kalimantan, Borneo*. Project Dissertation, University of Wales, Bangor.

Brunger, D., 2005. Dwarf Forest Buffalo (*Syncerus caffer nanus*) ESB Studbook CD, Edition No. 3 (data current to 01/06/05). Chester, UK: North of England Zoological Society.

Brunger, D. 2005. Studbook reconciliation Manual. Chester, UK: North of England Zoological Society.

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Livestock Summary

Animal Stock

	NUMBER OF SPECIES END 05	NUMBER OF SPECIES END 04	NUMBER OF SPECIMENS END 05	NUMBER OF SPECIMENS END 04	SPECIES BRED & REARED END 05	SPECIES BRED & REARED END 04	SPECIMENS BRED & REARED END 05	SPECIMENS BRED & REARED END 04
MAMMALS	66	62	1052	968	28	31	609	424
BIRDS	166	162	1027	995	46	45	260	251
REPTILES	50	47	216	219	5	7	16	85
AMPHIBIANS	15	13	490	496	4	8	123	565
FISHES	87	97	2891	3029	21	22	*	*
INVERTEBRATES	33	31	1610	1586+	19	20	*	*
TOTAL	417	412	7286+	5818+	123	133	1008	1325

* Not included because of the excessively high numbers involved

Mammals	20 species were sent to 21 collections
Birds	29 species were sent to 24 collections
Reptiles	11 species were sent to 10 collections
Amphibians	6 species were sent to 10 collections
Aquarium	24 species were sent to 10 collections

Threatened Animal Species (IUCN Red List) &/or Managed Programmes

	2005	2004		2005	2004
Threatened species in Chester Zoo	224	232	Threatened species held and bred to date	167	170
% of all livestock	54%	56%	% of threatened species bred	74%	73%

ISIS Animal Data Quality Management Figures

DATA QUALITY 28/11/05

	Chester Zoo	International Avg
Transaction Link Rate	Linked 99%	ISIS Avg. 78%
Validated Parent Rate	Validated 100%	ISIS Avg. 95%
*Institution/Studbook Reconciliation Rate	Reconciled 89%	ISIS Avg. 75%
Studbook Reconciliation Rate	Reconciled 83%	ISIS Avg. 75%

Chester Zoo performed at a level substantially above the average for other members of the International Species Information System (ISIS):

Transaction Link Rate

(discrepancies in NEZS data when animals have been transferred between institutions)

Parental Validation

(discrepancies in NEZS data pertaining to parentage of animals)

Studbook Reconciliation

(discrepancies between NEZS data and studbook data)^{††}

*Your Studbook Data

(discrepancies between NEZS studbook data and other institutions data)

^{††}This indicator was only deployed by ISIS in October 2005

Animal Summary

	IUCN RED LIST	MANAGED PROGRAMMES	TOTAL IUCN &/or MANAGED PROGRAMMES
MAMMALS	51	47	56
BIRDS	75	59	88
REPTILES	26	25	31
AMPHIBIANS	5	1	5
FISHES	29	15	31
INVERTEBRATES	6	12	13
TOTAL IN ZOO	192	159	224

Numbers of Animal Species in IUCN Red List

EW - Extinct in the wild	8
CR - Critically endangered	37
EN - Endangered	35
VU - Vulnerable	65
NT - Near threatened	43
DD - Data deficient	5
TOTAL IN ZOO	192

*CITES Summary for Animals

CITES	APPENDIX I	APPENDIX II	TOTAL
Mammals	26	11	37
Birds	28	56	84
Reptiles	9	33	42
Amphibians		7	7
Fishes	2	1	3
Invertebrates		7	7
TOTAL IN ZOO	65	115	180

Numbers of Plant Species in IUCN Red List

EW - Extinct in the wild	4
CR - Critically endangered	5
EN - Endangered	33
VU - Vulnerable	156
NT - Near threatened	13
DD - Data deficient	4
LR - Lower risk	14
LR/NT - Lower risk/Near threatened	7
TOTAL IN ZOO	236

Significant collections of threatened plants in Chester Zoo:

Cactaceae = 71
Orchidaceae = 43
Palmae = 17

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*CITES (Convention on International Trade in Endangered Species of Wild Flora and Fauna) www.cites.org



Chimpanzee (*Pan troglodytes*)

Livestock 2005 Threatened Animal Species – IUCN Red List

COMMON NAME	SCIENTIFIC NAME	BRED 2005	BRED <2005	2004 IUCN RED LIST	MANAGED PROGRAMME	COMMON NAME	SCIENTIFIC NAME	BRED 2005	BRED <2005	2004 IUCN RED LIST	MANAGED PROGRAMME	COMMON NAME	SCIENTIFIC NAME	BRED 2005	BRED <2005	2004 IUCN RED LIST	MANAGED PROGRAMME
MAMMALS						BIRDS CONT.						AMPHIBIANS					
1 Western Grey Kangaroo	<i>Macropus fuliginosus</i>	X	X	ESB		32 Red-crowned Crane	<i>Grus japonensis</i>	X	X	EN	EEP/ISB	1 Axolotl	<i>Ambystoma mexicanum</i>			X	VU
2 Rodrigues Fruit Bat	<i>Pteropus rodriguesis</i>	X	X	CR	EEP/ISB	33 White-rumped Crane	<i>Grus leuco</i>			X	VU	EEP/ISB	2+ Blue Poison Arrow Frog	<i>Dendrobates azureus</i>	X	X	VU
3 Ring-tailed Lemur	<i>Lemur catta</i>	X	X	VU	ESB	34 Wattled Crane	<i>Grus carunculatus</i>			X	VU	JMSP/ISB	3 Golden Poison Dart Frog	<i>Phyllotates terribilis</i>	X	X	EN
4 Black and White Puffed Lemur	<i>Varecia variegata variegata</i>	X	X	EN	EEP/ISB	35 Blue Crane	<i>Grus paradisea</i>			X	VU	ESB	4 Mallorcan Midwife Toad	<i>Alytes muletensis</i>	X	X	VU
5 Red Ruffed Lemur	<i>Varecia variegata rubra</i>	X	CR	EEP/ISB		36 West African Crowned Crane	<i>Baleatic pavonina pavonina</i>	X	X	NT	ESB/JMSP	5 Puerto Rican Crested Toad	<i>Rhombophryne</i>			CR	SSP
6+ Geoffroy's Marmoset	<i>Callithrix geoffroyi</i>	X	X	VU	EEP	37 Pink Pigeon	<i>Streptopelia mayeri</i>	N/A	X	EN	EEP/ISB						
7+ Alouatta Gentle Lemur	<i>Haplorhina leucis alouattina</i>			CR	ESB	38 Blue Crowned Pigeon	<i>Goura cristata</i>	N/A		VU	ESB/ISB						
8 Cotton-top Tamarin	<i>Sapajus oedipus</i>	X	EN	EEP/ISB		39 Victoria Crowned Pigeon	<i>Goura victoria</i>			X	VU	ESB/ISB					
9+ Pied Tamarin	<i>Sapajus bicolor</i>	N/A	N/A	CR	ISB	40 Nicobar Pigeon	<i>Columba nicobanica</i>			X	NT						
10 Buffy-headed Capuchin	<i>Cebus xanthosternus</i>	X	X	CR	EEP	41 Mountain Wilt Dove	<i>Geopelia striata</i>			X	NT						
11 Colombian Black Spider Monkey	<i>Ateles fusciceps robustus</i> (<i>A. geoffroyi rubertristis</i>)	X	VU	JMSP/EEP		42 Mindanao Bleeding-heart	<i>Gallicolumba cringeri</i>			X	EN	ESB					
12 Lion-tailed Macaque	<i>Macaca silenus</i>	X	X	EN	JMSP/ISB	43 Luzon Bleeding-heart	<i>Gallicolumba luzonica</i>			X	NT	ESB					
13 Sulawesi Crested Macaque	<i>Macaca nigra</i>	X	X	EN	EEP	44 Jambu Fruit Dove	<i>Ptilinopus jambu</i>			X	NT						
14 Mandrill	<i>Mandrillus sphinx</i>	X	X	VU	ESB	45 White-rumped Pheasant Pigeon	<i>Otidiphas nobilis arvensis</i>	X	X	ESB							
15 Chimpanzee	<i>Pan troglodytes</i>	X	X	EN	JMSP	46+ Socorro Dove	<i>Zenaidura macroura</i>	N/A	EW	EEP							
16 Bornean Orang-utan	<i>Pongo pygmaeus</i>	X	EN	EEP/ISB		47 Mount Apo Lorikeet	<i>Trichoglossus johnstoniae</i>			X	NT	ESB					
17 Sumatran Orang-utan	<i>Pongo abelii</i>	X	CR	EEP/ISB		48 Red and Blue Lory	<i>Eos histrio</i>			EN	ESB						
18 Prairie Marmot	<i>Oryzomys ludovicianus</i>	X	NT			49 Blue-shanked Lory	<i>Eos reticulata</i>			NT	JMSP						
19 Capybara	<i>Hydrochoerus hydrochaeris</i>	X	JMSP			50 Yellow-backed Chattering Lory	<i>Lorius gamalux flavipallatus</i>			X	EN	ESB					
20+ Azara's Agouti	<i>Dasyprocta azarae</i>	N/A	VU			51 Palm Cockatoo	<i>Probosciger aterrimus</i>			EN	EEP						
21 Harvest Mouse	<i>Micromys minutus</i>	X	X	NT		52 Carnaby's Black Cockatoo	<i>Calyptrorhynchus latirostris</i>			EN	ESB						
22 Turkish Spiny Mouse	<i>Acomys cilicicus</i>	X	X	CR		53 Blue-eyed Cockatoo	<i>Cacatua ophthalmica</i>			X	ESB						
23 European Water Vole	<i>Arvicola terrestris</i>	X	N/A	JMSP		54 Red-vented Cockatoo	<i>Cacatua hemmaturus</i>			CR	EEP						
24 Maned Wolf	<i>Chrysocyon brachyurus</i>	X	NT	EEP/ISB		55 Koa	<i>Nestor notabilis</i>			X	VU	ESB					
25 Bush Dog	<i>Speothos venaticus</i>	X	X	VU	EEP/ISB	56 Black-cheeked Lovebird	<i>Agapornis nigripennis</i>			VU	JMSP						
26 Red Panda	<i>Ailuropus fulgens fulgens</i>	X	EN	EEP/ISB		57 Hyacinthine Macaw	<i>Anodorhynchus hyacinthinus</i>			X	EN	EEP					
27 Spectacled Bear	<i>Tremactes ornatus</i>	N/A	N/A	VU	ISB/EEP	58 Blue-throated Macaw	<i>Ara glaucogaster</i>			X	CR	EEP/ISB					
28 Oriental Small-clawed Otter	<i>Aonyx cinereus</i>	X	NT	JMSP/ISB		59 Golden-capped Conure	<i>Aratinga auricapilla</i>			X	NT						
29 Amur Tiger	<i>Panthera tigris altaica</i>	N/A	X	CR	EEP/ISB	60 Golden Conure	<i>Guaruba guarouba</i>			X	EN	ESB/ISB					
30 Asiatic Lion	<i>Panthera leo persica</i>	N/A	X	CR	EEP	61 Princess Parrot	<i>Polytelus alexandrae</i>			X	NT						
31 Jaguar	<i>Panthera onca</i>	X	NT	ESB		62 Blue-throated Conure	<i>Pyrrhura cyreoides</i>			X	VU	JMSP					
32 Californian Sealion	<i>Zalophus californianus</i>	X	X	ESB		63+ Yellow-faced Parrotlet	<i>Forpus xanthops</i>			X	VU						
33 Asiatic Elephant	<i>Elephas maximus</i>	X	EN	EEP		64 Ecuadorian Amazon	<i>Amazona autumnalis fiacina</i>			X	EEP						
34 Persian Onager	<i>Equus hemionus onager</i>	X	CR	EEP/ISB		65 Green-cheeked Amazon	<i>Amazona viridigenalis</i>			X	EN	EEP					
35 Grevy's Zebra	<i>Equus grevyi</i>	N/A	N/A	EN	EEP/ISB	66 Red-tailed Amazon	<i>Amazona brasiliensis</i>			X	VU	EEP					
36+ Przewalski Horse	<i>Equus ferus przewalskii</i>	N/A	X	EW	EEP/ISB	67 St Lucia Amazon	<i>Amazona versicolor</i>			VU	ESB						
37 South American Tapir	<i>Tapirus terrestris</i>	X	X	VU	ESB	68 Fischer's Tanager	<i>Tanagra fischeri</i>			X	NT	ESB					
38 Eastern Black Rhinoceros	<i>Diceros bicornis michaeli</i>	X	CR	EEP/ISB		69 Violet Plantain Eater	<i>Mitrospiza violacea</i>			X	ESB						
39 Babirusa	<i>Babirusa babirusa</i>			VU	EEP/ISB	70 White-faced Scops Owl	<i>Otus leucotis</i>			X	JMSP						
40 Red River Hog	<i>Potamochoerus porcus pictus</i>	X	X	ESB		71 Spectacled Owl	<i>Pulsatrix perspicillata</i>			X	X	JMSP					
41 Bactrian Camel	<i>Camelus bactrianus</i>	X	CR			72 Lilac-breasted Roller	<i>Coracias caudata</i>			X	X	JMSP					
42 Chilean Pudu	<i>Pudu pudu</i>	X	VU	EEP/ISB		73 Great Hornbill	<i>Buceros bicornis</i>			X	NT	EEP/ISB					
43 Burmese Brown-antlered Deer	<i>Cervus eldi thamin</i>	X	X	NT	ISB	74 Rhinoceros Hornbill	<i>Buceros rhinoceros</i>			NT	ESB						
44 Philippine Spotted Deer	<i>Cervus alfredi</i>	X	X	EN		75 Winked Hornbill	<i>Aceros comatus</i>			X	NT	EEP					
45+ Père David's Deer	<i>Elaphurus davidianus</i>	N/A	X	CR		76 Mindanao White-billed Hornbill	<i>Aceros leucophaea</i>			NT							
46 Giraffe	<i>Giraffa camelopardalis</i>	X	X	NT	EEP	77 Tachycineta	<i>Tachycineta thalassina</i>			X	ESB						
47+ Okapi	<i>Odocoileus johnstoni</i>	N/A	N/A	NT	ISB/EEP	78 Gouldian Finch	<i>Erythrura gouldiae</i>			X	EN						
48 Lowland Anoa	<i>Bubalus depressicornis</i>	X	EN	EEP/ISB		79 Montserrat Oriole	<i>Icterus oberi</i>			CR							
49 Congo Buffalo	<i>Syncerus caffer nanus</i>	X	X	NT	ESB	80 Diamond Sparrow	<i>Stagonopleura guttata</i>			NT							
50 Eastern Bongo	<i>Tragelaphus eurycerus isaaci</i>	X	X	EN	EEP/ISB	81 Java Sparrow	<i>Padda oryzivora</i>			X	X	VU					
51 West African Sitatunga	<i>Tragelaphus spekii gratus</i>	X	X	NT	ESB	82 Yellow-throated Laughing Thrush	<i>Garrulus galbanus</i>			X	JMSP						
52+ Kudu Plains Red Lechwe	<i>Kobus leche kufensis</i>	N/A	X	VU	JMSP	83 Chestnut-backed Thrush	<i>Zosterops lateralis</i>			N/A	NT						
53+ Scimitar-horned Oryx	<i>Oryx dammah</i>	N/A	X	EW	EEP/ISB	84 Omei Shan Liochitta	<i>Liochitta omeiensis</i>			X	VU	JMSP					
54 Gemsbok	<i>Oryx gazelle gazelle</i>	X	X	NT	JMSP	85 Ball Starling	<i>Leucophaea sylvatica</i>			X	CR	EEP/JMSP					
55 Blackbuck	<i>Antelope cervicapra</i>	X	X	NT		86 Emerald Starling	<i>Coccyzoides iris</i>			X	X	DO					
56 Vicuna	<i>Vicugna vicugna</i>	X	N/A	NT		87 Red-billed Cuckoo	<i>Pyrrhuloxia pyrrhuloxia</i>			X	JMSP						
						88 Red Bird of Paradise	<i>Paradisaea rubra</i>			X	NT	ISB					
BIRDS						REPTILES											
1 Common Rhea	<i>Rhea americana</i>	X	X	NT		1 Asian Box Turtle	<i>Cuora amboinensis</i>	X	X	VU	ESB						
2+ Southern Cassowary	<i>Casuarus casuarus</i>	N/A	VU	JMSP		2+ Yellow-footed Tortoise	<i>Geochelone denticulata</i>	X		VU							
3 Humboldt's Penguin	<i>Spheniscus humboldti</i>	X	X	VU	EEP	4 Hermann's Tortoise	<i>Testudo hermanni</i>			X	NT						
4 Dalmatian Pelican	<i>Pelecanus onopros</i>			VU	EEP	5 Egyptian Tortoise	<i>Testudo kleinmanni</i>			X	CR	EEP					
5+ Black Stork	<i>Ciconia nigra</i>			ESB		6 Radiated Tortoise	<i>Geochelone radiata</i>			N/A	VU	ESB					
6 Waldraup Ibis	<i>Geronticus eremita</i>	X	X	CR	EEP	7 Pancake Tortoise	<i>Malacochersus tornieri</i>			N/A	VU	ESB					
7 Chilean Flamingo	<i>Phoenicopterus chilensis</i>	X	X	NT		8+ Galapagos Tortoise	<i>Geochelone nigra</i>	N/A		VU	ESB						
8 Black-billed Whistling Duck	<i>Dendrocygna arborosa</i>	X	X	VU		9 Black Marsh Turtle	<i>Sternotherapia crassicauda</i>			VU	ESB						
9 Lesser White-fronted Goose	<i>Anser erythropus</i>	X	VU			10 Spiny Turtle	<i>Heosemys spinosa</i>			EN	ESB						
10 Red-breasted Goose	<i>Branta ruficollis</i>	X	VU			11+ Annam Leaf Turtle	<i>Annamemys annamensis</i>	N/A		CR	TSA						
11 Hawaiian Goose	<i>Branta sandvicensis</i>	X	X	VU		12+ Zhou's Box Turtle	<i>Cuora zhoui</i>	N/A		CR	TSA						
12 Baikal Teal	<i>Anas formosa</i>	X	VU			13 Chinese Three-striped Box Turtle	<i>Cuora trilineata</i>	N/A		CR	TSA						
13 Laysan Teal	<i>Anas laysanensis</i>	X	X	CR		14 Beal's Eyed Turtle	<i>Sacalia beali</i>	N/A		EN	TSA						
14 Baer's Pochard	<i>Aythya baeri</i>	X	X	VU		15 Four-eyed Turtle	<i>Sacalia quadriocellata</i>	N/A		EN	TSA						
15 Ferruginous Duck	<i>Aythya nyroca</i>	X	X	NT		16 West African Dwarf Crocodile	<i>Osteoaemus tetraspis</i>			VU	ESB						
16 Marbled Teal	<i>Marmaronetta angustirostris</i>	X	X	VU		17 Sand Lizard	<i>Lacerta agilis</i>			X	ENP						
17 White-headed Duck	<i>Oryzopsis leucorhynchos</i>	X	X	EN		18 Standing's Day Gecko	<i>Phelsuma standingi</i>			X	VU	JMSP					
18 Andean Condor	<i>Vultur gryphus</i>	X	NT	EEP		19 Yellow-headed Day Gecko	<i>Phelsuma klemmeri</i>			X	X	ESB					
19 European Black Vulture	<i>Aegypius monachus</i>			NT	EEP	20 Rhinoceros Iguana	<i>Cyclura cornuta</i>			X	VU	ESB					
20+ Griffon Vulture	<i>Gyps fulvus</i>	N/A		ESB		21 West Indian Iguana	<i>Iguana delicatissima</i>	N/A		VU	ESB						
21 Mauritius Kestrel	<i>Falco punctatus</i>	X	VU			22 Philippine Sailfin Lizard	<i>Hydrosaurus pustulatus</i>			X	DO	JMSP					
22 Red-billed Curassow	<i>Cax buhenbachii</i>	X	X	EN	EEP/ISB	23 Prehensile-tailed Skink	<i>Corucia zebrata</i>			X	X	JMSP					
23 Royal Pigeon	<i>Rolulus rouloul</i>	X	X	NT		24 Komodo Dragon	<i>Varanus komodoensis</i>			VU	EEP						
24 Satyr Tragopan	<i>Tragopan satyra</i>	X	NT			25+ Green Tree Monitor	<i>Varanus prasinus</i>	N/A		ESB							
25 Palawan Peacock Pheasant	<i>Polyplectron emphanum</i>	X															

al Livestock 2005 Threatened Plant Species – IUCN Red List

FAMILY	SCIENTIFIC NAME	1997 IUCN RED LIST	COMMON NAME	FAMILY	SCIENTIFIC NAME	1997 IUCN RED LIST	COMMON NAME	FAMILY	SCIENTIFIC NAME	1997 IUCN RED LIST	COMMON NAME
PTERIDOPHYTA				FLOWERING PLANTS: MONOCOTYLEDONS CONT.				FLOWERING PLANTS: DICOTYLEDONS CONT.			
Polypodiaceae	<i>Platycentrum ridleyi</i>	EW		Palmae	<i>Syagrus flexuosa</i>	LR	Cotton Palm	Cactaceae	<i>Turbincarpus schmedickeanus</i> ssp. <i>gracilis</i>	VU	
GYMNOSPERMS				Palmae	<i>Washingtonia filifera</i>	LR/NT		Cactaceae	<i>Turbincarpus schmedickeanus</i> ssp. <i>klinkerianus</i>	VU	
Ascaraceae	<i>Aracaria araucana</i>	VU	Monkey puzzle	Palmae	<i>Wodyetia bifurcata</i>	VU		Cactaceae	<i>Turbincarpus schmedickeanus</i> ssp. <i>macrochele</i>	VU	
Ascaraceae	<i>Aracaria heterophylla</i>	VU	Norfolk Island Pine	FLOWERING PLANTS: DICOTYLEDONS				Cactaceae	<i>Turbincarpus schmedickeanus</i> ssp. <i>schwarzii</i>	VU	
Cupressaceae	<i>Chamaecyparis lawsoniana</i>	VU	Lawson's cypress	Azaceae	<i>Lithops aucampiae</i>	VU		Cactaceae	<i>Turbincarpus swobodei</i>	VU	
Cupressaceae	<i>Cupressus guadalupensis</i> var. <i>forbesii</i>	VU		Azaceae	<i>Lithops bromfieldii</i>	NT		Cactaceae	<i>Turbincarpus ysabelae</i>	VU	
Cupressaceae	<i>Widdingtonia schwarzii</i>	EN		Azaceae	<i>Lithops complanata</i>	VU		Campanulaceae	<i>Campanula incurva</i>	VU	
Cycadaceae	<i>Dioon spinulosum</i>	LR		Azaceae	<i>Lithops gacidelineta</i>	VU		Compositae	<i>Cosmos atrosanguineus</i>	EW	
Ginkgoaceae	<i>Ginkgo biloba</i>	EN	Maidenhair tree	Azaceae	<i>Lithops geyeri</i>	VU		Convolvulaceae	<i>Calystegia macrostegia</i>	VU	Island Bindweed
Pinaceae	<i>Picea alcoquitana</i>	VU		Azaceae	<i>Lithops lesleri</i> ssp. <i>burchellii</i>	VU		Comaceae	<i>Davidia involucreata</i> var. <i>involuta</i>	LR	Hankerschief Tree
Pinaceae	<i>Picea engelmannii</i>	VU		Azaceae	<i>Lithops schwantesii</i>	VU		Crassulaceae	<i>Aeonium balsamiferum</i>	VU	
Pinaceae	<i>Picea omonia</i>	VU		Azaceae	<i>Schwantesia trebnieri</i>	NT		Crassulaceae	<i>Aeonium castellopalvae</i>	VU	
Pinaceae	<i>Pinus muricata</i>	VU		Azaceae	<i>Illex perado</i> ssp. <i>platyphylla</i>	EN		Crassulaceae	<i>Aeonium cuneatum</i>	VU	
Pinaceae	<i>Pinus peuce</i>	VU		Asteraceae	<i>Brachyglottis compacta</i>	LR		Crassulaceae	<i>Aeonium goochiae</i>	VU	
Pinaceae	<i>Pseudotsuga amabilis</i>	VU	Golden Larch	Asteraceae	<i>Olearia hectoris</i>	EN	Daisy Bush	Crassulaceae	<i>Aeonium haworthii</i>	VU	
Podocarpaceae	<i>Podocarpus nubigenus</i>	VU		Asteraceae	<i>Olearia traversii</i>	LR/NT	Daisy Bush	Crassulaceae	<i>Aeonium rubrolineatum</i>	VU	
Podocarpaceae	<i>Podocarpus salignus</i>	VU	Willowleaf Podocarp	Betulaceae	<i>Betula chichibuensis</i>	VU		Crassulaceae	<i>Crassula rupestris</i> ssp. <i>mamierana</i>	VU	
Taxodiaceae	<i>Metasequoia glyptostroboides</i>	CR	Dawn Redwood	Bignoniaceae	<i>Tecomaria speciosa</i>	EN		Crassulaceae	<i>Crassula socialis</i>	VU	
Taxodiaceae	<i>Sequoiadendron giganteum</i>	VU	Giant Redwood	Boraginaceae	<i>Echium piniana</i>	VU		Crassulaceae	<i>Echeveria laui</i>	NT	
Zamiaceae	<i>Zamia fischeri</i>	VU		Boraginaceae	<i>Echium wilpeltii</i>	VU		Crassulaceae	<i>Kalanchoe fausti</i>	VU	
Zamiaceae	<i>Zamia furfuracea</i>	VU	Cardboard Palm	Boraginaceae	<i>Myosotis colensoi</i>	VU	Castle Hill Forget-me-not	Droseraceae	<i>Dionea muscipula</i>	VU	Venus Fly Trap
FLOWERING PLANTS: MONOCOTYLEDONS				Cactaceae	<i>Aniocarpus agavoides</i>	EN		Droseraceae	<i>Drosera adalae</i>	VU	
Agavaceae	<i>Agave chrysantha</i>	VU		Cactaceae	<i>Aniocarpus bravoanus</i>	EN		Droseraceae	<i>Drosera brevifolia</i>	VU	
Agavaceae	<i>Agave distans</i>	VU		Cactaceae	<i>Aniocarpus fissuratus</i>	VU		Droseraceae	<i>Drosera capillaris</i>	VU	
Agavaceae	<i>Agave hamisi</i>	VU		Cactaceae	<i>Aniocarpus retusus</i> ssp. <i>trigenus</i>	VU		Droseraceae	<i>Drosera regia</i>	VU	
Agavaceae	<i>Agave victoriae-reginae</i>	EN		Cactaceae	<i>Aniocarpus saphirostris</i>	VU		Droseraceae	<i>Drosera rotundifolia</i>	EN	
Alaceae	<i>Haworthia truncata</i>	VU		Cactaceae	<i>Astrophytum ornatum</i>	DD		Elaocarpaceae	<i>Crinodendron hookerianum</i>	LR/NT	Chile Lantern Tree
Bromeliaceae	<i>Puya coquimbensis</i>	VU		Cactaceae	<i>Artukum ottieri</i>	VU		Ericaceae	<i>Rhododendron dilatatum</i>	VU	
Dracaenaceae	<i>Dracaena draco</i>	VU	Canary Island Dragon Tree	Cactaceae	<i>Cephalocereus semilis</i>	VU		Eucryphiaceae	<i>Eucryphia glutinosa</i>	LR	
Gramineae	<i>Bromus interruptus</i>	EW		Cactaceae	<i>Copiapoa bridgesii</i>	VU		Euphorbiaceae	<i>Euphorbia decaryi</i>	NT	
Liliaceae	<i>Astelia chathamica</i>	EN		Cactaceae	<i>Copiapoa calderana</i>	VU		Euphorbiaceae	<i>Euphorbia melifera</i>	LR	
Orchidaceae	<i>Bulbophyllum rothschildianum</i>	EN		Cactaceae	<i>Copiapoa humilis</i>	VU		Flacourtiaceae	<i>Berberidopsis corallina</i>	EN	
Orchidaceae	<i>Calanthe rubens</i>	VU		Cactaceae	<i>Copiapoa humilis</i>	VU		Fumariaceae	<i>Dicentra spectabilis</i>	NT	Bleeding Hearts
Orchidaceae	<i>Cattleya trianae</i>	NT		Cactaceae	<i>Copiapoa hypogaea</i>	VU		Geraniaceae	<i>Pelargonium exhibitum</i>	NT	
Orchidaceae	<i>Coelogyne barbata</i>	NT		Cactaceae	<i>Copiapoa krauziana</i>	VU		Grossulariaceae	<i>Corokia macrocarpa</i>	LR/NT	
Orchidaceae	<i>Coelogyne cristata</i>	VU		Cactaceae	<i>Copiapoa laui</i>	VU		Gunneraceae	<i>Gunnera hamiltonii</i>	EN	
Orchidaceae	<i>Coelogyne falcata</i>	NT		Cactaceae	<i>Copiapoa longispina</i>	VU		Leguminosae	<i>Carmichaelia curta</i>	LR	
Orchidaceae	<i>Dracula vampira</i>	VU		Cactaceae	<i>Copiapoa tenuissima</i>	EN		Leguminosae	<i>Carmichaelia kirkii</i>	EN	
Orchidaceae	<i>Dracula wallisi</i>	VU		Cactaceae	<i>Coryphantha elephantidens</i>	VU		Leguminosae	<i>Chordospartium muniti</i>	CR	Weeping Tree Broom
Orchidaceae	<i>Dryadella hirtii</i>	VU		Cactaceae	<i>Coryphantha longicornis</i>	NT		Leguminosae	<i>Chordospartium stenosomii</i>	VU	Weeping Tree Broom
Orchidaceae	<i>Dryadella hirtii</i>	VU		Cactaceae	<i>Echinocactus grusonii</i>	CR	Golden Barrel	Leguminosae	<i>Cianthus puniceus</i>	EN	Glory Pea
Orchidaceae	<i>Encyclia cochleata</i>	VU		Cactaceae	<i>Escobaria chaffeyi</i>	VU		Leguminosae	<i>Notospartium glabrescens</i>	LR/NT	Southern Broom
Orchidaceae	<i>Encyclia mariae</i>	VU		Cactaceae	<i>Ferocactus peninsulae</i>	EN		Leguminosae	<i>Notospartium torulosum</i>	LR/NT	Southern Broom
Orchidaceae	<i>Epidendrum fimbriatum</i>	VU		Cactaceae	<i>Ferocactus santamariae</i>	EN		Leguminosae	<i>Strongylodon macrobotrys</i>	VU	Jade Vine
Orchidaceae	<i>Laelia gouldiana</i>	EN		Cactaceae	<i>Mammillaria engelensis</i>	VU		Magnoliaceae	<i>Michelia chapensis</i>	LR	
Orchidaceae	<i>Masdevallia chaetostoma</i>	VU		Cactaceae	<i>Mammillaria angelensis</i>	VU		Oleaceae	<i>Abelophyllum distichum</i>	EN	
Orchidaceae	<i>Masdevallia dynastes</i>	VU		Cactaceae	<i>Mammillaria bacasana</i>	VU		Oleaceae	<i>Syringa josikaci</i>	VU	
Orchidaceae	<i>Masdevallia instar</i>	VU		Cactaceae	<i>Mammillaria bocanensis</i>	VU		Pittosporaceae	<i>Pittosporum obcordatum</i>	LR/NT	
Orchidaceae	<i>Masdevallia menator</i>	EW		Cactaceae	<i>Mammillaria bombycina</i>	VU		Polygonaceae	<i>Eriogonum cinereum</i>	VU	
Orchidaceae	<i>Masdevallia ova-avis</i>	VU		Cactaceae	<i>Mammillaria bulardiana</i>	VU		Polygonaceae	<i>Eriogonum grande</i> var. <i>rubescens</i>	VU	
Orchidaceae	<i>Masdevallia pinguiculis</i>	EN		Cactaceae	<i>Mammillaria cerralboi</i>	VU		Proteaceae	<i>Protea asua</i>	VU	
Orchidaceae	<i>Masdevallia rolfiana</i>	VU		Cactaceae	<i>Mammillaria cerralboi</i>	VU		Proteaceae	<i>Protea roupelliae</i> var. <i>hamiltonii</i>	EN	
Orchidaceae	<i>Masdevallia sanctae-teresae</i>	LR		Cactaceae	<i>Mammillaria duarum</i>	VU		Proteaceae	<i>Protea venusta</i>	VU	
Orchidaceae	<i>Masdevallia stenorhynchus</i>	VU		Cactaceae	<i>Mammillaria hahniana</i>	VU		Rosaceae	<i>Cotoneaster simonsii</i>	DD	
Orchidaceae	<i>Masdevallia tovarensis</i>	DD		Cactaceae	<i>Mammillaria hahniana</i>	VU		Rosaceae	<i>Lyonothamnus floribundus</i> ssp. <i>asplenifolius</i>	VU	Santa Cruz Island Ironwood
Orchidaceae	<i>Paphiopedilum esui</i>	EN		Cactaceae	<i>Mammillaria hererae</i>	VU		Rutaceae	<i>Phellodendron armurense</i>	EN	
Orchidaceae	<i>Paphiopedilum niveum</i>	NT		Cactaceae	<i>Mammillaria kraehenbuehli</i>	VU		Sarracenaceae	<i>Sarracenia alata</i>	VU	
Orchidaceae	<i>Paphiopedilum philippinense</i>	NT		Cactaceae	<i>Mammillaria magnifica</i>	VU		Sarracenaceae	<i>Sarracenia flava</i>	VU	
Orchidaceae	<i>Paphiopedilum rothschildianum</i>	EN		Cactaceae	<i>Mammillaria maritima</i>	VU		Sarracenaceae	<i>Sarracenia leucophylla</i>	VU	
Orchidaceae	<i>Paphiopedilum wardii</i>	VU		Cactaceae	<i>Mammillaria matudae</i>	VU		Sarracenaceae	<i>Sarracenia oreophylla</i>	VU	
Orchidaceae	<i>Pleurothallis cartilaginea</i>	DD		Cactaceae	<i>Mammillaria mercaderis</i> ssp. <i>patonii</i>	VU		Sarracenaceae	<i>Sarracenia rubra</i>	VU	
Orchidaceae	<i>Pleurothallis phyllonotus</i>	EN		Cactaceae	<i>Mammillaria meyrani</i>	VU		Sarracenaceae	<i>Sarracenia rubra</i> ssp. <i>alabamensis</i>	VU	
Orchidaceae	<i>Pleurothallis scoparium</i>	VU		Cactaceae	<i>Mammillaria microchela</i>	VU		Scrophulariaceae	<i>Hebe armstrongii</i>	VU	
Orchidaceae	<i>Pleurothallis volcanica</i>	VU		Cactaceae	<i>Mammillaria microchela</i>	VU		Scrophulariaceae	<i>Hebe cupressoides</i>	VU	
Orchidaceae	<i>Porroglossum anethystrinum</i>	VU		Cactaceae	<i>Mammillaria mollioriana</i>	VU		Sterculiaceae	<i>Trochetopsis ebenus</i>	CR	St. Helena Ebony
Orchidaceae	<i>Porroglossum dalstroemii</i>	LR		Cactaceae	<i>Mammillaria oteroi</i>	VU					
Orchidaceae	<i>Restrepopsis pandurata</i>	LR		Cactaceae	<i>Mammillaria napina</i>	VU					
Orchidaceae	<i>Rosaglossum insleyi</i>	VU		Cactaceae	<i>Mammillaria pantheri</i>	VU					
Orchidaceae	<i>Scaphosepalum beludsum</i>	LR		Cactaceae	<i>Mammillaria parkinsonii</i>	VU					
Orchidaceae	<i>Scaphosepalum microdactylum</i>	LR		Cactaceae	<i>Mammillaria peninsularis</i>	VU					
Orchidaceae	<i>Sobralia macrantha</i>	VU		Cactaceae	<i>Mammillaria peninsularis</i>	VU					
Orchidaceae	<i>Stanhopea fignra</i>	VU		Cactaceae	<i>Mammillaria pilcayensis</i>	VU					
Orchidaceae	<i>Stelis hirtzii</i>	VU		Cactaceae	<i>Mammillaria pilspina</i>	VU					
Orchidaceae	<i>Vanda coerulea</i>	VU		Cactaceae	<i>Mammillaria pondii</i>	VU					
Palmae	<i>Beccarophoenix madagascariensis</i>	CR		Cactaceae	<i>Mammillaria pringlei</i>	VU					
Palmae	<i>Chamaedorea adscens</i>	VU		Cactaceae	<i>Mammillaria pringlei</i>	VU					
Palmae	<i>Chamaedorea radialis</i>	VU		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Chamaedorea stolonifera</i>	VU		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Chambeyronia macrocarpa</i>	LR		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Dypsis decaryi</i>	VU		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Howea bairdiana</i>	VU	Sentry Palm	Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Howea forsteriana</i>	VU	Kentia Palm	Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Johannestejmannia magnifica</i>	EN		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Jubaea chilensis</i>	VU		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Lantana lontaroides</i>	EN		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Ptychosperma gracile</i>	EN		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Ravensia hildebrandtii</i>	EN		Cactaceae	<i>Mammillaria purpurata</i>	EN					
Palmae	<i>Ravensia rivularis</i>	VU		Cactaceae	<i>Mammillaria purpurata</i>	EN					

CODES
 IUCN Red List
 EW Extinct in the wild
 CR Critically endangered
 EN Endangered
 VU Vulnerable
 NT Near threatened
 DD Data deficient
 LR Lower risk

The vast majority of plant taxa listed in the 1997 IUCN Red List of Threatened Plants have not yet been evaluated against the revised Red List criteria. We are therefore still using the 1997 as our reference.

Livestock: General Holdings – Mammals

		STOCK 31/12/04			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/05			CITES
		M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	
MARSUPIALIA																							
Red-necked Wallaby	<i>Macropus rufogriseus</i>	0	11	0										0	1	0				0	10	0	
Western Grey Kangaroo	<i>Macropus fuliginosus</i>	5	5	0				0	0	2				1	1	0	0	1	0	4	3	2	
CHIROPTERA																							
Rodrigues Fruit Bat	<i>Pteropus rodricensis</i>	35	28	0				10	0	6	0	0	1	2	3	0	22	0	0	21	25	5	II
Seba's Short-tailed Bat	<i>Carollia perspicillata</i>	0	0	251				0	0	29				0	0	16				0	0	264	
SCANDENTIA																							
Northern Tree Shrew	<i>Tupaia belangeri</i>	0	0	0	1	0	0													1	0	0	
PRIMATES																							
Alouatta Gentle Lemur	<i>Haplorhina griseus alouattinus</i>	1	1	0																1	1	0	
Ring-tailed Lemur	<i>Lemur catta</i>	7	12	0				5	4	0	0	1	0				0	3	0	12	12	0	
Black and White Ruffed Lemur	<i>Varecia variegata variegata</i>	5	3	0				0	1	0							0	1	0	5	3	0	
Red Ruffed Lemur	<i>Varecia variegata rubra</i>	2	4	0				0	1	0	0	1	0				1	1	0	1	3	0	
Geoffroy's Marmoset	<i>Callithrix geoffroyi</i>	2	1	0				1	1	2										3	2	2	
Pied Tamarin	<i>Saguinus bicolor</i>	0	2	0																0	2	0	
Cotton-top Tamarin	<i>Saguinus oedipus</i>	1	1	0				1	1	0	1	1	0				1	1	0	0	0	0	
Buffy-headed Capuchin	<i>Cebus xanthosternus</i>	3	1	0				1	0	0										4	1	0	II
Colombian Black Spider Monkey	<i>Ateles fusciceps robustus (A. geoffroyi rufiventris)</i>	2	6	0				1	0	0	1	0	0							2	6	0	II
Lion-tailed Macaque	<i>Macaca silenus</i>	3	7	0				1	1	1										4	8	1	
Sulawesi Crested Macaque	<i>Macaca nigra</i>	5	15	0				2	2	0	1	0	0							6	17	0	II
Campbell's Monkey	<i>Cercopithecus campbelli</i>	0	2	0																0	2	0	II
Mandrill	<i>Mandrillus sphinx</i>	3	3	0				1	0	0										4	3	0	
Chimpanzee	<i>Pan troglodytes</i>	7	22	0				1	1	0										8	23	0	
Bornean Orang-utan	<i>Pongo pygmaeus</i>	0	4	0													0	1	0	0	3	0	
Sumatran Orang-utan	<i>Pongo abelii</i>	3	4	0																3	4	0	
RODENTIA																							
Prairie Marmot	<i>Cynomys ludovicianus</i>	1	1	0																1	1	0	
Turkish Spiny Mouse	<i>Acomys cilicicus</i>	0	0	102				0	0	555	0	0	99	0	0	352	0	0	10	0	0	196	
Capybara	<i>Hydrochaeris hydrochaeris</i>	3	2	0													1	0	0	2	2	0	
Azara's Agouti	<i>Dasyprocta azarae</i>	2	0	0													1	0	0	1	0	0	
Harvest Mouse	<i>Micromys minutus</i>	65	82	12				0	0	15	0	0	4	23	34	2	36	28	2	6	20	19	
European Water Vole	<i>Arvicola terrestris</i>	0	0	0	16	15	0	10	7	13				0	1	0				26	21	13	
Eurasian Giant Pouched Rat	<i>Cricetomys erini</i>	0	0	0	2	0	0													2	0	0	
African Dormouse	<i>Graphurus murinus</i>	0	0	0	0	0	14	0	0	8				0	0	1				0	0	21	
CARNIVORA																							
Maned Wolf	<i>Chrysocyon brachyurus</i>	1	1	0																1	1	0	II
Bush Dog	<i>Speothos venaticus</i>	3	2	0				1	2	0										4	4	0	
Red Panda	<i>Ailuurus fulgens fulgens</i>	0	2	0	1	0	0										0	1	0	1	1	0	
Spectacled Bear	<i>Tremarctos ornatus</i>	2	0	0	0	1	0										1	0	0	1	1	0	
Coati	<i>Nasua nasua</i>	10	16	6				5	8	0	0	0	6	1	1	0	9	6	0	5	17	0	
Oriental Small-clawed Otter	<i>Amblyonyx cinereus</i>	4	8	0										1	0	0	3	0	0	0	8	0	II
Slender-tailed Meerkat	<i>Sunivaca suricata</i>	0	0	8										0	0	2				0	0	6	
Banded Mongoose	<i>Mungos mungo</i>				0	0	5													0	0	5	
Asiatic Lion	<i>Panthera leo persica</i>	1	1	0										0	1	0				1	0	0	
Amur Tiger	<i>Panthera tigris altaica</i>	1	0	0																1	0	0	
Jaguar	<i>Panthera onca</i>	3	2	0				1	1	0	1	1	0							3	2	0	
PINNIPEDIA																							
California Sealion	<i>Zalophus californianus</i>	1	3	0				1	0	0										2	3	0	
PROBOSCIDEA																							
Asiatic Elephant	<i>Elephas maximus</i>	3	6	0													1	0	0	2	6	0	
PERISSODACTYLA																							
Przewalski's Horse	<i>Equus przewalskii</i>	0	3	0	1	0	0													1	3	0	
Grevy's Zebra	<i>Equus grevyi</i>	6	0	0																6	0	0	
Persian Onager	<i>Equus hemionus onager</i>	1	3	0	0	2	0							0	1	0				1	4	0	II
South American Tapir	<i>Tapirus terrestris</i>	1	2	0				0	0	1	0	0	1							1	2	0	II
Eastern Black Rhinoceros	<i>Diceros bicornis michaeli</i>	3	4	0	3	1	0										3	0	0	3	5	0	
ARTIODACTYLA																							
Babirusa	<i>Babirusa babirusa</i>	1	1	0	0	1	0													1	2	0	
Red River Hog	<i>Potamochoerus porcus pictus</i>	2	1	0				1	2	0							1	0	0	2	3	0	
Warthog	<i>Phacochoerus africanus</i>	0	0	0	1	2	0							1	0	0	0	1	0	0	1	0	
Guinea Pig	<i>Lama guanicoe</i>	4	10	0																4	10	0	II
Vicuna	<i>Vicugna vicugna</i>	0	0	0	1	2	0	0	0	2										1	2	2	
Bactrian Camel	<i>Camelus bactrianus</i>	1	3	0													1	0	0	0	3	0	
Chilean Pudu	<i>Pudu pudu</i>	1	1	0				0	1	0	0	1	0							1	1	0	
Philippine Spotted Deer	<i>Cervus alfredi</i>	3	3	0				3	0	2	2	0	0							4	3	2	
Burmese Brown-antlered Deer	<i>Cervus eldi thamin</i>	2	10	0				3	3	0	2	3	0	0	2	0				3	8	0	
Père David's Deer	<i>Elaphurus davidianus</i>	1	0	7										1	0	2				0	0	5	
Giraffe	<i>Giraffa camelopardalis</i>	2	4	0				2	0	0	1	0	0				1	0	0	2	4	0	
Okapi	<i>Okapia johnstoni</i>	1	0	0	1	0	0													2	0	0	
Lowland Anoa	<i>Bubalus depressicornis</i>	2	1	0																2	1	0	
Congo Buffalo	<i>Syncerus caffer nanus</i>	3	2	0				0	1	0				2	0	0				1	3	0	
Eastern Bongo	<i>Tragelaphus eurycerus isaaci</i>	2	3	0				2	1	0	0	1	0	0	1	0				4	2	0	
West African Sitatunga	<i>Tragelaphus spekei gratus</i>	4	8	0	1	0	0	3	1	1	1	1	1	1	0	0				6	8	0	
Kafue Flats Red Lechwe	<i>Kobus lecheri kafuensis</i>	0	9	0																0	9	0	II
Scimitar-horned Oryx	<i>Oryx dammah</i>	0	10	0	0	8	0							0	9	0				0	9	0	
Gemsbok	<i>Oryx gazella gazella</i>	1	7	0				2	0	0	1	0	0	0	2	0				2	5	0	
Blackbuck	<i>Antelope cervicapra</i>	1	17	0				8	2	3	2	0	3	2	3	0				5	16	0	
SUB-TOTALS		226	360	386	28	32	19	66	41	640	13	10	115	35	60	375	82	44	12	190	319	543	CITES I 26
TOTAL		968			79			747			138			470			138			1052			CITES II 11

Livestock: General Holdings – Birds

		STOCK 31/12/04			RECEIVED			BORN/WCH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/05			CITES
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
STRUTHIONIFORMES																							
Ostrich	<i>Struthio camelus</i>	0	2	0																0	2	0	I
RHEIFORMES																							
Common Rhea	<i>Rhea americana</i>	1	2	0			1	0	9	0	0	3	0	0	1					2	2	5	II
CASUARIIFORMES																							
Southern Cassowary	<i>Casuarius casuarius</i>	0	1	0	1	0	0													1	1	0	
Emu	<i>Dromaius novaehollandiae</i>	1	1	0																1	1	0	
SPHENISCIFORMES																							
Humboldt's Penguin	<i>Spheniscus humboldti</i>	11	15	14			3	1	4	0	0	4	1	1	0					13	15	14	I
PELECANIFORMES																							
Dalmatian Pelican	<i>Pelecanus crispus</i>	5	3	0									0	1	0					5	2	0	I
CICONIIFORMES																							
Little Egret	<i>Egretta garzetta</i>	1	2	1									0	1	0					1	1	1	
White Stork	<i>Ciconia ciconia</i>	2	2	0																2	2	0	
Black Stork	<i>Ciconia nigra</i>	1	1	0																1	1	0	II
Wading Ibis	<i>Geronticus eremita</i>	8	7	7			0	0	6	0	0	4	1	0	1	0	0	2		7	7	6	I
Scarlet Ibis	<i>Eudocimus ruber</i>	2	2	0									0	1	0					2	1	0	II
Eurasian Spoonbill	<i>Platalea leucorodia</i>	3	4	2									2	0	0					1	4	2	II
Chilean Flamingo	<i>Phoenicopterus chilensis</i>	17	20	35			0	0	10	0	0	3	0	1	2					17	19	40	II
Caribbean Flamingo	<i>Phoenicopterus ruber ruber</i>	18	12	40			0	0	7				0	1	0					18	11	47	II
ANSERIFORMES																							
Black-billed Whistling Duck	<i>Dendrocygna arborea</i>	6	6	7			0	0	12				1	0	1	2	1	6		3	5	12	II
Black-necked Swan	<i>Cygnus melanocoryphus</i>	1	1	0			0	1	0											1	2	0	
Lesser White-fronted Goose	<i>Anser erythropus</i>	0	1	2																0	1	2	
Ross's Snow Goose	<i>Anser rossii</i>	3	1	2			0	0	2	0	0	1								3	1	3	
Red-breasted Goose	<i>Branta ruficollis</i>	4	4	3																4	4	3	II
Hawaiian Goose	<i>Branta sandvicensis</i>	1	1	0			3	1	0											4	2	0	I
Common Shelduck	<i>Tadorna tadorna</i>	1	0	0																1	0	0	
Baikal Teal	<i>Anas formosa</i>	2	2	0																2	2	0	II
Falcated Teal	<i>Anas falcata</i>	4	3	0									0	1	0					4	2	0	
Chilean Pintail	<i>Anas georgica spicicauda</i>	2	0	0																2	0	0	
Laysan Teal	<i>Anas laysanensis</i>	0	2	0	3	0	0	0	2	0	0	1								3	2	1	I
Garganey	<i>Anas querquedula</i>	2	3	0																2	3	0	
Marbled Teal	<i>Marmaronetta angustirostris</i>	3	3	3			0	0	19	0	0	1			1	0	0	7		3	3	13	
Common Eider	<i>Somateria mollissima</i>	3	2	9			0	0	1				0	1	1					3	1	9	
Baird's Pochard	<i>Aythya baii</i>	3	3	1			0	0	5				0	0	2					3	3	4	
Ferruginous Duck	<i>Aythya nyroca</i>	3	3	2			0	0	25	0	0	3	0	0	1					3	3	23	
Tufted Duck	<i>Aythya fulgula</i>	4	1	0																4	1	0	
Red-crested Pochard	<i>Netta rufina</i>	8	5	0			0	0	9	0	0	6	0	0	1	3	2	0		5	3	2	
Mandarin Duck	<i>Aix galericulata</i>	0	0	31			0	0	2				0	0	1					0	0	32	
Smew	<i>Mergus albellus</i>	3	3	0			0	0	2	0	0	2	0	1	0					3	2	0	
Hooded Merganser	<i>Mergus cucullatus</i>	1	3	15			0	0	21	0	0	6				0	0	11		1	3	19	
White-headed Duck	<i>Oxyura leucocephala</i>	6	4	1			0	0	23	0	0	15	0	2	2	0	0	6		6	2	1	II
FALCONIFORMES																							
American Black Vulture	<i>Coragyps atratus</i>	0	1	0																0	1	0	II
Andean Condor	<i>Vultur gryphus</i>	1	1	0																1	1	0	I
Griffon Vulture	<i>Gyps fulvus</i>	0	1	0																0	1	0	II
European Black Vulture	<i>Aegypius monachus</i>	1	1	0																1	1	0	II
Mauritius Kestrel	<i>Falco punctatus</i>	1	1	0									1	0	0					0	1	0	I
GALLIFORMES																							
Red-billed Curassow	<i>Cazax blumenbachi</i>	1	1	1			0	0	2	0	0	1								1	1	2	I
Red-legged Partridge	<i>Alectoris rufa</i>	1	0	0									1	0	0					0	0	0	
Rouffou Partridge	<i>Rallulus rouffou</i>	6	3	0	0	5	0	1	2	8	0	0	7	2	3	0				5	7	1	
Satyir Tragopan	<i>Tragopan satyra</i>	0	2	0	1	0	0						0	1	0	0	1	0		1	0	0	
Himalayan Monal	<i>Lophophorus impeyanus</i>	1	1	0																1	1	0	I
Golden Pheasant	<i>Chrysolophus pictus</i>	1	4	0	1	0	0						1	2	0					1	2	0	
Lady Amherst's Pheasant	<i>Chrysolophus amherstiae</i>	2	2	0			0	1	0				1	0	0	1	1	0		0	2	0	
Pallawan Peacock Pheasant	<i>Polyplectron emphanum</i>	2	2	0			0	0	2	0	0	1								2	2	1	I
Edwards' Pheasant	<i>Lophura edwardsi</i>	1	0	0																1	0	0	I
Vietnamese Pheasant	<i>Lophura hatinhensis</i>	1	1	0																1	1	0	
Malayan Crestless Fireback	<i>Lophura erythrophthalma</i>	1	1	0			0	0	1	0	0	1								1	1	0	
Great Argus Pheasant	<i>Argusianus argus</i>	0	1	0																0	1	0	II
Common Peafowl	<i>Pavo cristatus</i>	3	2	1									1	0	1	0	2	0		2	0	0	
Green Peafowl	<i>Pavo muticus</i>	1	0	0																1	0	0	II
Congo Peafowl	<i>Atrypa congensis</i>	3	3	0	1	0	0									1	1	0		3	2	0	
GRUIFORMES																							
Red-crowned Crane	<i>Grus japonensis</i>	1	1	0			0	0	2				0	0	1					1	1	1	I
White-rumped Crane	<i>Grus vipio</i>	1	1	0	1	0	0						1	0	0					1	1	0	I
Wattled Crane	<i>Grus carunculatus</i>	1	1	0																1	1	0	II
Blue Crane	<i>Grus paradisea</i>	1	1	0																1	1	0	II
West African Crowned Crane	<i>Balearica pavonina pavonina</i>	3	2	0			0	0	3	0	0	2				1	0	0		2	2	1	II
CHARADRIIFORMES																							
Stone Curlew	<i>Burhinus oedicnemus</i>	1	1	0																1	1	0	
Crowned Plover	<i>Vanelus coronatus</i>	1	1	0																1	1	0	
Northern Lapwing	<i>Vanelus vanellus</i>	1	0	0			0	0															

Livestock: General Holdings – Birds

		STOCK 31/12/04			RECEIVED			BORN/NCH			D.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/05			CITES
		M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T	
PSITTACIFORMES																							
Red and Blue Lory	<i>Eos histrio</i>	1	1	0																1	1	0	I
Blue-streaked Lory	<i>Eos reticulata</i>	1	0	0																1	0	0	II
Yellow-backed Chattering Lory	<i>Lorius parrulus flavopalliat</i>	3	2	0																2	2	0	II
Stella's Lorikeet	<i>Charmosyna pappi</i>	3	1	0				0	0	3	0	0	2	1	0	1	1	0	0	2	0	0	II
Mount Apo Lorikeet	<i>Trichoglossus johnstoniae</i>	4	1	0										0	1	0				4	0	0	II
Palm Cockatoo	<i>Probosciger aterrimus</i>	1	0	0																1	0	0	I
Caraby's Black Cockatoo	<i>Calyptorhynchus latirostris</i>	0	1	0																0	1	0	II
Blue-eyed Cockatoo	<i>Cacatua ophthalmica</i>	3	2	1										1	0	0				2	2	1	II
Red-vented Cockatoo	<i>Cacatua haematuropygia</i>	5	4	0										0	3	0				5	1	0	I
Kea	<i>Nestor notabilis</i>	1	1	0										1	1	0				0	0	0	II
Greater Vasa Parrot	<i>Coracopsis vasa</i>	2	1	2																1	1	0	II
Scarlet-chested Parrot	<i>Neophema splendida</i>	0	0	0	3	2	0							3	1	0				0	1	0	II
Princess Parrot	<i>Polytelis alexandrae</i>	4	2	0																4	2	0	II
Derbyan Parakeet	<i>Psittacula derbyana</i>	6	4	0				0	0	2										6	4	2	II
Black-cheeked Lovebird	<i>Agapornis nigrigensis</i>	0	1	0																0	1	0	II
Hyacinthine Macaw	<i>Anodorhynchus hyacinthinus</i>	2	2	0																2	2	0	I
Blue and Yellow Macaw	<i>Ara ararauna</i>	1	1	0																1	1	0	II
Blue-throated Macaw	<i>Ara glaucogalari</i>	3	3	0																3	3	0	I
Blue-winged Macaw	<i>Prioniturus maracana</i>	1	2	0				0	0	1				0	1	0				1	1	1	I
Golden-capped Conure	<i>Aratinga auricapilla</i>	2	1	0																2	1	0	II
Golden Conure	<i>Guaruba guarouba</i>	3	3	0																3	3	0	I
Grey-breasted Conure	<i>Pyrrhura leucotis grisepectus</i>	0	0	0	2	2	0													2	2	0	II
Blue-throated Conure	<i>Pyrrhura cruentata</i>	4	2	0										0	1	0				4	1	0	I
Ecuadorian Amazon Parrot	<i>Amazona autumnalis lilacina</i>	9	7	0	1	0	1													10	7	1	II
Green-cheeked Amazon	<i>Amazona viridigenalis</i>	1	1	0																1	1	0	I
Red-tailed Amazon	<i>Amazona brasiliensis</i>	2	3	0																2	3	0	I
St Lucia Amazon	<i>Amazona versicolor</i>	1	0	0	1	1	0													2	1	0	I
CUCULIFORMES																							
Red-crested Turaco	<i>Tauraco erythrolophus</i>	1	1	0																1	1	0	II
Fischer's Turaco	<i>Tauraco fischeri</i>	2	2	0				1	2	1	0	0	1							2	4	0	II
Schalow's Turaco	<i>Tauraco schalowi</i>	2	2	0				1	0	4	0	0	2	1	1	1				2	1	1	II
White-cheeked Turaco	<i>Tauraco leucotis</i>	1	1	0																1	1	0	II
Violet Plantain Eater	<i>Muscophaga violacea</i>	1	1	0	0	1	0													0	1	0	I
STRIGIFORMES																							
Barn Owl	<i>Tyto alba</i>	1	1	0																1	1	0	II
White-faced Scops Owl	<i>Otus leucotis</i>	2	2	0	1	0	0							1	1	0				2	1	0	II
Milky Eagle Owl	<i>Bubo lacteus</i>	1	0	0																1	0	0	II
Snowy Owl	<i>Nyctea scandiaca</i>	1	0	0																1	0	0	II
Vermiculated Fishing Owl	<i>Scotopelia bouvieri</i>	0	1	0																0	1	0	II
Great Grey Owl	<i>Strix nebulosa lapponica</i>	3	2	0				0	1	2	0	0	1							2	2	1	II
Spectacled Owl	<i>Pulsatrix perspicillata</i>	3	3	0				0	0	3	0	0	1							3	3	2	II
CAPRIMULGIFORMES																							
Tawny Frogmouth	<i>Podargus strigoides</i>	3	3	0				0	0	3	0	0	1							3	3	2	I
CORACIFORMES																							
Blue-winged Kookaburra	<i>Dacelo leachi</i>	1	3	0				1	1	0										1	3	0	I
Kookaburra	<i>Dacelo novaeguineae</i>	1	1	0																1	1	0	I
White-collared Kingfisher	<i>Halcyon chloris</i>	5	8	0				0	0	15	0	0	3	0	1	5	3	4	1	2	3	6	I
Lilac-breasted Roller	<i>Coracias caudata</i>	1	1	0				0	0	8	0	0	3							1	1	5	I
Great Hornbill	<i>Buceros bicornis</i>	2	2	0																1	1	0	I
Rhinoceros Hornbill	<i>Buceros rhinoceros</i>	1	1	0																1	1	0	II
Wrinkled Hornbill	<i>Aceras cornigatus</i>	1	1	0										1	0	0				0	1	0	II
Mindanao White-billed Hornbill	<i>Aceras leucocephalus</i>	1	1	0																1	1	0	II
Tarctic Hornbill	<i>Penelopides panina</i>	1	1	0																1	1	0	II
PASSERIFORMES																							
Red-eared Bulbul	<i>Pycnonotus jocosus</i>	0	0	6																0	0	6	I
White-rumped Shama	<i>Copsychus malabaricus</i>	4	2	0				2	3	10	0	0	8	2	0	2	2	2	0	2	3	0	I
Yellow-throated Laughing Thrush	<i>Garrulus galbanus</i>	2	0	0										1	0	0				1	0	0	I
White Crested Laughing Thrush	<i>Garrulus l. leucolophus</i>	0	1	0																0	1	0	I
Red-tailed Laughing Thrush	<i>Garrulus milnei</i>	2	1	0										1	0	0	1	0	0	0	1	0	I
Chestnut Thrush	<i>Turdus rubrocanus</i>	0	0	0	1	1	0													1	1	0	I
Orange-headed Thrush	<i>Zosterops citrina</i>	0	0	0	1	0	0													1	0	0	I
Chestnut Capped Thrush	<i>Zosterops interpres</i>	1	1	0										1	0	0				0	1	0	I
Chestnut-backed Thrush	<i>Zosterops dohrtyi</i>	0	0	0	1	1	0													1	1	0	I
Chestnut-crowned Laughing Thrush	<i>Garrulus erythrocephalus</i>	0	0	0	0	0	1													0	0	1	I
Ornel Shan Loicichia	<i>Loicichia orniensis</i>	3	2	0										2	0	0				1	2	0	II
White-naped Yuhina	<i>Yuhina bakeri</i>	0	0	0	2	2	0													2	2	0	I
Kiuyu White-eye	<i>Zosterops kikuyuensis</i>	0	0	0	5	5	0													5	5	0	I
Red-billed Leiothrix	<i>Leiothrix lutea</i>	10	4	19				0	0	25	0	0	13	2	0	0	2	2	5	6	2	26	II
Pope Cardinal	<i>Piranga dominicana</i>	1	1	0																1	1	0	I
Monterrat Oriole	<i>Icterus oberi</i>	1	1	0				0	0	1	0	0	1	0	1	0				1	0	0	I
Mexican House Finch	<i>Carpodacus mexicanus</i>	2	0	0																2	0	0	I
Red-cheeked Cordon-bleu	<i>Uruba bengalensis</i>	2	0	0										1	0	0				1	0	0	I
Blue-headed Parrot Finch	<i>Erythrura trichroa</i>	0	0	1										0	0	1				0	0	0	I
Diamond Sparrow	<i>Stagonopleura guttata</i>	1	0	0																1	0	0	I
Java Sparrow	<i>Padda oryzyora</i>	0	0	47				0	0	48				0	0	8	0	0	40	0	0	47	II
Timor Zebra Finch	<i>Poephila guttata guttata</i>	0	0	0	4	4	0													4	4	0	I
White-headed Buffalo Weaver	<i>Dinemilla dimella</i>	0	0	1																0	0	1	I
Taveta Golden Weaver	<i>Plo</i>																						

Livestock: General Holdings – Reptiles

		STOCK			RECEIVED			BORN/N'CH			D.N.S.			DEATHS			DISPOSALS			STOCK			CITES
		M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	M	F	Y/7	
CHelonIA																							
Asian Box Turtle	<i>Cuora amboinensis</i>	2	1	0																			II
Zhou's Box Turtle	<i>Cuora zhoui</i>				0	0	2																II
Chinese Three-striped Box Turtle	<i>Cuora trifasciata</i>				1	3	0																II
Spiny Turtle	<i>Heosemys spinosa</i>	2	4	0																			II
Bald's Eyed Turtle	<i>Sacalia baleri</i>	0	0	0	0	1	6																II
Four-eyed Turtle	<i>Sacalia quadriocellata</i>	0	0	0	1	1	2																II
Black Marsh Turtle	<i>Siebenrockiella crassicolis</i>	1	3	0																			II
Annam Leaf Turtle	<i>Annamemys annamensis</i>	0	0	2	2	1	0																II
McCord's Snake-necked Turtle	<i>Chelodina mccordi</i>	0	0	4																			II
Egyptian Tortoise	<i>Testudo kleinmanni</i>	3	6	0	1	0	2	0	0	7			0	1	0	0	1	0					I
Radiated Tortoise	<i>Geochelone radiata</i>	2	1	0																			I
Yellow-footed Tortoise	<i>Geochelone denticulata</i>	1	1	0				0	0	1													II
Star Tortoise	<i>Geochelone elegans</i>	2	3	0										1	1	0							II
Galapagos Tortoise	<i>Geochelone nigra</i>	0	0	0	1	3	0																I
Pancake Tortoise	<i>Malacochersus tornieri</i>	2	2	0																			II
CROCODYLIA																							
West African Dwarf Crocodile	<i>Osteoleaemus tetraspis</i>	1	3	0																			I
RHYNCHOCEPHALIA																							
Tuatara	<i>Sphenodon punctatus</i>	1	5	0																			I
SAURIA																							
Sand Lizard	<i>Lacerta agilis</i>	0	0	35	0	0	19																
Standing's Day Gecko	<i>Phelsuma standingi</i>	1	1	2																			II
Yellow-headed Day Gecko	<i>Phelsuma klemmeri</i>	2	2	3				0	0	4	0	0	2										II
Tokay Gecko	<i>Gekko gekko</i>	0	3	4										0	1	2	0	2	2				II
Common Iguana	<i>Iguana iguana</i>	1	0	0										1	0	0							II
Rhinoceros Iguana	<i>Cyclura cornuta</i>	3	3	0																			I
West Indian Iguana	<i>Iguana delicatissima</i>	0	0	0	1	1	0																I
Plumed Basilisk	<i>Basiliscus plumifrons</i>	0	1	0																			II
Egyptian Spiny-tailed Lizard	<i>Uromastyx aegyptius</i>	1	3	0										0	1	0	0	2	0				II
Sudanese Uromastyx	<i>Uromastyx dispar</i>	0	0	0	2	4	0																II
Philippine Sailfin Lizard	<i>Hydrosaurus pustulatus</i>	1	2	1				0	0	1	0	0	1										II
Shingleback Skink	<i>Tiliqua rugosus</i>	1	1	0										1	0	0							II
Prehensile-tailed Skink	<i>Conscia zebata</i>	1	1	1				0	0	1													II
Black and White Tegu	<i>Tupinambis teguixin</i>	1	2	0																			II
Green Tree Monitor	<i>Varanus prasinus</i>	0	0	1																			II
Mangrove Monitor	<i>Varanus indicus</i>	2	1	0										1	0	0							II
Salvador Monitor	<i>Varanus salvadori</i>	1	1	0																			II
Spiny-tailed Monitor	<i>Varanus acanthopus</i>	5	6	3										0	1	0							II
Lace Monitor	<i>Varanus varius</i>	2	0	0																			II
Timor Monitor	<i>Varanus timorensis</i>	1	1	0										0	1	0							II
Komodo Dragon	<i>Varanus komodoensis</i>	0	2	0																			I
Veiled Chameleon	<i>Chamaeleo calyptratus</i>	5	4	13	2	0	6							0	0	1	4	2	18				II
Banded Lizard	<i>Heloderma horridum</i>	2	1	1	1	1	0																II
Gila Monster	<i>Heloderma suspectum</i>	2	1	2																			II
SERPENTES																							
Green Tree Python	<i>Morelia viridis</i>	2	2	0										0	1	0							II
Cuban Boa	<i>Epicrates anguifer</i>	0	1	0																			II
Jamaican Boa	<i>Epicrates subflavus</i>	1	3	0	2	1	0							1	3	0							I
Madagascan Tree Boa	<i>Sarcinia madagascariensis</i>	2	2	0																			I
Emerald Tree Boa	<i>Corallus caninus</i>	0	0	2																			II
Boa Constrictor	<i>Boa constrictor</i>	2	0	0																			II
Green Anaconda	<i>Eunectes murinus</i>	1	1	0																			II
Red-tailed Racer	<i>Gonyosoma oxycephala</i>	5	5	1				2	1	2							6	3	3				II
Tiger Ratsnake	<i>Spilotes pullatus</i>	0	0	0	0	0	2																II
Indian Cobra	<i>Naja kaouthia</i>	1	0	0										1	0	0							II
Snouted Cobra	<i>Naja annulifera</i>				1	1	0																II
East African Green Mamba	<i>Dendroaspis augusticeps</i>	1	1	0																			II
Gaboon Viper	<i>Bitis gabonica rhinoceros</i>	1	2	0													1	0	0				II
Aruba Island Rattlesnake	<i>Crotalus unicolor</i>	0	1	0																			II
SUB-TOTALS		65	83	75	15	17	39	2	1	16	0	0	3	6	10	3	16	14	45	60	77	79	CITES I 9
TOTAL		223			71			19			3			19			75			216			CITES II 33
TOTAL 42																							

Number of specimens at year end – 216 Number of species at year end – 50 Number of species held during year – 54

EDUCATION

Not included in species/ specimen totals

Cornsnake	<i>Elaphe guttata</i>	0	1	1																			0	1	0								
Greek Tortoise	<i>Testudo graeca graeca</i>	1	0	0																													
SUB-TOTALS		1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
TOTAL		3			0			0			0			1			0			2													

Livestock: General Holdings – Amphibians

COMMON NAME	SCIENTIFIC NAME	STOCK 31/12/04			RECEIVED			BORN/N'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/05			CITES
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
Smoky Jungle Frogs	<i>Leptodactylus pentadactylus</i>	0	0	12									0	0	6				0	0	6		
Axolotl	<i>Ambystoma mexicanum</i>	aq	0	0	16														0	0	16	II	
Red Eyed Tree Frog	<i>Agalychnis callidryas</i>	0	0	10			0	0	54				0	0	24	0	0	11	0	0	29		
White's Tree Frog	<i>Pelodytes caerulea</i>	0	0	-9									0	0	3				0	0	6		
Mission Golden-eyed Tree Frog	<i>Phrynosyllax resimifactor</i>				0	0	20						0	0	5				0	0	15		
Blue Poison Arrow Frog	<i>Dendrobates azureus</i>	4	4	7			0	0	45				1	1	12	0	0	27	3	3	13	II	
Black and Green Poison Arrow Frog	<i>Dendrobates auratus</i>	0	0	20									0	0	4	0	0	11	0	0	5	II	
Yellow Striped Poison Arrow Frog	<i>Dendrobates leucomelas</i>	5	2	11												0	0	10	5	2	1	II	
Yellow and Blue Poison Arrow Frog	<i>Dendrobates tinctorius (citrinella)</i>	0	0	0	0	0	6												0	0	6	II	
Golden Poison Dart Frog	<i>Phyllobates terribilis</i>	3	2	27			0	0	13				2	0	8	0	0	25	1	2	7	II	
Golfodulcean Poison Dart Frog	<i>Phyllobates vittatus</i>	4	0		0	0	6												4	0	6	II	
Mossy Frog	<i>Theloderma corticale</i>	0	0	0	0	0	8						0	0	3				0	0	5		
Puerto Rican Crested Toad	<i>Bufo lemur</i>	10	14	0			0	0	38	0	0	27	1	1	0				9	13	11		
Mallorcan Midwife Toad	<i>Alytes muletensis</i>	0	0	315			0	0	473	0	0	473							0	0	315		
Sabana Surinam Toad	<i>Pipa parva</i>	aq	0	0	7														0	0	7		
SUB-TOTALS		26	22	434	0	0	40	0	623	0	0	500	4	2	65	0	0	84	22	20	448	CITES I 0	
TOTAL		482			40			623			500			71			84			490			CITES II 7
																							TOTAL 7

Number of specimens at year end – 490 Number of species at year end – 15 Number of species held during the year – 15
 aq indicates species kept by the Aquarium

Livestock: General Holdings – Fishes

COMMON NAME	SCIENTIFIC NAME	STOCK 31/12/05	CITES	COMMON NAME	SCIENTIFIC NAME	STOCK 31/12/05	CITES
POTAMOTRYGONIDAE				MOCHOKIDAE			
Freshwater Stingray	<i>Potamotrygon motoro</i>	5		Polka-dot Upside-down Catfish	<i>Synodontis angelicus</i>	2	
OSTEOGLOSSIDAE				Lake Malawi Upside-down Catfish	<i>Synodontis njassae</i>	4	
South American Arowana	<i>Osteoglossum bicinctosum</i>	2		CALLICHTHYIDAE			
Acatic Arowana	<i>Scleropages formosus</i>	4	I	Burgess's Catfish	<i>Corydoras burgessi</i>	6	
MORMYRIDAE				Panda Catfish	<i>Corydoras panda</i>	5	
Bunt Jaw Elephant Trunkfish	<i>Gnathonemus elephas</i>	3		LORICARIIDAE			
Long-nosed Elephant Trunkfish	<i>Gnathonemus petersi</i>	18		Bristlenose Plecostomus	<i>Ancistrus dolichopterus</i>	49	
Down Piker	<i>Campylomormyrus rynchophorus</i>	1		Plecostomus Catfish	<i>Hypostomus plecostomus</i>	1	
Short-nosed Elephant Trunkfish	<i>Marcusenius angolensis</i>	4		Emperor Peckoltia	<i>Hypanostictus zebra</i>	2	
CHARACIDAE				TOXOTIDAE			
Mexican Blind Cave Fish	<i>Astyanax mexicanus jordanii</i>	36		Archer Fish	<i>Toxotes jaculatrix</i>	4	
Long-finned Characin	<i>Bryconus longipinnis</i>	80		PROTOPTERIDAE			
Cardinal Tetra	<i>Paracheirodon axelrodi</i>	100		African Lung Fish	<i>Protopterus annectens</i>	1	
CYPRINIDAE				CERATODONTIDAE			
Omani Blind Cave Fish	<i>Garra barreimae</i>	110		Australian Lungfish	<i>Neoceratodus fosteri</i>	6	II
Giant Danio	<i>Danio malabaricus</i>	60		CENTRISCIDAE			
Pla Eesok	<i>Probarbus jullieni</i>	6	I	Shrimplish	<i>Aeoliscus strigata</i>	6	
Black Ruby Barb	<i>Puntius nigrofasciatus</i>	31		Spotted Shrimplish	<i>Aeoliscus punctulatus</i>	3	
Cuming's Barb	<i>Puntius cumingi</i>	21		SYNGNATHIDAE			
Denison's Barb	<i>Puntius denisoni</i>	25		Seahorse	<i>Hippocampus kuda sp</i>	97	
Cherry Barb	<i>Puntius titteya</i>	1		Krynsia Seahorse	<i>Hippocampus capensis</i>	78	
Harlequin Rasbora	<i>Rasbora heteromorpha</i>	19		Longsnout Seahorse	<i>Hippocampus reidi</i>	34	
CYPRINODONTIDAE				Sea Pony	<i>Hippocampus fuscus</i>	149	
Noisy Be Killie Fish	<i>Pachypanchax ornatonotus</i>	52		Martin's River Pipefish	<i>Doryichthys muriei</i>	2	
Killifish	<i>Pachypanchax sakaramyi</i>	62		MONODACTYLIDAE			
Butterfly Goodeid	<i>Ameiops splendens</i>	400		Finger fish	<i>Monodactylus sebae</i>	4	
Banded Alotoca	<i>Alotoca gosiinei</i>	37		SCORPAENIDAE			
Bold Characodon	<i>Characodon audax</i>	53		Weedy Scorpionfish	<i>Rhinopias fronsosa</i>	1	
Characodon	<i>Characodon sp 'Abraham Gonzales'</i>	70		White Fin Lionfish	<i>Pterois radata</i>	1	
Golden Saw-finned Goodeid	<i>Skiffia francesae</i>	198		Fumanchu Lionfish	<i>Dendrochirus biocellatus</i>	1	
Dreissant Zoe	<i>Zoogoneticus tequila</i>	80		SCATOPHAGIDAE			
Green Wagtail Swordfish	<i>Xiphophorus helleri</i>	150		Red Tiger Scat	<i>Scatophagus argus</i>	3	
ADRIANICHTHYIDAE				POMACENTRIDAE			
Duck-billed Fish	<i>Xenopoeilus sarasinorum</i>	30		Skunk Clown Fish	<i>Amphiprion sandaracinos</i>	2	
COBITIDAE				Fire Clown Fish	<i>Amphiprion ephippium</i>	6	
Down Loach	<i>Botia macracantha</i>	8		Tomato Clown Fish	<i>Amphiprion frenatus</i>	1	
Dwarf Loach	<i>Botia sidthimunki</i>	4		Common Clownfish	<i>Amphiprion ocellaris</i>	22	
DICHLIDAE				Yellow Tailed Blue Damsel Fish	<i>Chrysiptera hemicyanea</i>	1	
Discus	<i>Symphysodon aequifasciata</i>	9		CHAETODONTIDAE			
Lake Victoria Cichlid	<i>Yssichromis argens</i>	63		Copperband Butterflyfish	<i>Chelmon rostratus</i>	2	
Lake Victoria Cichlid	<i>Yssichromis pyrrhocephalus</i>	39		POMACANTHIDAE			
Lake Malawi Cichlid	<i>Melanochromis auratus</i>	10		Koran Angelfish	<i>Pomacanthus semicirculatus</i>	1	
Lake Malawi Cichlid	<i>Pseudotropheus socoffi</i>	34		ACANTHURIDAE			
Zebra Cichlid (Gold)	<i>Pseudotropheus zebra</i>	3		Pegaj Tang	<i>Paracanthurus hepatus</i>	3	
Lake Malawi Cichlid	<i>Labidochromis caeruleus</i>	10		Yellow Tang	<i>Zebrasoma flavescens</i>	1	
Lake Malawi Cichlid	<i>Labetropheus fuelleborni</i>	18		APOGONIDAE			
Lake Malawi Cichlid	<i>Nimbochromis livingstoni</i>	3		Emperor/Banggai Cardinal Fish	<i>Pterapogon kauderni</i>	67	
Lake Malawi Cichlid	<i>Nimbochromis polystigma</i>	2		LABRIDAE			
Spotted Damia	<i>Paretroplus maculatus</i>	3		Cleaner Wrasse	<i>Labroides dimidiatus</i>	1	
Pin Striped Damia	<i>Paretroplus menarambo</i>	50		PSEUDOCROMIDAE			
Pungu Barombi Mbo Cichlid	<i>Pungu macleari</i>	50		Orchid Dottyback	<i>Pseudochromis fridmani</i>	6	
Konye Barombi Mbo Cichlid	<i>Konia eisentrauti</i>	80		TOTAL			
Ungi Barombi Mbo Cichlid	<i>Sarotherodon innelli</i>	85					2891
Laka Keppe Barombi Mbo Cichlid	<i>Sarotherodon johbergeri</i>	40		Number of specimens 5785 at year end			
Nyasi Barombi Mbo Cichlid	<i>Stomatepia mariae</i>	45		Number of species 217 at year end			
Pindu Barombi Mbo Cichlid	<i>Stomatepia pindu</i>	50					
ANABANTIDAE							
Pearl Gourami	<i>Trichogaster leerii</i>	2					
ATHERINIDAE							
Red Rainbow Fish	<i>Glossogobius aureus</i>	9					
Lake Kufubu Rainbow Fish	<i>Melanotaenia lacustris</i>	35					
Dwarf Rainbow Fish	<i>Melanotaenia praecox</i>	6					
PIMELODIDAE							
Red-tailed Catfish	<i>Ptyractus hemilepterus</i>	3					

* indicates species bred in the Society's collection in 2005

CITES I 2
CITES II 1
TOTAL 3

Livestock: General Holdings – Invertebrates

COMMON NAME	SCIENTIFIC NAME		STOCK 31/12/05	CITES
ARACHNIDS				
Chilean Rose Tarantula	<i>Phrixotrichus cala</i>		1	
Mexican Red-knee Tarantula	<i>Brachypelma smithi</i>		4	II
INSECTS				
Macleay's Spectre	<i>Eristosoma taratum</i>	*	4	
Fruit Beetle	<i>Pachoda</i> sp	*	20	
Flamboyant Flower Beetle	<i>Eudicella graili</i>		4	
Assassin Bug	<i>Platymerus biguttata</i>	*	20	
Madagascar Hissing Cockroach	<i>Gromphadorhina portentosa</i>	*	50	
Leaf Cutter Ants	<i>Acromyrmex octospinosus</i>	*	1 colony	
Giant Indian Praying Mantis	<i>Hierodula membranacea</i>	*	55	
Seychelles millipede	<i>Sechelleptus seychellorum</i>		15	
MOLLUSCS				
African Land Snail	<i>Achatina fulica</i>	*	25	
Partula Snail	<i>Partula varia</i>	*	619	
Partula Snail	<i>Partula mirabilis</i>	*	301	
Partula Snail	<i>Partula hyalina</i>	*	115	
Partula Snail	<i>Partula taha</i>	*	9	
Partula Snail	<i>Partula otahitana</i>		4	
Conch	<i>Fusinus polygonodes</i>	aq	1	
COELENTERATES				
Beaker Coral	<i>Acanthophyllia deshayensiana</i>	aq	3	II
Bubble Coral	<i>Plerogyra sinuosa</i>	aq	3	II
Sea Anemone	<i>Heteractis</i> sp	aq*	20	
Leather Coral	<i>Sarcophyton trocheliophorum</i>	aq	3	
Zoanthid Colony	<i>Zoanthid</i> sp	aq*	1	
Soft Coral	<i>Sinularia</i> sp	aq*	100	
Mushroom Polyps	<i>Actinodiscus</i> sp	aq*	100	II
Mouse Ear Coral	<i>Lobophytum crassum</i>	aq*	2	II
Encrusting Anemone	<i>Palythoa</i> sp	aq*	2	
Yellow Encrusting Anemone	<i>Parazoanthus</i> sp	aq*	3	
Bowl Coral	<i>Turbinaria pelata</i>	aq	1	II
Bowl Coral	<i>Turbinaria mesenterina</i>	aq	1	II
CRUSTACEANS				
White-clawed Crayfish	<i>Austropotamobius pallipes</i>		100	
ECHINODERMS				
Long Spined Urchin	<i>Diadema antillarum</i>	aq	9	
Green Brittle Starfish	<i>Ophiurachna incrassata</i>	aq	15	
TOTAL			1610+	

Number of specimens at year end – 1610+

Number of species at year end – 33

CITES I 0

CITES II 7

TOTAL 7

*Indicates species bred in the Society's collection in 2005

aq indicates species kept by the Aquarium

Animal Summary

**Ambassador* Species	46.41%	194
**Threatened Species	53.59%	224
TOTAL NUMBER OF ANIMAL SPECIES HELD DURING THE YEAR		418

Ambassador Species figure is the total number of non-threatened species held during the year.

**Threatened Species is total of IUCN Red List species and/or those in Managed Programmes held during the year.



Mexican Red-knee Tarantula (*Brachypolima smithi*)



Stephen McKeown
Head of Education

Education Division

One of the foundations of good educational practice is to evaluate what you do so that you can make it better or at least prove that it's working!

Education Functions

- Interpret and directly contribute towards the Zoo's global work in preserving biodiversity and promoting sustainability
- Provide teaching services and materials for schools, colleges and other interested groups
- Organise courses for universities and businesses to project our mission and support the Zoo economy

During the year, education staff carried out a number of scientific studies aimed at finding out more about key elements of our work including: animal visibility; factors affecting visitor dwell-time in the Orang-utans and *Spirit of the Jaguar*; and how well our 'conservation theatre' performances worked over the summer. The results of all these studies were most interesting and will help us develop even better offerings for the future.

Paying school visits increased by 6% over 2004 (20065 against 18841) which is very gratifying given the competitive nature of the schools visit market.

Interpretation and Communication

Along with general upgrading of interpretation throughout the Zoo, new interpretation was created for the tigers, aquarium, and rhinos where a set of magnificent bronze sculptures of Meerkats were sited on a termite mound, providing a photo opportunity and another interactive experience. Altogether more than 350 items of interpretation were completed. The popularity of the Library continued to grow with staff usage up 25% on 2004 and non-staff, mainly student, numbers increasing by 26% (1530 against 1125).

A big attraction in the *Wildlife Discovery Centre* was our *Shellshock* exhibition (see picture below), portraying the plight of turtles, terrapins and tortoises as part of a Europe-wide zoo and aquarium campaign. A central feature was a specially-commissioned cartoon strip telling the story of the only known living specimen of the Yunnan Box Turtle. Over 100,000 visitors passed through the exhibition, donating £2000 to the campaign. All the hard work and imagination that went into developing the exhibit was rewarded when we were given the *EAZA Shellshock Special Award for Education* – against stiff competition from dozens of other zoos throughout Europe.

Our Artist in Residence for 2005, selected from several dozen applicants, was Katy Hollinshead whose work was exhibited in the *Wildlife Discovery Centre* in the autumn. Katy's residency was kindly supported by the Arts Council of England and the Granada Foundation.

Recognising the WDC's potential as an exhibition centre year-round we developed a scheme to renovate the building at the beginning of 2006 and, with assistance from the Zoo's Development Office, submitted an application to HSBC for funding. They showed great interest in our plans and subsequently donated a very generous £58,000 to enable us to transform the building.

Training

Various members of staff were supported by the Zoo in their professional development. I started a Plain English Diploma run by the Plain English Campaign – the organisation who awards the Crystal Mark for clarity to deserving documents. Maggie Esson, Education Programmes Manager, was accepted by Liverpool John Moore's University to study for the degree of PhD: with 'effectiveness of zoo education programmes' as her field of research. This is a very important area of study with the newly published *World Zoo and Aquarium Conservation Strategy* recommending that we develop ways of testing how well our programmes are working (see above).

Outreach

There is no room here to talk in-depth about our educational outreach programmes, but highlights were a consultancy trip by Conservation and Education Director Mark Pilgrim and myself to Mallasa Zoo in La Paz, Bolivia; Maggie Esson visited *Save the Rhino International* projects in Kenya; and Sarah Bazley, Lead Presenter, went to Uganda to assist in the development of new education programmes and facilities at the Ziwa Rhino Sanctuary.



Chester Zoo was invited by the Network of Conservation Educators and Practitioners (NCEP), to produce a module for a project run by the American Museum of Natural History, New York. The module produced by the Education Division is 'The Management of Conservation Breeding Programmes in Zoos and Aquariums'.

Chester Zoo is an academic partner with Manchester Metropolitan University (MMU) and collaborates in the provision of courses. A recent audit report of the University, for which the Society provided information, confirmed the soundness of management and academic standards.

Presenter Programmes

Presenters had another busy year with an estimated 458,688 of the visitors attending at least one of their presentations (45% of total Zoo visitors). The Presenter-led *Wild Winter* experience in the *Wildlife Discovery Centre* coincided with *Daytime Santa Magic 2005* and provided an opportunity for youngsters to explore a winter forest by torchlight: complete with real trees, owls hooting and the chance to sit with a family of badgers in their den while the children had a story read to them.

Our activities during 2005 have provided a solid base on which to build further in 2006, particularly with regard to using our research findings to make our educational activities and the visitor experience more relevant and also, where appropriate, more fun!

Zoo Talks 2005

15 January

Michael Leach
It's a funny way to make a living

12 February

Brian Hallworth
Urban Wildlife

12 March

Gregory Rasmussen
The Hunted Hunters

23 April

Simon Bearder
Discovering new species in the Rainforest

1 - 4 June

Stephen McKeown
5th International Zoo and Aquarium Marketing Conference, Allwetter Zoo, Muenster, Germany
Getting the Message Over

3 June

Mark Pilgrim
A night of Rhinos for Rhinos

5 September

Stephen McKeown
Botanic Gardens Education Network
Kew Gardens
The pros and cons of using volunteers in education programmes

21 September

Stephen McKeown
Mallasa Zoo, La Paz, Bolivia
The role of IZE in Latin American Zoo Education

21 - 24 September

Gill Wells
European Zoo Educators Conference
Beauval Zoo, France
'Lending a Hand' - Chester Zoo's outreach work in Zambia

24 September

Simon Chapman
Deepest Borneo

22 October

John Lawton Roberts
Life and wildlife on the fringe of Europe

8 - 11 November

Stephen McKeown
African Zoo and Reserve Educators Network Conference Gaborone, Botswana

11 November

Eric Peake
A brush with birds

25 November

Conference Recommendations (Chair)
Andrew Moss
BIAZA Conference
Dudley Zoo
Conservation, canopies and kinship - pre-evaluation of the new orang-utan exhibit at Chester Zoo

10 December

Steve McWilliam
Did you know about rECOrd?

In addition, many members of staff gave talks to local, regional and international audiences outside the Zoo.





Penny Rudd

Junior Members Co-ordinator

Junior Members

We are clearly doing something right as far as Junior Members are concerned. Looking back over the past 20 plus years, the old saying of 'from tiny acorns do mighty oak trees grow', seems to apply.

When we first started arranging regular trips and educational events for the previous Junior Members in 1981 we had just 10 participating Juniors, and two of those were the Director's sons who were 'encouraged/bribed/persuaded' to come along to support the new Club! With a Junior Membership of 9,000 as we close 2005, the youngsters have obviously voted our efforts to provide them with what they want as a great success.

It is also interesting to ponder on the number of Juniors who maintain their contact with the Zoo long after they have passed the 18 year old cut-off point for Membership. We have several ex-Juniors now employed with us, not only within our Keeping and Animal Management staff but throughout the functions of the Zoo. We also keep in touch with many of those who have gone off into careers as veterinary surgeons and zoologists, as well as environmentalists, artists, teachers and even bank managers to name just a few. Many, of course, continue as senior Zoo Members. It is impossible to say how many of our Juniors retain a life-long interest in nature which was first inspired and encouraged by the Junior Club at the Zoo. However, as we are starting to see the children of our original Juniors now enthusiastically attending the events, the hope that continued interest in conservation remains at the forefront of consciousness, appears well-founded.

Juniors have had another great year in 2005. Our *Discovery Session* in January initiated youngsters to the joys of zoo design, encouraging them to think about what the animals need in a 'holistic' sense to thrive in the Zoo. Our visit to *Lower Moss Wood Wildlife Sanctuary* in February combined a brilliant guided walk, led by Ray Jackson who enthralled the Juniors with his tales of the wood and its inhabitants, followed by pond-dipping, and then a tour of the wildlife hospital and rehabilitation centre. The ever-popular *Tracks & Signs* day attracted well over 100 Juniors to participate in the muddy business of making plaster casts of animal tracks.

We enjoyed our April visit to *Shugborough Home Farm* in Staffordshire, and spent a sunny day making cheese and watching milling in action and then eating the produce of the flour baked in the traditional way over the old range.

We returned to a secreted quarry off the Long Mynd in Shropshire for our Fossil Hunting in May and this wonderful place gave up its treasures willingly into the delighted hands of the youngsters who were keen to discover fossils. We had to explain that most of what we found had to be left there, and 'fleece' the Juniors as we left in order to meet the weight limit for the bus on the return journey!

A new event for us was our visit to *Foel Farm Park* on the Isle of Anglesey in June, where the Juniors indulged their passions for bunny-hugging and scatter feeding, as well as pony rides and learning about organic farming. The attached *Chocolate Factory* was also a popular diversion.

Our most over-subscribed event every year is the *Day-with-a-Keeper*, and 65 'over-twelves' were lucky enough to take part. A big thanks to the Keepers for their help with this. The summer barbeque in August saw us enjoying a re-cycling event with artists from the *British Wildflower Centre* joining us to encourage our creative skills in making a life-size model Emu from recycled plastic.

We entered the Autumn with a visit to *Hilbre Island* in the Dee Estuary in September, followed by a lovely walk in Snowdonia during October when one of the Park's wardens escorted us around Lake Padarn. We visited the new *World Museum* in Liverpool in November and ran out of time, as ever, as there was so much to see after the major renovations of the past few years. The Christmas Party and disco rounded off our year's activities.

A huge thank you goes to all those Juniors who have participated throughout the year and, of course, to all of our volunteer helpers.



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Liz Child
Head of Visitor Services

Visitor Services Division

2005 has been a year of continued growth and change for the Zoo. Sales performance in the shops and cafés has been good. The events business has almost doubled in size.

Also, we have continued to enhance the look of the Zoo and ensure that our facilities remain second to none.

Functions

- Deliver high levels of customer care Zoo-wide
- Maintain all guest facilities to a high standard
- Develop new facilities to meet ever-growing customer needs
- Ensure the Zoo is accessible to all ages and abilities
- Develop and grow commercial activity in Catering, Retail, Events and Transport (Waterbus and Monorail)
- Explore and develop new income generating schemes

Café Tsavo

The most significant Visitor Services building development this year has been the commencement of the new *Café Tsavo* project. This new, East African themed café, situated near to the main entrance, is scheduled to open in early 2006 and will replace the existing *Oasis Café*.

This exciting development, costing £2 million, is the biggest investment the Zoo has ever made in catering facilities and represents a bold experiment. The *Café Tsavo* will be the first themed eating experience on offer in any British zoo. In addition to good, wholesome food and a fine ambience (with African music), the Café will provide informal education on environmental and ethical issues, such as the importance of recycling waste products and the need to avoid consuming Cod (*Gadus sp.*), which is now officially listed as a threatened species by the World Conservation Union (IUCN).

Careful market research has been conducted to ensure that the menu meets the changing needs of our guests. We recognise the importance of providing healthy and organic options, as well as the ever popular 'comfort food'. We look forward to this exciting new project opening in 2006.

Catering

Zoo Catering, managed by Sue Clews, continued to prosper in 2005, with average spend per visitor being £3.08 (4% above 2004) generating a total surplus of £548,000, after costs of sales and labour. Some new ranges were successfully introduced into the cafés this year, including 'Fair Trade' cakes and healthier choices in food and drink.

Retail

Zoo Shops, managed by Alan Jones, continued to deliver a strong sales performance, with average spend per visitor being £2.34, (1.2% above 2004) generating a total surplus of £639,000, after costs of sales and labour. A new range of toys proved very popular with our younger visitors. Perhaps it is significant that among our best selling goods this year were ponchos and umbrellas – over 9,000 of which were sold. The *Ark Shop* store room was extended, giving the retail team additional, much-needed working space, as well as enabling a useful extension to the shop itself. The new Electronic Product Ordering System (EPOS) became fully operational at the beginning of 2005. There is now a far more accurate and up-to-date account of stock levels, with the opportunity for 'just-in-time' purchasing.

Events

The Events Team, headed by Jane Lawson, have secured a large number of bookings this year (242 versus 225 in 2004). Wedding bookings, in particular, have continued to increase, and we hosted over 50 weddings and receptions at the Zoo (versus 38 in 2004). The Zoo also hosted a special *Dreamnight at the Zoo* event in July. Staff volunteered their free time to provide an evening at the Zoo for disabled or seriously ill children and their families. The local police, fire brigade, army and hospital also kindly pitched in.

Amenities and Gardens

The A&G department, managed by Chris Williams, is responsible for the upkeep of the Zoo's grounds, gardens and other visitor facilities, as well as the operation of the monorail and waterbus. In 2005 revenue from the monorail and waterbus exceeded target, generating income of £454,000 (9% above 2004). A&G staff redesigned *The Fountain* large-scale flowerbed scheme in the centre of the Zoo, and this produced much positive feedback from guests.

Just two examples of the smaller enhancement projects carried out this year have been the covering of *Jubilee Square* monorail station, keeping visitors dry in the rain; and the provision of disabled toilet facilities in the *Oakfield House* and restaurant.

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Front of House

The Front of House team, led by Julie Bird, consists of Gates and Gift Aid staff. This Team joined the Visitor Services Division towards the end of the year (moving from Finance and Administration) as part of a Zoo-wide re-organisation. Staff in this department did a great job in 2005, welcoming visitors at the main entrance and encouraging them to make a *Gift Aid* donation on their admission fee. With the introduction of new *Gift Aid* legislation in April 2006, staff will now have to work even harder to maintain this vital income stream worth in the order of £1.2 million to the Society.

Visitor Information Centre

The *Visitor Information Centre* (VIC) was another new addition to the Zoo in 2005. Previously the *Wildlife Activity Centre* (under Education), the newly constituted 'VIC' served as an information point for customers during peak periods, and also served the critical purpose of being a 'lost child facility', successfully dealing with more than 200 incidents! We pay close attention to customer enquiries and feedback to gratefully accept plaudits and do our best to remedy problems immediately, or to build solutions into our strategic plans.

Customer Analysis 2005

	Number of complaints received	% of total visitation
Animal Visibility	204	0.020%
Miscellaneous (toilets, queues, works etc.)	96	0.009%
Admission Cost / Value for money	52	0.005%
Catering	18	0.002%
Staff Issues	18	0.002%
Health and safety	14	0.001%
Members only gate	10	0.001%
Total Complaints	412	0.040%

Counterbalancing this, compliments were also received directly, by telephone and in writing.

Awards

The gardens and horticulture teams were responsible for winning two awards this year: *Chester in Bloom* and *North West in Bloom* ('Best Tourist Attraction'). We were also delighted to win (on an unsolicited, independent popular vote) the *Tommy's Parent Friendly Award* for the 'Best National Tourist Attraction'. This is indeed a high accolade.

Looking forward to 2006

Next year we intend to make our visitors' day out even more enjoyable than before. A new offering will be to give all visitors a free Map of the Zoo. Add to this the many other exciting projects planned for 2006 – such as the grand opening of *Café Tsavo*, *Elephants of the Asian Forest*, and the new Okapi adventure – and a day out at Chester Zoo is guaranteed to be even better value in 2006!





Sharon Leeson

Head of Marketing and Development

Marketing and Development Division

2005 has seen exciting and innovative developments within the division, with plenty of success in terms of effective marketing, major achievements in fundraising and awards presented for our website and recycling campaign.

Marketing & Development Functions

- Maintain and develop the status of the Zoo as a nationally and globally recognised brand leader among zoos and attractions, through effective marketing and publicity
- Develop alternative sustainable income streams and maximise opportunities to grow revenues
- Maintain and grow visitor base
- Gain a greater understanding of our customers
- Build relations with and cultivate core customer groups
- Support Zoo projects through dedicated fundraising
- Act as a service provider to ensure consistency of communication to internal and external stakeholders

The Director represented WAZA at the *Fifth International Zoo & Aquarium Marketing Conference* co-organised by WAZA and EAZA in Muenster, Germany, in June. The conference was hosted by Allwetter Zoo, Muenster and the main theme was *The Colour of Zoo Marketing is Green*. There were presentations on a range of topics including sponsorship and branding; conservation and education, environmental issues and sustainable tourism. The conference was attended by over 140 delegates from 33 countries. Council Member Brian Child and several Zoo staff gave presentations and coordinated workshop sessions; together with Director's Assistant, Frances Jaques, who provided assistance in organising the conference and helped to write up the Conference Proceedings. She has since been invited to become a member of the EAZA Marketing & PR Committee and will help to organize the 2007 marketing conference.

Regionally, the Division is working with the *Liverpool Capital of Culture 2008* group to maximize opportunities for the region and the Zoo. Also, the Director is a Board member of *Culture Northwest*, a policy arm of the North West Development Agency (NWDA), which aims to foster cross cultural initiatives in the region. As Chair of the *Cheshire Gardens Strategy*, he hosted a number of meetings in 2005 to discuss the final stages of the consultancy work in preparation for a submission for an RDA grant. Chester Zoo is at the centre of this bid which could provide significant funds to develop gardens in the northwest as a tourist destination.

Fundraising and Development

The Asda Tiger Bread promotion was a highlight in 2005, with the total raised in excess of £130,000. The new *Asda Tiger Trail* was officially launched in September and David Smith, Asda People Director, officially opened the Trail.

Other major donations were linked to our new *Elephants of the Asian Forest Appeal* with £45,000 of funding from *Waste Recycling Environmental*, via the landfill scheme that will be used to pay for pathways. The HDH Wills Trust donated £40,000 to support the *Elephants of the Asian Forest Appeal*. A joint Chester Zoo and Linnean Society reception was held at Burlington House in London to celebrate the success of the *Asian Elephant Appeal* and highlight the Zoo's conservation work. This was attended by Members of the Zoo Council and staff, Linnean biologists and representatives of high-level funding bodies.

We received numerous other generous grants and donations. M&S Money kindly continued to support our education programme and we received a welcome boost for the *Wildlife Discovery Centre* with HSBC committed to providing £58,000 to refurbish this facility early in 2006. We re-launched our legacy scheme as 'Lifetime Supporters' and have so far received over £40,000 and numerous additional pledges, for which we are very grateful.

The annual *Elephantasia Ball* was held in July at Chester Racecourse and we are grateful to all those who attended and helped us raise the remarkable sum of £30,000.

Our 'Cash for Trash' scheme for re-cycling printer cartridges and mobile phones was commended by BIAZA as an innovative marketing campaign for 2005.



Memberships and Animal Adoptions

An on-line ordering service for memberships and adoptions was launched in September 2005. This has streamlined the administrative process and enabled us to handle ever more applications. A photo identification service was introduced for membership admissions; this has allowed the entrance procedure to be more efficient.

There were significant increases in the numbers of members and adopters.

The number of members grew by 14% to over 27,000 during 2005. In the previous year, the growth rate was 8%. Members now represent almost 3% of total visitors to the Zoo.

The number of people wishing to adopt an animal rose to 5,900, representing an increase of 18%. More than 60% of adoptions are purchased as gifts and, of all adopters, 59% go on to renew their adoption after one year.

Advertising and Promotions

Throughout 2005, we maintained our advertising presence in the region through TV, radio and press advertising. Market research among visitors confirms the effectiveness of advertising, with 53% of visitors stating that they had 'seen or heard' advertising for the Zoo.

Towards the end of the year a number of key promotions were agreed, offering Chester Zoo the opportunity to work with major corporate partners such as M&S Money, MBNA and Manchester Airport.

Website

The Chester Zoo website continues to be very popular with over 1,007,000 (against 559,000 in 2004) visits in the year. We are continuing to develop the site with on-line shopping plus better information for groups planning a visit to the Zoo. We were delighted in October when we won the award for *Tourism Website of the Year* in England's North West Tourism Awards.

Group Visits and Tourism

Development of group visits was a key objective throughout the year and work was carried out to create new packages including a guided tour. This is being further developed for 2006 with the inclusion of lunch or afternoon tea. Further work on our groups database has enabled us to target the groups sector more effectively and this work is ongoing. Marketing to the tourist sector is increasingly important and we recruited more hotels to sell Zoo tickets to their visitors. We also attended a number of public and trade exhibitions alongside key partners such as Chester City Council, Cheshire County Council and the Cheshire and Warrington Tourist Board.

In 2005 there was a 12% increase in visits from groups and visitors who had purchased their tickets from a third party (such as a Tourist Information Centre, Hotel, or Sports and Social Club) – see breakdown below:

	2005	2004
Groups	46,493	49,740
Corporate	7,335	0
Advanced Sales	4,648	2,710
Hotel/promotional	436	56
Total	58,912	52,506

Market Research

Research throughout the year continues to indicate a high level of satisfaction among visitors to the Zoo. Over 80% said that they were 'very satisfied with their visit' and over 70% stating that 'they would visit the Zoo again'.

More than 8 out of 10 visitors rated the animal exhibits well, and visitors expressed high levels of satisfaction with other facilities (*Zoofari*, *The Fun Ark* and *Waterboat*).

In terms of awareness of the Zoo's conservation mission, over 60% of visitors surveyed were aware of our conservation work and just over half knew that Chester Zoo is a registered charity.

Public Relations

Our PR team continued to achieve excellent results this year with numerous highlights that brought us welcome PR: the birth of a baby giraffe in September, the ongoing developments of new attractions, a 'pumpkin smashing event' for the elephants over Halloween and a visit from Bill Oddie for the BBC's *Countryfile* programme.

In October we enjoyed huge media interest in the unexpected arrival of a Magnificent Frigate Bird which had been blown off-course by Hurricane Katrina. It was found exhausted and very unwell by a local farmer who asked the Zoo to care for the bird. It is the first time this species has been seen in the UK and – although it sadly passed away – we had media interest from the UK, Europe and Canada.

With much public interest in avian influenza our PR team have prepared carefully for any press interest should the UK face an outbreak. In October we were contacted by *BBC News 24* to present the Zoo's perspective on this threat and this resulted in positive coverage.

In total over 100 press releases were issued during the year, generating more than 700 minutes of TV and radio coverage. The equivalent value of the coverage we received in 2005 exceed £800,000, reaching a total circulation of 65,731,740 people!

Honours

The Society presented a *Gold Medal* to Dr Desmond Morris, famous lecturer, broadcaster and the author of *The Naked Ape* and *The Human Zoo*. Dr Morris was honoured in recognition of his outstanding lifetime achievements in the fields of zoology, animal behaviour and psycho-anthropology.



Steve O'Brien

Head of Estates

Estates Division

The Zoo is continuing to invest substantially in the continuing upgrade of exhibits and both visitor and employee facilities.

Estates Functions

- Develop excellent Zoo exhibits
- Manage capital expenditure building programme
- Manage the wider agricultural estate
- Maintain and manage the residential housing stock
- Maintain the Zoo fabric and infrastructure and upgrade facilities and services
- Address security requirements
- Maintain and further develop our Environmental Management System
- Provide management of Health and Safety and First Aid

The rolling capital expenditure development programme maintained momentum throughout the year with many projects being completed as others commenced. We expended in the region of £4.5 million in 2005 on 26 projects, large and small.

In line with our revitalised mission, there has been a major emphasis on animal conservation and welfare facilities. Projects completed during the year include *Tsavo Phase II* for critically endangered Black Rhino; a major off-show holding facility for Black Rhino; Crane and Duck Rearing pens; *Rare Parrot Breeding Centre*, hard standings for the Père David Deer and Gemsbok; and extensive works at our Animal Supplies facility. Attention was also paid to commercial outlets and our *Ark Shop* retail area was extended and an additional storage facility built.

New Café

Following extensive planning, two major new projects were commenced: the *Café Tsavo* is being built to replace our very successful, but out-dated *Oasis Café*, close to the main entrance. This new restaurant facility (value £2 million) is located within the *Tsavo Zone* and is designed to be in keeping with the area. Notable features include a curved thatched roof covering an area of 680m², offering comfortable indoor facilities for visitors using the café in the winter months; and also a covered external area allowing wonderful views across the *Tsavo* paddocks.

Elephants

Our second major animal exhibit was the start of the build for *Elephants of the Asian Forest* (value £3 million, pictured below). This scheme is an 'immersion experience' for our visitors. The internal viewing of the elephants will be from within an extensive themed and landscaped area.

The first phase of the works included a new 300m² external hard standing and paddock, a large 890m² off-show extension to the existing house. The second phase in 2005 was the demolition of the existing house which will be replaced with a large new house covering 2080m² and a maximum height of 12m. The third phase is the theming which will offer a unique experience for our visitors in 2006 and will contain 'support species', soft and hard landscaping and extensive interpretation.

This project addresses many of the animal and keeper safety, health, welfare and environment (SHE) issues. The environment is climatically controlled and also gives the visitors a unique, naturalistic experience. The many 'support species' will be housed in individual enclosures, again with soft and hard landscaping and extensive interpretation.

The relocation of the Bactrian Camels to their new facility by the Onagers (a rare wild ass), allows for the existing house to be converted to a new home for Okapi (a rare Giraffe-like antelope from the Congo rainforest), which arrived earlier in the year. Work commenced in November 2005 and the *Secret World of the Okapi* is due for completion in Easter 2006. The opportunity to landscape the external paddock was taken earlier in the year, to allow trees and vegetation to be well established for the public opening.

Orang-utans

Looking forward to completion in 2007, building work started in 2005 for our new *Realm of the Red Ape* project (value £3 million). This project includes an extension to the existing house, offering first floor viewing for visitors within an 'immersion' environment. This will be interpreted as a tree top canopy experience and will also include various 'support species'. Visitors will approach the building via a themed ramp, pass through the building (viewing both internal and external enclosures) and will exit via a ramp to the rear of the building. Provision is also made for lift facilities to comply with the Disability Discrimination Act (DDA).

The Estates, Animal and Education Divisions are working closely together in the preliminary design stages for *Origins* – a new Aquarium with a contemporary design and theme. It is anticipated that it will take approximately eighteen months to plan, for completion in 2008.

Due to the steadily increasing visitor numbers and the general growth of the Zoo, a review of the main entrance area and associated facilities is also being undertaken in 2006.





Ray Morrison
Maintenance Manager

Maintenance

The Department continues to deliver a full range of maintenance provisions including reactive and planned activities, routine monitoring and statutory inspections.

General Maintenance

Reactive maintenance involved servicing 209 formal and more than 600 informal requests for work. The growth in planned maintenance activities continues, largely related to exhibit development – which increasingly entails complex, computerised or electronically controlled engineering services, such as those for the new *Elephants of the Asian Forest* exhibit. All statutory compliance inspections for fixed and mobile equipment were satisfactorily completed, including those for an extensive range of vehicles, site plant, playground equipment and animal enclosures. Compliance was also achieved in environmental services monitoring (such as meeting the strict discharge standards for water and effluent) and a range of other sustainability (ISO 14001) requirements. Works to facilitate the re-cycling of green waste and construction waste have been completed at Damage Farm, resulting in a 10% reduction in waste to land fill.

Enhancement Project

More than 90 Minor Enhancement Projects have been completed, mostly for the Animal and Visitor Services Divisions, including: netting works at the *Islands in Danger* to allow for the introduction of additional birds; extensive improvements to lighting and aesthetics in the *Tropical Realm*; and works to change the function of the *Wildlife Activity Centre*. In excess of 40 general improvement and painting works have been completed including internal redecoration and refurbishment of the Lecture Theatre.

Capital Projects

Capital Projects Maintenance staff have supported eight Capital Projects including the *Jubilee Station Rainbuster* roofing project; installation of the *Meerkat Bronzes* and facilitation of the *Elephants of the Asian Forest* project.

Training

An operating licence for Mobile Elevated Work Platforms was obtained by two members of staff and additional training courses in the safe use of equipment have been attended by 8 staff. One staff member is studying for the NEBOSH General Certificate in Health and Safety Management.

Personnel

In January 2005 Tony Lennon, Maintenance Operative, left the Society after 25 years service and in April 2005 Paul Lindop, Maintenance Foreman, left after 15 years service. They were warmly thanked for their substantial contribution to Zoo operations. Cresswell Dixon, Mechanical Plant Fitter, joined the Department permanently in October 2005 after a period on a temporary contract and Tony Ankers joined the Department in July to fill the vacant Maintenance Foreman position. Both appointees are highly qualified and experienced – and well suited to meet the increasing demands and to further develop the service provision of the Department.



John Winward
Safety, Health and
Environment Manager

Safety, Health and Environment

The Zoo has conducted work, including on the Animal Health Centre, to ensure continued compliance with the Zoo Licensing Act in preparation for the next full Zoo Inspection in 2007.

Health and Safety

2005 saw the fourth year of our five-year Health and Safety Strategic Action Plan, with work continuing in many areas. As Safety Manager, I have worked alongside the Facilities and Maintenance Managers on many aspects, including Fire Risk Assessment, Asbestos Controls and Water Management. Work has also been carried out to ensure compliance with legislation for Young Persons at Work and Working at Heights. Full-day Health & Safety Foundation Training Courses have also been held for staff who have joined the Zoo since the last series of training.

A Health & Safety Contingency Plan for Staff is under development in the event of a UK outbreak of Avian Influenza (see Animal & Plant report p.9/10). Our Insurance Brokers and Insurance Company have made several visits to carry out Audits on our Health & Safety systems and procedures. We have established improved communications and networking between ourselves, London and Edinburgh Zoos in the hope that we can establish a new Health and Safety Forum for Zoo Safety Managers.

(continued over)

Safety, Health and Environment (continued)

Environmental Management

The Society was engaged in a *Climate Change Project* jointly funded by the Environment Agency, DEFRA, the North West Development Agency (NWDA), and the UK Climate Impacts Programme. The published report deals with the importance of the visitor economy to the North West, and the potential implications of climate change, including the impact on visitor attractions such as Chester Zoo. Evidently, our organisation holds the best dataset in the North West. Project Leader Dr Jonathan Aylen, University of Manchester, gave a presentation on this research at the International Zoo Marketing Conference in Muenster in 2005 (see Marketing & Development report, p. 42).

2005 has seen work undertaken to retain and improve on our ISO 14001 accreditation (an international recognised management standard). Areas addressed included an *Energy Resource Programme* (ERP) that will not only realise financial benefits and cost savings, but will also produce potential savings of CO₂ emissions by more efficient energy use. We have also taken forward our objectives regarding travel plans, vehicle use, water saving and waste management. In the latter case, we are now recycling 20% more of our waste.

In June we had our external two day Audit conducted by Moody International, our accreditation body. I am pleased to be able to report that our *Environmental Management System* (EMS) met the required standard and we have been granted accreditation for a further year.

Ray Morrison, the Maintenance Manager, and myself were invited to deliver presentations on the Society's attainment of ISO 14001 to several high profile conferences, including the *International Zoo Marketing Conference* (WAZA/EAZA) in Muenster, Germany, the joint BIAZA and EAZA *International Horticultural Conference* and the *Institute of Environmental Management and Assessment Conference* at Lancaster University.



Marc Boardman
Facilities Manager

Facilities

The Department has developed further over the last 12 months and, as part of a Zoo-wide re-organisation, has taken on new responsibilities, including a merging of the Security and First Aid Teams. Security shift patterns have changed to incorporate the ever-changing needs of the site.

New legislation governing fire safety comes into effect early in 2006. This has necessitated a *Fire Risk Audit* of all our buildings to assess the probability of fire. The new *Fire Safety Order* moves the onus from the Fire Brigade on to the employer to ensure their buildings are protected and that staff are aware of their changed roles and responsibilities in fire safety.

DDA (*Disability Discrimination Act 1995*) works have continued around the Zoo. A new, more accessible toilet, has been constructed from the original ground floor staff facility in Oakfield House. A wheelchair lift to provide access to the upper mezzanine floor will be in operation by early 2006. Low-level signage has been installed around the site to aid people with impaired vision and a new wheelchair accessible toilet and improved access to the Lecture Theatre is also in commission. We continue to receive positive feedback from visitors with special needs.

There were more than 130 security incidents recorded. Responses to alarm activations were frequent, if not always relating to genuine incidents. Security also dealt with various problematic issues including fires, travellers on the MOD land nearby, car radio thefts, shoplifters unauthorised entry and certain aspects of insurance claims. We also assisted in tracking some of the 200 or more lost children and re-uniting them with their parents!

The Facilities Department is now tasked with the cost-effective procurement of the Society's utilities (gas, water, electricity). For example, when purchasing piped gas, we have managed to avoid recent price rises by securing early contracts.

As part of the enabling works for the *Elephants of the Asian Forest* project, temporary facilities have been installed for First Aid at the main entrance. Working from there, the first aiders dealt with 265 incidents, 17% down on the previous year.

Accident Statistics

Total Accidents

	2000	2001	2002	2003	2004	2005
Visitors	1096	990	318	359	208	189
Staff	411	396	105	116	109	76
Totals	1507	1386	432	475	317	265

HSE Reportable Accidents

	2000	2001	2002	2003	2004	2005
Visitors	12	12	7	3	2	0
Staff	8	7	4	6	2	1
Totals	20	9	11	9	4	1

N.B. It should be noted that the total accident figures for the years 2000 and 2001 included "wasp sting" incidents. From 2002 they are not included.



Jayne Quinn
Head of Personnel

Personnel Division

Personnel strongly supported a major, Zoo-wide management restructure.

This was undertaken to facilitate the Society's plans for growth, and no job losses occurred as a result of changes (indeed some new posts were created and/or responsibilities enhanced).

Personnel Functions

- Staff recruitment, pay and reward strategies
- Employee relations, development and training
- Legal compliance
- Zoo visitor, reception and communication services
- Occupational Health
- Additional responsibilities from 2006

Professional Qualifications of Zoo Staff

- Higher Degrees 16 (5.6%)
- 1st Degrees 28 (9.8%)
- Higher Education Diplomas 9 (2.8%)
- Vocational qualifications 56 (19.6%)
- Professional qualifications 13 (4.6%)

Personnel staff assisted in many areas of the Zoo, helping teams and individuals improve communication, and also advising and dealing with a range of performance-related issues.

A Director General post was established by Council for Gordon McGregor Reid and two new supporting roles at Director level were created. Mark Pilgrim was appointed as Conservation and Education Director, and a Commercial Director, Silvio Liedtke, was recruited to take up this role early in 2006. The restructure resulted in a number of transfers of function; and removed uncertainty in the Marketing and Development area, enabling the recruitment of a permanent member of staff, Sharon Leeson, to head up the division. The Director gave briefings to staff on the Society's revised Mission, Vision and Values, the status of the Zoo expansion projects and the organisational restructure. It is reassuring to note that staff feedback has been very positive.

As a consequence of restructuring, the Personnel Division now incorporates the Payroll team, plus the Safety, Health and Environment function under John Winward (see report p.45). The Payroll team, led by Barbara Stewart, have continued to provide a professional service to all staff and the Inland Revenue; and to deal with many requests for information to progress reviews such as Terms and Conditions, and implement new computer data systems. The Payroll team are heavily involved in the installation, training and operation of the new, electronic *Kronos Time Recording System* – a sophisticated development which utilises biometric data and which makes it much easier to operate complex staff duty rotas and calculate payments.

Recruitment

At the height of the Summer season, staff numbers (permanent, temporary, full and part-time) exceeded 450. The number of permanent staff at end December 2005 totalled 285 (versus 282 in 2004). Recruitment activity has been steady throughout the year, and seasonal employment needs of staff were largely met by the Easter holiday period. Staff turnover for the year was 8.11%, which is low considering the alternative employment opportunities available in the Chester and Wirral area. An additional member of the Personnel team was recruited with Clare Butler joining as Personnel Officer in February.

Training

The Society supported general CPD training for staff in several departments. Training for supervisors, managers and Staff Representatives in handling disciplinary matters was organised and delivered by Personnel staff and an external consultant, to coincide with a new Disciplinary Policy being agreed between management and Staff Association. We were pleased to offer work experience training to 119 external students from 62 separate institutions in 4 different countries, 3 of them European. 74 of the students were from the North West and another 35 from the rest of the UK. In addition, 20 Vets, Vet Nurses and Vet students received training in Animal Health Care. We thank them for their contribution while working at the Zoo. Senior members of staff have acted as trainers, supervisors or mentors to Zoo staff on formal courses and also acted as academic supervisors or examiners for external students undertaking postgraduate training in research at MSc and PhD level.

Terms and Conditions

2005 brought a successful conclusion to the review of Terms and Conditions of Employment in the Society, which had begun in 2003. In July 2005 all staff were invited to sign-up to a new set of terms and conditions of employment, which apply equally across the workforce. It is notable that in several areas, teams or departments came up with solutions to problems that met their own operating requirements, while at the same time conforming to the need for fairness and equity with colleagues in other departments. Empowering teams in this way has made for greater acceptance of changed circumstances and a smoother transition than might have otherwise been the case. The communication of changes was handled systematically and thoroughly, to bring about maximum acceptance. The assistance of the Staff Association was invaluable in supporting the work undertaken, in contributing to the review itself, and in advising individuals or teams.

With the help of outside consultants, work began on incorporation of the Society's Values into a format suitable for a revised, formal *Job Appraisal Scheme*. This work is scheduled to be completed in 2006.

Staff List

Director General's Office

Director General and Chief Executive

Professor Gordon McGregor Reid,
BSc, PhD, CBIol, FIBiol, PLS

Director General's Assistant

Frances Jaques, BA, Assoc CIPD

Directorate Assistant

Susan Lochrie, BSc, PGCE

Personnel Division

Personnel Manager and Head of Division

Jayne Quinn, BA, MA, Dip RSA, FCIPD

Training and Personnel Officer

Clare Butler, BA, Licentiate CIPD

Personnel Assistant

Carol Karim+

Telephonists

Carol Karim+
Eunice Manning
Sharon Whitty

Finance and Administration Division

Financial Controller and Company Secretary

Alan Sykes, FCA, Dip BA

Divisional Secretary

Emma Purdie

Management Accountants

Jill Barnard-Blom, ACCA
Richard Barnett, MAAT

IT Manager

Philip Morris, HNC, Dip AMITA, MCP

Network Administrator

Richard de Riso, BTEC, Nat Dip IT,
CLAIT 3

System Support Technician

Martin King, BTEC, Nat Dip IT, CLAIT 3,
ECDL adv

IT Systems Developer

Mattie Griffin BSc (Hons)

IT Apprentices

Ian Timmis
Andrea Byrne

Accounts Coordinators

Chris Capner
Janet Carruthers+
Emma Holding
Angela Powell

Senior Payroll Coordinator

Barbara Stewart*

Payroll Coordinator

Sylvia Morris*
Janet Carruthers+

Cash Office Supervisor

Carmel Pearson

Front of House Manager

Julie Bird

Cash Office and Front of House Staff

Carl Bowden
Jenny Chadwick*
Karen Davies

Sylvia Delves*
Claire Fitzgerald-Williams
Joyce Lucas*
Nicola Magee*
Sarah Morris*
Lorraine Richardson
Sally-Anne Sheel
Anne Sutherland
Moira Walker
Marilyn Ward-Jones*

Education Division

Head of Education Services and Head of Division

Stephen McKeown, BSc, PGCE

Divisional Secretary

Kate Brankin

Librarian

Jane Woodward, BA(Hons), MCLIP

Education Programme Manager

Maggie Esson, MA, Cert Ed

Education Officers

Anya Moon, BSc, Mphil
Andrew Moss, MSc, BSc
Sarah Spruce, B Ed (Hons)#

Education Administrator

Mark Powleson, BA

Interpretation Officer

Gill Wells, Cert Ed

Lead Presenter

Sarah Bazley BSc

Presenters

Marisa Edwards, BSc, PGCE
David Fitzsimmons, BSc*
Faye McAuley, BSc
Elizabeth Marrs, BA, PGCE
Carrie Moorcroft, BSc Hons
Interpretation Consultant
Ian Hughes*

Animal and Plant Conservation Division

Chief Curator and Head of Division

Mark Pilgrim, BSc

Divisional Secretary

Karen King-Sharp

Administrative Assistant

Lynne Stark

Head of Conservation and Science

Dr Roger Wilkinson, BSc, PhD

Curator of Higher Vertebrates

Mike Jordan, BSc, CBIol, MIBiol,
EurBiol, FZS

Curator of Lower Vertebrates and Invertebrates

Kevin Buley, BSc

Registrar

Penny Rudd, BA, Dip RSA

Specialist Keeper Projects

Nick Davis, MSc

Conservation Coordinator

Alexandra Zimmerman, BSc, MSc,
CBIol, MIBiol

Conservation Officer

Sarah Bird, BSc, PG Dip Ecology

Conservation Assistant

Scott Wilson, BSc, MSc

Research Officer

Sonya Hill, BA, MPhil, PhD

Research Assistant

Eleanor Kean

Veterinary Manager

Stephanie Sanderson, MA, Vet MB,
MRCVS

Veterinary Officer

Steve Unwin, BSc, BVSc, MRCVS

Veterinary Resident

Giles Constant

Veterinary Nurse

Karen Homer, VN, Dip CABT

Zoo Nutritionist

Andrea Fidgett, BSc, MSc, PhD

Student Coordinator

Alan Woodward, Dip Anim Mgt+

Records Administrator

Dave Brunger, Dip Anim Mgt

Team Leaders

Paul Howse, BA, Dip Anim Mgt

Mick Jones

Andrew Lenihan

Chas MacKenzie, Dip Anim Mgt

Wayne McLeod, Dip Anim Mgt

Tim Rowlands

Alan Woodward, Dip Anim Mgt+

Andrew Woolham, Dip Anim Mgt

Keeping Staff

James Andrewes

Shane Blake

Natalie Boyd, Dip Anim Mgt

Jason Boyer

Mark Cleave, Dip Anim Mgt

Karen Davies, Dip Anim Mgt

Joyce Dodd

Gareth Evans

John Frost, Dip Anim Mgt

Sarah Goodchild, Dip Anim Mgt

Stefan Groeneveld, KF

Dave Hall

Geoff Harper, Dip Anim Mgt

Mark Jermy, BSc (Hons)

Claire Jones BSc

Laura Kelly, Dip Anim Mgt

Darren Langford, Dip Anim Mgt

Chris Lavender

Claire Lightfoot, Dip Anim Mgt

Alan Littlehales, Dip Anim Mgt

Simon Marsh Dip Anim Mgt

Helen Massey BSc

Phil Molyneux, Dip Anim Mgt

Anne Morris, Dip Anim Mgt

Paul Morris, Dip Anim Mgt

Niall Ormerod

Don Plant

Belinda Porter, Dip Anim Mgt

Allan Reid, Dip Anim Mgt, SVQ3

Rosemarie Scott, BSc

Katie Sturgess

Lara Thick, MSc, BSc

Craig Williams

Steve Williams, Dip Anim Mgt

Helen Wright, Dip Anim Mgt

Chris Yarwood, Dip Anim Mgt

Herpetologist

Isolde McGeorge

Aquarist

Mike Crumpler

Lower Vertebrates and Invertebrates

Keeping Staff

Karen Entwistle, BSc

Colin Grist

Mervyn Ranasinghe

Douglas Sherriff, Dip Anim Mgt

Matt Swatman, Dip Anim Mgt

Andrew Wolfenden, Nat Dip Aquatics

Animal Supplies Manager

Anthony Hutchinson

Animal Supplies Coordinator

Kevin Whitehead

Animal Supplies Staff

Paul Bebbington, Dip Anim Mgt

Graeme Edwards

Ken Newey

Mark Wylie

Pest Controller

Colin Humphries*

General Curator: Botany and Horticulture

Mark Sparrow, Kew Dip Hort, CGLI Hort

Team Leaders, Botanical Horticulture

Mark Hargreaves, NVQ2

Paul Shippides, Kew Dip Hort

Botany and Horticulture Staff

Scott Ashton, NVQ2&3

Keith Done, NVQ2

Wesley Evans, RHS general

John Fletcher, RHS general

Richard Hewitt, CGLI, NCH, NVQ4

Mathew Jenkins, RHS general

Paul Leach, NVQ2

Kevin McGinty, RHS general

Ray Newey, NVQ2

Clive Roe, NCH

Estates Division

Estate Engineer and Head of Division

Steve O'Brien, BSc, Dip SURV, HNC

Divisional Secretary

Tracey Bryan

Architectural Building Technician

Mike Halls, ONC Bldg Const.

Project Managers

Anthony Izzard, HND, OND, CGLI

Alex Robertson, BA HONS, Dip ARCH,

ARIBA #

Maintenance Manager

Ray Morrison, AIMBM, CGLI, NVQ3

Foreman, Building and Civil

Anthony Ankers, INBN, ONC,

CGLI advanced

Foreman, Mechanical and Electrical

Brian Goss, CGLI

Maintenance

Ian Blythe

Paul Curtis, HNC, NVQ3
 Keith Horner
 Graham Humphreys
 Denis Kinsella, CGLI
 Neville Lowndes
 Bernard McCone, CGLI
 Kevin McDonagh
 Steve Nall
 Richard Read, COSIRA
 Mark Roberts, CGLI
 Jason Spencer, NVQ3
Site Supervisor
 Peter Owens
Safety and Environment Manager
 John Winward, AIOSH
Facilities and Security Manager
 Marc Boardman
Security Officers and First Aid Staff
 Christine Coleman
 Mervyn Garside
 Steve Gilyeat
 Michael Lowe
 Michael Nesbitt

Marketing and Development Division

Head of Marketing
 Sharon Leeson, BA (Hons)
 Rowena Allen (Interim)
 Alison Gillbody (Interim)
Public Relations Officer
 Rachael Ashton
 Debbie Ledsham (Interim)
Media Coordinator
 Julie Parker, BA (Hons)
Tourism Coordinator
 Julie Benn, BA (Hons)
Development Manager
 Melanie Cowieson, BA
Assistant Development Manager
 Lynsey Jones, BA, LCGI
Development Coordinator
 Sarah McDonnell
Development Assistant
 Lauren Evans
Marketing Assistant
 Martha McKinley, BA (Hons)
 Natalie Stokes
Development Associate
 Sarah Molyneaux (Volunteer)
Customer Relations Manager
 Martin Fletcher
Membership and Adoptions Assistant
 Susan Watson

Visitor Services Division

Visitor Services Manager and Head of Division
 Liz Child, BA
Divisional Secretary
 Fiona Burdsall
Events Manager
 Jane Lawson
Events Assistant
 Sharon Mottram*
General Catering Manager
 Sue Clews^
Team Leaders
 Johanna Glossop^
 Richard Jobson, BA^
 Debbie McLeod^
 Jackie McLinden^
 Ian Patten^
Chefs
 Liam Adamson, CGLI^
 Mark Conlan, NVQ II^
 David Evans
 Elaine Griffiths, NVQ II^
 Kelly Livesley NVQ II^
Trainee Chefs
 Andrea Coleman
 Richard Pearson^
Senior Catering
 Penny Armsrong^
 Dee Jones^
 Brian Nicholls^
 John McNeill
General Catering
 Oliver Atkinson*
 Penny Armstrong^
 Jean Antrobus^
 Luke Bateson*
 Lee Boylin*
 Steven Brown
 Daniel Carroll*
 Paul Clayton^^
 Claire Davies^
 Craig Degroote*
 Robert Franks*
 Jessica Hall*
 Carol Jones
 Marina Jones*
 Laura Kerr^
 Kirsty Langton
 Ian Lloyd*
 Andrew Mapp^
 Claire McEwan*
 Pat McRobbie^
 Val Owen
 Sandra Port^
 Robert Salisbury^^
 Chas Shakespeare*
 Ashley Stocking
 Pauline Wainwright^
 Diane Williams^
Catering Stores Coordinators
 Mark Fallon, NVQ3
 Brendan O'Brien

Catering Stores

Kenneth Davies
 Laurence Littler
Amenity and Gardens Manager
 Chris Williams, CGLI Hort
Amenity and Gardens Team Leaders
 Mark Hughes
 Peter Hughes
 Darren Peach
 Peter Thompson
Amenity and Gardens Staff
 Eric Bickley
 Stephen Burdsall
 Eamon Canning
 Janet Cullen*
 Allan Davies *
 Hazel Dean*
 Ken Doughty*
 John Farey
 Tony Fisher
 John Green
 Paul Harrison, NVQ2
 Cyril Jones
 Mark Jones
 Malcolm Lloyd
 Julie Lomath*
 Al Millington, NVQ2
 George O'Connor
 Peter Powell
 Peter Quayle
 Geraint Roberts*
 John Stanton
 Derek Toms
 James Whitty*
 Sylvia Whitty*
 Christopher Woodall
Retail Sales Manager
 Alan Jones
Assistant Retail Sales Manager
 Susanne Jones
Buyer and Retail Team Leader
 Celia Long
Retail Sales Assistants
 Janet Alldis
 Matthew Bell
 Helena Broster
 Elaine Bunn
 Jason Dagnall
 Daniel Evans
 Michelle Harrickie*
 Alison Hughes*
 Andrew Hughes
 Fay Hughes*
 Katie Nelson
 Bill Robson
 Nick Taylor
 Chris Walton*
 Stuart Whitehouse
Job Relativities Committee
 Chris Capner
 Celia Long
 Chas MacKenzie
 Darren Paech
 Mark Pilgrim
 Jayne Quinn
 Chris Williams

Committee or Representatives for Employee Safety (CRES)

Committee Chairman
 Susanne Jones
Members
 Mark Cleave
 Sue Clews
 Peter Owens
 Mark Powleson
 Chris Williams

2003 Staff Association

Chairman and representing Finance/Admin/Marketing
 Christine Capner
Vice Chairman and Retail
 Celia Long
Keepers
 Stefan Groeneveld
 Simon Marsh
 Kevin Whitehead
Maintenance
 Jason Spencer
Amenities and Gardens
 Eric Bickley
Catering
 Brendan O'Brien
Botany and Horticulture
 Richard Hewitt

Leavers

Chloe Aldridge
 Rowena Allen
 Luke Bateson
 Kris Beaumont
 Jonas Berthe
 Rachel Bestwick
 Ian Bodsworth
 David Burrows
 Philip Capner
 Caroline Davies
 Rachel Farr
 Martin Fletcher
 Alison Gilbody
 Gwyn Hewitt
 Richard Hoddinott
 Stephen Kelleher
 Anthony Lennon
 Paul Lindop
 Sarah McDonnell
 Pauline McKee
 John Mackenzie
 Nicola Magee
 Craig Murray
 Gareth Redston
 Christopher Shenton
 Stephanie Wehnelt
Retired 2005
 Ray Packwood

* part-time
 + dual responsibility
 # contract staff
 ^ occupational qualification



Alan Sykes

Head of Finance and
Company Secretary

Finance and Administration Division

Summary Accounts are presented on pages 57 to 59 of this Review, with a commentary thereon in the Financial Report on pages 55 to 56.

Finance and Administration Functions

- Financial accounting
- Payroll and pensions
- Management information and budgeting
- Internal audit control systems
- Risk management
- Visitor admissions and cash processing
- Information Technology (IT) and communications
- Company Secretarial and administration
- Insurance

Charity Commission

The Charity Commission undertook a very constructive *Review of the Society* during the year, focusing on governance issues, and the impact of the outcomes it achieves.

The tighter regulation introduced in the Pensions Act 2004 has necessitated even more time and attention to administering the *Society's Pension Fund*. A review of insurance provision was undertaken during the year which resulted in both a more streamlined claims administration process and substantial saving in premiums.

Front of House

The Front of House team has had another highly successful year, both by increasing the take up by visitors of Gift Aiding their admission monies and by encouraging them to make more Elective Donations on entering the Zoo. Unfortunately, changes introduced in the Finance Act 2004 will make this process more difficult from April 2006 and substantial efforts will be needed to maximise the reduced potential thereafter. This department has been transferred to the Visitor Services Division in the recent management structure reorganisation (p.8) and I am confident that Head of Visitor Services Liz Child will provide the leadership and support to achieve this.

Payroll

In the Wages department, a new time and attendance system has been introduced. This not only records arrival and departure times, (through biometric scans) but now also calculates the hours payable. It will also be used to create work rosters and to compare scheduled and actual time worked. As wage costs comprise about one-half of all revenue payments, this system is expected to prove very valuable. This department has been transferred to the Personnel Division in the recent management structure reorganisation, in the competent hands of Jayne Quinn.



Philip Morris
Information Technology
Manager

Information Technology

2005 was a busy year for IT and saw the culmination of electronic communication plans and strategies developed in the previous year.

Network Storage and redundancy

Centralised network attached storage (NAS) now provides a robust storage area that is available when servers are off line. We duplicated the NAS and created a mirror of our data that are continuously available. Should one area develop a problem the other substitutes, without interruption of service.

Upgrade to tills software

Much of the present Electronic Point of Sale (EPOS) system was replaced with a newer version. In addition to improved performance, large savings were made in maintenance costs. This programme of upgrade will continue in 2006 when the tills at the front entrance will be replaced.

IT Backup System

The complete IT backup system was replaced this year, improving security and speed of recovery.

Dual Channel ADSL

Internet bandwidth became increasingly saturated in 2004. Doubling up on the broadband (ADSL) lines improved performance and fault tolerance.

Wireless LAN

A comprehensive proposal for a computerised local area network (Wireless LAN) was developed and vendors were asked to trial their systems, with a role-out planned for the selected system in early 2006. Fundamentally, the wireless LAN is an enabler for other technologies such as 'queue-busting' tills and donor collection points.

AV refurbishment of lecture hall

The audio-visual equipment in the lecture hall was replaced with a state-of-the-art system and offers big improvements in quality and ease of use. This makes the lecture hall venue far more effective in communicating our mission through a series of scientific and educational lectures; and also for commercial hire to supplement the Society's income.

Photo Identification System

To improve security, a Photo Identification system was developed and implemented for the membership cards. The new system has been in place for over six months in 2005 and is the first step in developing more advanced business and marketing systems, including a loyalty card.

New staff

The arrival of IT apprentice Andrea Byrne has enabled us to provide seven day cover on the Society's computerised systems. This is particularly valuable because so many of the Zoo's cash management systems, tills and other devices, are now electronically controlled and tend to be at their busiest – and so most vulnerable to technical problems – at weekends.

The recruitment of Systems Developer Mattie Griffin is providing us, for the first time, with the opportunity to integrate some of the different databases held on the Society's computers and enable us to analyse and learn from the management information held. New programmes are now being developed to deal with the complex new IT challenges of 2006.

Presidency Council

President



His Grace, the Duke of Westminster
KG, OBE, TD, DL

The 6th Duke continues the long-standing tradition of Grosvenor family support for the Society.

Vice President



The Right Honourable Lord Wade
of Chorlton

A Life Peer and enthusiastic supporter of the Society. Former Cheshire County Councillor and Past Chairman of the Cheshire Heritage Trust and Rural Economy Group.

Vice President



The Honourable Mrs A Margaret Jane
Heber-Percy

Wife of Algemon Heber-Percy JP, HM Lord Lieutenant for Shropshire and daughter of our former Vice President, the late Viscount Leverhulme, thus continuing the strong Lever family association with the Society.

Chairman of Council



Tony Williams

After a long career as a senior executive in financial services with a major Chester-based bank, Tony now runs a successful business consultancy with his wife, Diane.

Vice Chairman of Council



Prof Peter Wheeler
BSc, PhD

Dean of Faculty of Biological & Earth Sciences of Liverpool John Moores University. Research specialism in animal physiology.

Council Members



Prof Malcolm Bennett
BVSc, PhD, MRCVS, MRCPATH,
DipECVPH

Head of the Department of Veterinary Pathology at Leahurst, the University of Liverpool's Veterinary School, Wirral.



Neville Chamberlain
MSc, CBE

Past Chairman of Urenco Ltd, Chairman of the Manufacturing Institute, and of the Cheshire and Warrington Economic Alliance and also Environlink NW. Past Board Member Northwest Development Agency.



Brian Child

Recently retired after a long career with McCann-Erickson (Europe). Brian was also Chief Operations Officer of the UK's largest advertising agency group. Interests in international Zoo marketing.



Dr Caroline Evans
BSc, PhD

Lecturer in Pathology for 15 years at the University of Manchester. Special interests in cell biology and zoo breeding programmes. Committee member for six years of the Institute of Biology. Concerned to inform and educate the public about wildlife.



Chris Mahon
BSc, MSc

Director of the Cheshire Wildlife Trust. Vice Chairman of the Local Strategic Biodiversity Partnership. Chairman of the Sustainable Cheshire Forum. Chairman of Fauna & Flora International in the North West.



Robert Mee
FCIB

Former Divisional Chief Executive for Bank of Scotland.



Dr Jeremy Playfer
MD, FRCP

Consultant physician and Honorary Clinical Lecturer specialising in geriatric medicine. President, British Geriatrics Society.



Dr Judith Skeritt
BSc, PhD

Former Head of Science Faculty and lecturer in mathematics and physics at Marionopolis College, Montreal, Canada. Currently a Principal Veterinary Practise Executive in the North West.



David Wall

IT specialist with Formal Men's Wear Manufacturer. Elephant enthusiast. Organised very successful fundraising for the Zoo through recycling.



Alan Watson
FCIB

Agent of Manchester Branch of the Bank of England until retirement.

Council Committees

Council has delegated aspects of its powers to committees, consisting of some of its members, relevant staff and other advisors. The committees report to the full Council on matters that require the knowledge or approval of full Council which also receives copies of the minutes of all committee meetings.

Animal Welfare, Conservation and Scientific Committee

Monitors animal husbandry, welfare and veterinary care. Advises on exhibition and conservation policy and on scientific and health and safety matters.

Members

Prof Peter Wheeler
Chairman
Prof Malcolm Bennett
Deputy Chair
Dr Caroline Evans
Mr Chris Mahon

Advisors

Dr Filippo Aureli
Dr Julian Chantrey
Mr Jeremy Playfer
Mr Brian Coles
Mr Derek Lyon

Staff

Prof Gordon McGregor Reid
Director General
Kevin Buley
Dr Andrea Fidgett
Dr Sonya Hill
Anthony Hutchinson
Mike Jordan
Mark Pilgrim
Penny Rudd
Stephanie Sanderson
Mark Sparrow
Steve Unwin
Dr Roger Wilkinson
John Winward
Alexandra Zimmerman
Karen King-Sharp
Secretary

Education Committee

Acts as a forum for discussion and advancement of education policy in both the formal, academic sector and informal, visitor-directed areas. Advises on membership policy. Responsible for talks and other events chiefly for members and adopters, within the general remit of enhancing the Society's status as a forum for communication and debate on conservational, biological and related scientific and educational topics.

Members

Judith Skeritt
Chairman
Dr Caroline Evans
Deputy Chair
Prof Malcolm Bennett

Advisors

Brian Coles
Derek Lyon

Staff

Prof Gordon McGregor Reid
Director General
Sharon Leeson
Stephen McKeown
Mark Pilgrim
Alan Woodward
Kate Brankin
Secretary

Remuneration Committee

Determines remuneration and conditions of service for the Directors, Heads of Division and other key executives.

Members

Tony Williams
Chairman

Prof Peter Wheeler
Vice Chairman

Alan Watson
Chairman of Finance and Personnel Committee

Staff

Prof Gordon McGregor Reid
Director General

Finance and Personnel Committee

Has prime responsibility for advising council on all financial and personnel matters in accordance with the Society's Mission; and for acting as a 'sounding board' for the executive on all such issues.

Members

Alan Watson
Chairman
Robert Mee
Deputy Chair
Neville Chamberlain
Tony Williams

Advisor

Hamilton Howatt

Staff

Prof Gordon McGregor Reid
Director General
Jill Barnard-Blom
Richard Barnett
Mark Pilgrim
Jayne Quinn
Liz Child
Sharon Leeson
Alan Sykes
Emma Purdie
Secretary

Pension Fund Trustees

Ensures the superannuation fund scheme is managed in accordance with its Trust Deed. While this is not a formal council committee, it advises Council on Pension policy.

Trustees

Michael Johnson
Chairman
Robert Mee
John Makinson
Richard Barnett
Jayne Quinn
Alan Sykes.

Actuary

Bill Bowman
Mercer Human Resource Consulting

Trusts, Grants, Sponsorship and Donations

Our vital work in conservation, education, science, sustainability and tourism would not be possible without the help and support of our many partners and financial donors. In excess of £750,000 was raised in this way for the Society. Our warm thanks go to all of our supporters small and large and, in particular, to the following major donors in 2005.

The Arts Council of England
Asda
Philip Barker Charitable Trust
Dr. Stephen Baxter
The William Dean Countryside & Educational Trust
The Granada Foundation
Duchy of Lancaster Benevolent Fund
Eric and Dorothy Leach Charitable Trust
Baroness Ruth Rendell of Babergh CBE
Marks & Spencer Money (pictured below)
The Ruth Smart Foundation



Financial Report

Due to a change in legislation in October 2005, we are now able to issue in this Chester Zoo Review group summary financial statements (see pages 57 to 59) instead of the full statutory accounts.

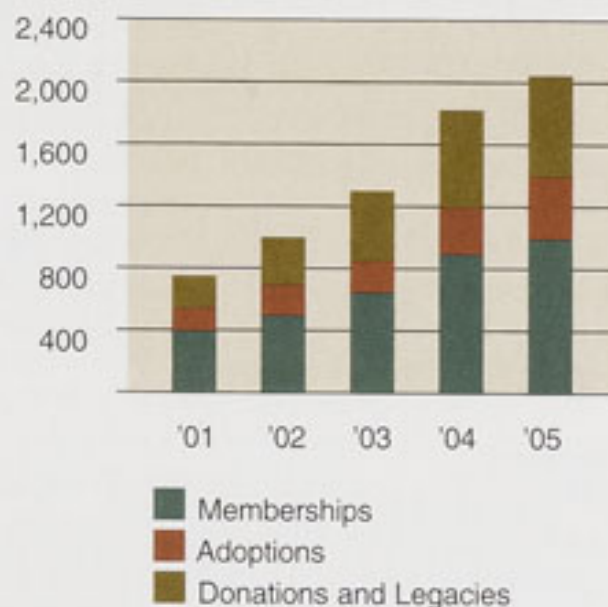
This means simpler, shorter and more easily understood financial information for Members. The full Annual Report and accounts will continue to be published on the Society's website (www.chesterzoo.org). Members will continue to be able to receive a printed copy, free of charge, if they elect to do so.

Financial analysis

Visitor-related activities in furtherance of the charity's objectives produced a surplus of £9,123,000 (2004: £8,885,000), an increase of 2.7%, despite a 6.2% reduction in visitor numbers compared to 2004. These principally comprise visitor admissions to the zoo, monorail and waterbus rides, and sales of guides. The net income of the trading subsidiary was £73,000 (2004: £137,000) from catering and retail activities after allowing for management charges and property rents paid to the parent company.

Donations, legacies and similar incoming resources (which includes members' subscriptions and animal adoptions) increased to £2,076,000 (2004: £1,802,000 plus project development grants received of £387,000).

Development Income (£000's)

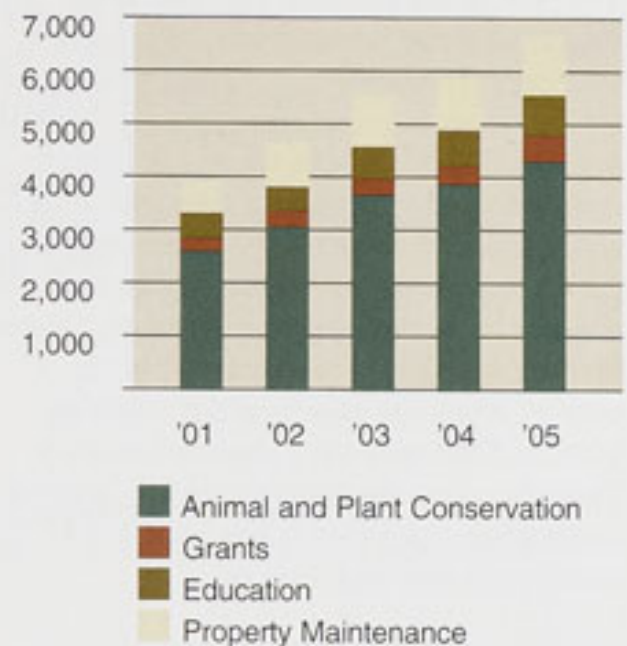


Restricted donations include £341,000 (2004: £365,000) for the *Realm of the Red Ape* and *Asian Elephant Survival* campaigns, given by a substantial proportion of our adult visitors who are asked, on arrival at the zoo, to donate a pound to this appeal in addition to the admission charge.

In 2005 the Society received a further £166,000, in addition to the £7,509,000 accounted for in 2004, following the acceptance by the Customs & Excise that our admission fees may be treated as exempt from VAT. However, ongoing discussions with the Customs & Excise might cause this repayment to be adjusted, but this cannot be quantified. As a consequence of this partial exemption to VAT, a proportion of the 'Input VAT', £765,000 (2004: £567,000) that the Society could previously offset against the VAT paid is now irrecoverable.

Direct charitable expenditure, principally animal and plant conservation, increased to £5,990,000 (2004: £5,811,000). Grants payable in furtherance of the charity's objectives (principally for outreach activities) were a further £476,000 (2004: £395,000). This represents a 7.9% increase in the Society's charitable activities for the year, continuing an annualised expansion of 12.9% over the past 4 years.

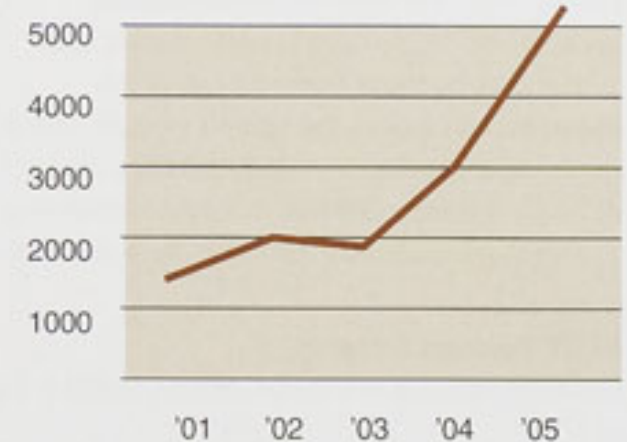
Direct Charitable Expenditure (£000's)



Fund raising and publicity costs, which include the marketing and promotional advertising of the zoo, were £983,000 (2004: £846,000).

Net incoming resources for the year, were £2,432,000 (2004: £10,160,000, including the VAT recovery) which increased the accumulated funds carried forward to £23,257,000 (2004, as restated: £21,081,000).

Net Capital Expenditure (£000's)



The net cash inflow from net incoming resources was £5,743,000, (2004: £7,700,000). This was utilised to fund net capital expenditure of £5,101,000 (2004: £3,032,000) causing a net increase in cash over the year of £1,189,000 (2004: £4,919,000).

Financial Report (continued)

Pension costs

This year, for the first time, the deficit in the Society's pension fund has been recognised in the Financial Statements. The actuary calculated the net liability of the scheme at the start of 2005 to be £2,116,000. Despite having made special contributions of £170,000 per year since 2003 in accordance with the actuary's recommendations, the funding position has worsened due to adverse changes in the assumptions used to calculate the liabilities, in particular the discount rate, net of inflation, which has fallen from 3.50% in Dec 2001, to 2.08% over the 4 years to Dec 2005. This is based on the yield on long term corporate bonds which has generally been declining in recent years (see graph below).

The calculated liabilities of the scheme are very sensitive to small changes in this yield: approximately £200,000 per 0.1% variation (and movements of 0.1% to 0.2% frequently occur within a single month). The new Reporting Standard is good in that it emphasizes the pension fund deficit as a liability of the Society, albeit deferred, spread over the lifetimes of all the staff; but the volatility of the deficit, resulting from its reliance on the day to day fluctuations of bond yields, needs to be recognised.

During 2005, the high investment returns achieved by the pension scheme assets were outweighed by the adverse impact of the assumptions used by the actuary and the deficit would have increased to £2,415,000 by the end of 2005. However Council, in a demonstration of its continued support of the scheme, authorised

the payment of a further £1,500,000 special contribution which reduced the deficit to £915,000.

In 2006 the Actuary is undertaking his full triennial valuation of the scheme. He has advised that it will be necessary to revise the mortality assumptions he uses to reflect the fact that as people live and receive their pensions for longer than they used to, so the cost of providing those pensions increases. This change is expected to significantly increase the deficit.

Reserves

The Society needs to have regard to its substantial continuing commitments, in terms of staffing and its ongoing charitable objectives, and to the difficulty of predicting its income, which is very much dependant on visitor numbers and the factors that affect their decision to come to the zoo. Council therefore considers that reserves should be maintained, of unrestricted funds that are freely available for its general purposes, of up to 1 year's general expenditure. The Society's reserves at 31 December 2005, as defined above, were 44.6% of total unrestricted resources expended in 2005 (2004: 58.5%).

Gift Aid and 'Elective pound' donations

Since 2001, as a wildlife conservation charity, our ability to claim *Gift Aid* on donations given by day visitors to the zoo in lieu of admission charges has been very valuable. But, from April, the Government is changing the rules and we shall only be able to recover *Gift Aid* if visitors donate 10% more than the admission price they would otherwise pay. In 2005 £1,386,000 was recovered

in *Gift Aid* from day visitors and this income is greatly threatened as a result of the change so we are working hard to minimise the impact in 2006.

For the past 2 years we have been inviting our adult visitors to donate an 'Elective Pound' in addition to their admission fee and we have been gratified that last year over 290,000 chose to do so. From April 2006, to comply with the revised *Gift Aid* legislation, we shall be asking all our visitors to give an extra 10% and we shall only be able to recover *Gift Aid* from those that do so.

Manifesto for Zoos

The predicted detrimental impact of this change on our income and that of the other charitable zoos spurred a consortium of UK zoos to produce a report entitled "The Manifesto for Zoos" which has been presented to the Chancellor of the Exchequer. This calls on the Government:

- To recognise more fully the enormous social, cultural, community, educational and economic impact of zoos on the British public.
- To recognise that the duration of the previous *Gift Aid* system has provided the only period in UK zoo history when it has been possible for the charitable zoos to develop and extend their social, educational and environmental deliveries, and that the severing of that support will set back those admirable outcomes; and hence to provide other fiscal measures to help to underwrite their continued delivery.
- To instigate ongoing dialogue between Government and the zoos at a higher level than in the past, to explore how they can work more closely together on issues of clear mutual interest.

While initial indications are that the report has been received sympathetically, we await a formal response to the submission.

NEZS Pension Scheme

Discount rate, net of inflation January 2002 to December 2005



Group Summary Financial Statements

Council's Statement accompanying the Group Summary Financial Statements

These group summary financial statements are not the statutory accounts but a summary of information relating to the consolidated statement of financial activities, consolidated statement of recognised gains and losses, consolidated balance sheet and consolidated cash flow statement for the year ended 31 December 2005. They may not contain sufficient information to allow a full understanding of the financial affairs of the charity. For further information the Society's annual report and accounts should be consulted which is available on the Society's website (www.chesterzoo.org). Printed copies can be obtained from the Company Secretary at The North of England Zoological Society, Cedar House, Zoological Gardens, Caughall Road, Upton by Chester, Chester, CH2 1LH.

The full Council report and financial statements from which the group summary financial statements are derived have been externally examined by PricewaterhouseCoopers LLP and their audit report on them is unqualified. The full Council report and financial statements were approved by the Council on 31 March 2006 and will be submitted to the Charity Commission and the Registrar of Companies.

Signed on behalf of Council on 31 March 2006

Alan Sykes

Company Secretary

Independent auditors' statement to the members of The North of England Zoological Society

We have examined the group summary financial statements of The North of England Zoological Society for the year ended 31 December 2005.

Respective responsibilities of trustees and auditors

The trustees, who are also directors of the company for the purpose of company law, are responsible for preparing the summarised annual report in accordance with applicable law. Our responsibility is to report to you our opinion on the consistency of the summary financial statement within the summarised annual report with the annual financial statements, the trustees' report and its compliance with the relevant requirements of Section 251 of the Companies Act 1985 and the regulations made there under.

We also read the other information contained in the summarised annual report and consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the summary financial statement.

This statement, including the opinion, has been prepared for and only for the company's members as a body in accordance with Section 251 of the Companies Act 1985 and for no other purpose. We do not, in giving this opinion, accept or assume responsibility for any other purpose or to any other person to whom this statement is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Basis of audit opinion

We conducted our work in accordance with bulletin 1999/6, 'The auditors' statement on the summary financial statement' issued by the Auditing Practices Board for use in the United Kingdom.

Opinion

In our opinion the group summary financial statements are consistent with the annual financial statements, Council's report of The North of England Zoological Society for the year ended 31 December 2005 and comply with the applicable requirements of Section 251 of the Companies Act 1985, and the regulations made there under.

PricewaterhouseCoopers LLP

*Chartered Accountants and Registered Auditors
Liverpool, 31 March 2006*

Group Summary Financial Statements (continued)

Summary consolidated statement of financial activities for the year ended 31 December 2005

	2005		2004	
	£'000		(as restated) £'000	
Incoming resources				
Operating activities in furtherance of the charity's objects				
Visitor admissions	10,233		9,817	
Monorail and boats	454		414	
Guides and other	290	10,977	380	10,611
Operating activities for generating funds – trading by subsidiary company				
Catering	3,054		3,057	
Shops	2,065	5,119	2,191	5,248
Donations, legacies and similar incoming resources				
Members' subscriptions	1,040		855	
Animal adoptions	283		268	
Donations and legacies	753		679	
Grants	–	2,076	387	2,189
Investment income and other incoming resources				
Interest and investment income received	550		252	
Property rents received, external	84		78	
Profit on sale of fixed assets	9		8	
Recovery of Value Added Tax	166	809	7,509	7,847
Total incoming resources		18,981		25,895
Resources expended				
Charitable expenditure				
Costs of activities in furtherance of the charity's objects				
Visitor related expenditure				
Visitor admissions	1,749		1,566	
Monorail and boats	30		60	
Guides and other	75	1,854	100	1,726
Direct charitable expenditure				
Animal and plant conservation	4,328		3,946	
Education	612		607	
Property maintenance	1,050		935	
Feasibility study	–	5,990	323	5,811
Grants payable in furtherance of the charity's objects		7,844		7,537
Support costs		476		395
Cost of management and administration of the charity		1,523		1,332
Interest payable	3		1	
Bank commissions	70		63	
Expenses associated with property rents received	55		107	
Apportionment of management time and overhead cost	854		857	
Net finance cost of pension fund	44		30	
Court fine	–	1,026	25	1,083
Total Charitable expenditure		10,869		10,347
Costs of activities for generating funds				
Trading by subsidiary company				
Catering	2,506		2,495	
Shops	1,426	3,932	1,480	3,975
Fund raising and publicity		983		846
Total costs of activities for generating funds		4,915		4,821
Irrecoverable VAT		765		567
Total resources expended		16,549		15,735
Net income for the year before other recognised gains and losses		2,432		10,160
Actuarial loss on defined benefit pension scheme		(258)		(328)
Net movement in funds		2,174		9,832
Prior year adjustment – resources expended, recognition of pension liability		(2,116)		–
Total gains and losses recognised since last Annual Report		58		9,832

Summary consolidated balance sheet as at 31 December 2005

2004 restated) £'000	2005 £'000	2004 (as restated) £'000
	Fixed assets	
	Tangible assets	
	Cost	18,434
	Depreciation	7,387
10,611	Net Book Value	11,047
	Current assets	
5,248	Stocks	338
	Debtors	4,505
	Cash at bank and in hand	9,005
		13,848
	Creditors: amounts falling due within one year	1,698
2,189	Net current assets	12,150
	Total assets less current liabilities	23,197
7,847	Net assets before pension liability	23,197
25,895	Net pension liability	(2,116)
	Net assets	21,081
	Funds employed	
	Income funds – restricted	1,239
	Income funds – unrestricted	
1,726	Designated funds	6,784
	Other charitable funds	13,058
		19,842
	Total funds employed	21,081

Summary group cashflow statement for the year ended 31 December 2005

2004 restated) £'000	2005 £'000	2004 £'000
	Net incoming resources	10,160
	Depreciation charges	1,708
	Payment into pension scheme	–
	Changes in assets and liabilities	(3,846)
	Other non-cash movements within net incoming resources	(322)
1,083	Net cash inflow from net incoming resources	7,700
10,347	Net interest received	251
	Payments to acquire tangible fixed assets (net of disposals)	(3,032)
	Increase in net cash in the year	4,919

3,975
846
4,821
567
15,735

10,160
(328)
9,832
–
9,832

Chester Zoo
Upton-by-Chester
Chester CH2 1LH
Tel 01244 380280
Fax 01244 371273
Email info@chesterzoo.co.uk
Web www.chesterzoo.org

Founded in 1934, the North of England Zoological Society is a registered charity and receives no government funding. We need your help and we welcome support to raise funds for the care and conservation of our rare animals in Chester Zoo and endangered species across the world.

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10



