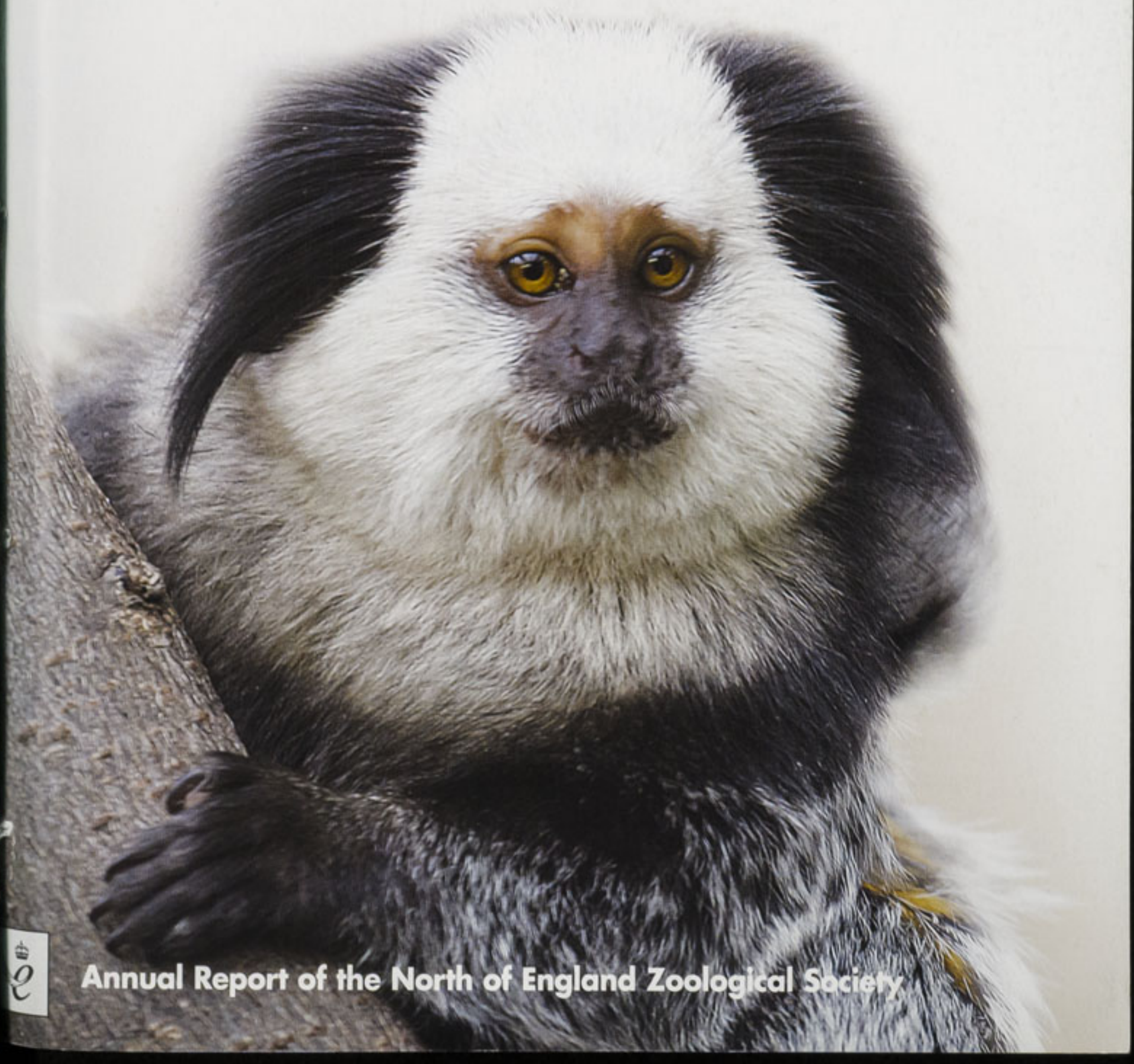
ZOOLOGICAL GARDENS
CHESTER

Chester Zoo Review

2004



Annual Report of the North of England Zoological Society

Welcome to the Annual Report of the North of England Zoological Society

This report explains the progress, achievements and challenges of the Society in relation to our conservation mission during the business year of 2004.

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.

World Association of Zoos and Aquariums

IUCN
The World Conservation Union

Conservation Breeding Specialist Group

EAZA
European Association of Zoos and Aquaria

J.M.S.P.
Joint Management of Species Programmes

WWF
World Wildlife Fund

International Species Information System

European Union of Aquarium Curators

BIAZA
British & Irish Association of Zoos & Aquariums

WILDLIFE CONSERVATION SOCIETY
Wildlife Conservation Society, New York

eco SYSTEMS INDIA
Eco Systems India

Fauna & Flora International

ENGLISH NATURE
English Nature

The Wildlife Trusts Cheshire

SAVE THE RHINO
www.savetherhino.org
Save the Rhino

KENYA WILDLIFE SERVICE
Kenya Wildlife Service

European Zoo Educators

International Zoo Educators

University of Liverpool

JMU
Liverpool John Moores University

UCL
University College London

the MANCHESTER METROPOLITAN UNIVERSITY
Manchester Metropolitan University

ALVA
ASSOCIATION OF LEADING VISITOR ATTRACTIONS
Association of Leading Visitor Attractions

cwtb
cheshire and warrington tourism board
Cheshire & Warrington Tourism Board

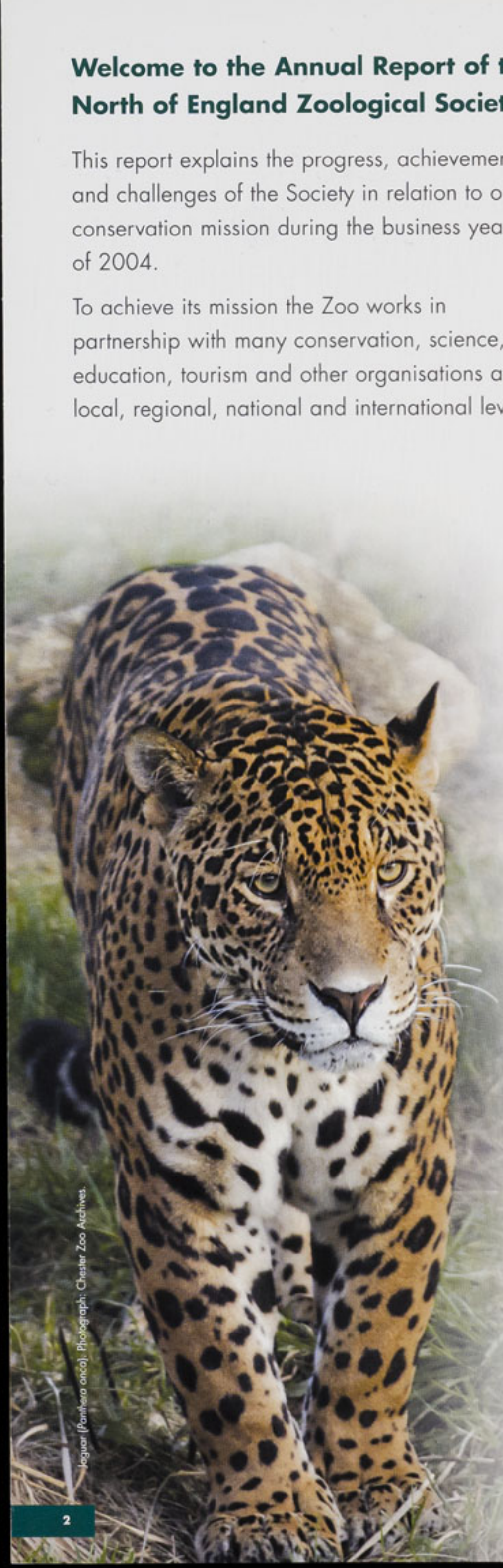
Cheshire & Warrington Economic Alliance

LIVERPOOL
the world in one city
Capital of Culture 2008

NORTH WEST TOURIST BOARD
North West Tourist Board

NATIONAL MUSEUMS LIVERPOOL
National Museums Liverpool

Northwest
REGIONAL DEVELOPMENT AGENCY
Northwest Regional Development Agency



Jaguar (*Panthera onca*). Photograph: Chester Zoo Archives.

Cover Photograph Geoffroy's Marmoset (*Callithrix geoffroyi*). Photograph: Chester Zoo Archives

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Sumatran Orang-utan (Pongo abelii). Photograph: Chester Zoo Archives.

Awards held by Chester Zoo in 2004

- **International Species Information System (ISIS)**
  Following a global audit of the computerised system, Chester Zoo has been identified as uniquely having the *best data standards in the world for animal record keeping.*

- **International Environmental Management Accreditation (ISO14001)**
  Chester is the first UK zoo and the second European zoo to attain this international standard.

- **UK Environmental Management Standard (BS8555)**

- **Sandford Award for Heritage Education**
  In recognition of the *excellence of provision of educational programmes.* Chester is the first zoo to gain this prestigious award.

- **Positive Action Award Northwest**
  In recognition of the excellent provision made for *disability access within the Zoo.* Northwest Development Agency

- **British & Irish Association of Zoos & Aquariums**
  Research Award for a study carried out on the *behaviour and welfare of Orang-utans.*

- **British & Irish Association of Zoos & Aquariums**
  Marketing Award for the Zoo's elective pound campaign to raise funds for the *Asian Elephant Survival Appeal.*

- **British & Irish Association of Zoos & Aquariums**
  Conservation Award – commendation for the *reintroduction project for Harvest Mice.*

- **British & Irish Association of Zoos & Aquariums**
  Sustained Breeding Award – commendation for *Yellow Seahorse breeding programme.*

- **European Association of Zoos and Aquaria**
  Platinum and additional Bronze and Silver awards for *Tiger Conservation Fundraising.*

- **Bonn Orchid Festival, Germany**
  Rare Orchid Prize

Awards received from BIAZA

- **Tatton Flower Show**
  Bronze medal - in partneship with English Nature - in the *Back to Back Garden* category for *Tomorrow's Garden for Wildlife.*

- **Chester in Bloom**
  Best Tourist Attraction.

- **North West in Bloom**
  Best Tourist Attraction.

- **Landscape Skills Competition**
  North West Winner and Second in national finals.

- **Queens Award for Enterprise (Sustainable Development)**

Zoological Gardens Team with their trophies. Photograph: Chester Zoo Archives.

Chairman's Report

Tony Williams
Chairman

Welcome to our new-look, colourful Annual Report. The first section describes how we work together as a team to accomplish our mission, followed by an insight into the many business functions which help make that happen. The Society's governance, management structure and its people follow – and you will find our formal financial reports at the back of the publication.

In the year that we celebrate our 70th anniversary, the Society has continued to go from strength-to-strength. Many of the staff have taken part in national and international conferences and sit on a number of zoological bodies. Here, we are able to participate and, in many cases, influence the thinking and direction of the wider world of conservation, education and science. Our standing as a major player has been recognised by the appointment of the Director, Professor Gordon McGregor Reid, as the President Elect of the World Association of Zoos and Aquariums (WAZA). This is indeed a great honour and one that illustrates the tremendous international reputation that the Society has developed.

Among other honours, Professor Reid has also received the 'keys to the city' of La Paz, Bolivia and been made an Honorary Member of the Bolivian College of Veterinary Medicine following his visit to the country in September, which he refers to on the next page.

We have continued with the development of our outreach programmes and as such are now recognised as a centre of excellence in the fields of biodiversity and conservation. This has enabled us to offer consultancy services to many national and international organisations who call upon our expertise to assist them with their own projects.

It is important that the Society develops such relationships, and we are particularly concerned to work hard at building partnerships with many organisations in our region and within the city. These partnerships will not only enhance the Society's standing, but can have a beneficial effect on the region as a whole.

Our successes during the year have not been confined to the zoological world. In October 2004, after a rigorous audit by an external independent body, the Society was awarded full ISO 14001 accreditation for its environmental management. We are the first UK Zoo and only the second European Zoo to attain this international standard: and it reflects the Society's mission in conservation and sustainability. As the Society grows, the management of its operation becomes more complex and the executive team are aware of the many legislative demands that now fall upon them. Looking to the future, they are now taking steps to reach an operational standard that would enable them to achieve ISO 18001 for Health and Safety – an area that is taken extremely seriously by all staff working within the Society.

I am happy to report that the Society has a sound financial base. Our income is almost entirely dependent on our visitors. In spite of the somewhat inclement weather this year, the number of visitors has been extremely good and at least 25% higher than other UK wildlife attractions. This strong financial position has enabled us to put in place many exciting development plans for the coming year. These will not only enhance the visitor experience but will also enable us to provide a higher standard of care for many of our endangered species. However, we must not get complacent about prosperity. Members of the Zoo Council fully acknowledge their responsibility with respect to financial governance of the Society and continue to monitor the development plans to ensure well managed and sustainable growth.

This year has seen some difficult times with the court case which was resolved in November after a long delay. We are pleased for everyone who has been affected that there can now be some closure after almost four years; and our thoughts are very much with Richard Hughes' family, friends and colleagues.

Finally, I would like to acknowledge the retirement of my predecessor, John Makinson. John is well known to many of the Society's members. The enthusiasm and dedication with which he fulfilled his role as Chairman was evident to us all. On behalf of the staff and Council I would like to thank John for his tremendous contribution to the Society during his term of office.

Sundara & Tungal Asian Elephants (Elepahas maximus) Born 2004. Photograph: Bruce Adams, Daily Mail.

Director's Report

I am delighted to report that 2004 produced the best financial results in the entire history of the Zoo. This healthy out turn was boosted by a large influx of visitors and by an increase in their generous Gift Aid declarations. This led to the recovery of a record £1.26 million from the Inland Revenue. Our thanks also go to all our kind visitors who contributed to the 'Elective Pound Asian Elephant Appeal' which generated £350,000 - a 30% increase on 2003. Our reserves were greatly boosted by a net recovery of VAT in excess of £7.5million from HM Customs & Excise, part of which will support our charitable developments for the increasingly threatened Asian Elephant, Black Rhino and Orang-utan.

We had the best visitor figures since 1969: 1.087million on the traditional count (or nearly 1.162million if including the 'under threes'; or 1.172million if including visits to special events such as zoo lectures). This means that we are very close to our all-time visitor record of 1.147million set in 1967. According to figures issued by ALVA (the Association of Leading Visitor Attractions) we remain the leading wildlife attraction in the country; and rank number six – just behind the *Eden Project* - among those national tourist attractions which charge for entry.

This year we have been presented with 16 awards (page 4) and several staff have achieved personal honours. Among these, I am delighted to make two special mentions: my Personal Assistant, Frances Jacques gained *Executary of the Year Award* for the Northwest region and was a national finalist; Stephen McKeown has been made President Elect of the International Zoo Educators (who are now affiliated to WAZA).

In addition to successes at home, the Zoo continues to play a substantial role on the global stage. This year has seen the completion of the World Association's *World Zoo and Aquarium Conservation Strategy* which Chester Zoo staff made a significant contribution toward. This benchmark document will be published in 2005 and focuses on national and international partnerships between zoos, universities and wildife organisations in the task of conserving nature and the natural environment.

We have again participated fully in the activities of the European Association of Zoos and Aquaria (EAZA) and of the British and Irish Association (BIAZA – formerly the Zoo Federation). We were delighted to be presented with a top fundraising award at the European annual meeting in Kolmården, Sweden for raising significant amounts for the *Tiger Conservation Campaign*. It is of note that Chester Zoo will be co-ordinating *Shellshock*, the EAZA campaign for 2005, designed to combat the global threat of extinction facing turtles and tortoises, mainly due to illegal trading.

We continue to consolidate our conservation outreach overseas (pp 20, 21). There have been major strides in many programmes, including for Jaguars in Brazil and species and habitat preservation work in the Philippines – a biodiversity 'hotspot'.

On a personal level, this year I was asked to provide assistance to the Bolivian Government for two weeks in September. This was in order to provide advice and training for the national Vesty Pakos Zoo, in the Andes Mountains near La Paz. Working at a breathless altitude of 3,200 metres, this was a remarkable experience. There is likely to be scope for future exchange programmes for zoo staff. I was also fortunate to be one of two external assessors in a team of five to work with the South African government on a review of major scientific institutions for research, education and training, including Pretoria Zoo. Such rare opportunities allow Chester Zoo to promote the conservation of biodiversity and influence policy at international level: hopefully making a difference not only now but for decades ahead.

Earlier work for WWF in the rainforests of Cameroon where I discovered fish species new to science has resulted in two formal research papers: *Polypterus teugelsi* Britz 2004 and *Nannocharax reidi* Vari & Ferraris 2004 (see pages 41,42).

Within the Zoo the completion in August of Cedar House, our new administrative base, has successfully brought more than 80 staff together under one roof. Thanks to close proximity and improved communication links, the new building has made a tremendous difference to the day-to-day running of our business operations. The sheer logistics of the move were enormous: not least to relocate 80 workstations over one weekend. My thanks go to all the staff who worked so hard to make the transition seamless.

Receiving the *Huesped de Honor* or 'Freedom of the City' of La Paz in Bolivia. Photograph British Executive Service Overseas

Celebrating International Environmental Management Award (ISO 14001) with John Winward and Ray Morrison

Closer to home we are (with the generous on-going support of the Northwest Development Agency) in receipt of funding to complete the first phase of strategic planning for the **SuperZoo** concept for benign expansion; and now have an application 'in the pipeline' to develop a detailed business plan. We are fiercely proud to be based in the North West of England and each year, as part of our commitment, we assess the contribution we are making to the regional economy and jobs. For example, the latest results show that just under half of all our suppliers of goods and services are based locally – within Cheshire, South Lancashire and the North Wales Borders. At over £3.7 million, this accounts for 73% of our total annual supplies expenditure.

Exciting and educationally worthwhile exhibits have been opened to further extend the range of the Zoo and its appeal to visitors. We were delighted to welcome Professor Lord Robert Winston for the opening of the *Miniature Monkeys* exhibit in May. He was presented with the Society's Gold Medal in recognition of his outstanding lifetime achievements in the field of natural and biomedical science – and the occasion generated a great deal of media coverage. It is a pleasure to have bears back in the Zoo after a 10 year absence and our much-anticipated Spectacled Bears made a welcome appearance in March in a new exhibit.

This coming year will see some significant changes in the main entrance area as part of a £5 million investment - the largest single building project the Zoo has ever embarked upon. Work has already started on the *Elephants of the Asian Forest* to create a state-of-the-art breeding facility and replace the old Elephant House. Other major work at the entrance will in 2005 see the development of a brand new *Tsavo Café* and further development of the Black Rhino breeding area. In 2005, running into 2006 we will begin our biggest and most ambitious animal development to date: a new £3 million *Realm of the Red Ape* Orang-utan exhibit, which will hugely increase the space available both inside and out.

To have two healthy Asian elephant calves born in one year is globally exceptional. I am pleased to say *Sundara* and *Tunga* are both doing extremely well. We can look back on 2004 as a year of great successes all round. Equally importantly we can look forward with increasing confidence to the challenges ahead.

I am, as ever, indebted to all those who help Chester Zoo in whatever way and to Council, committee members and staff for their dedication, hard work and unstinting support. Thank you!

Gordon McGregor Reid.

Black Rhino (*Diceros bicornis michaeli*). Photograph: Chester Zoo Archives.

Summary and highlights of the year

Animal & Plant Conservation Division

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.

Objectives

- Continually improve the management, planning, development and welfare of the Society's animal and plant collection.
- Select the best balance of species to support objectives in conservation, education and science and to match reasonable public expectations.
- Increase our relevant zoological and botanical knowledge.
- Play an active role in supporting national and international zoo programmes in conservation and science.
- Engender a caring attitude towards the natural world.
- Continue to develop *in situ* conservation programmes and links.

2004 Highlights

- Significant births included: Sumatran Orang-utan, Lion-tailed Macaque, Columbian Spider Monkey, Geoffroy's Marmoset, Buffy Headed Capuchin, Lowland Anoa, Bongo, White Headed Duck, Red Billed Curassow, Philippine Sail-fin Lizard, Golden Poison Dart Frog and Pin-striped Damba (fish).
- Opening of *Miniature Monkeys* exhibit.
- Consolidation of *in situ* programme for Asian Elephant.
- Increased *in situ* support for British native species and Mascarenes Islands, Indian Ocean.
- Co-organized *Catalysts for Conservation* meeting.
- Launched International EAZA *Shellshock* campaign.
- China conservation and animal welfare programme met objectives.

Education Division Summary

Functions

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

Objectives

- Increase knowledge of and empathy for animals and their environment.
- Encourage and empower visitors and other audiences to make a positive contribution to conservation.
- Maintain and make available the Zoo's information, library and archive services.
- Support conservation education programmes in the UK and selected habitat countries (in close liaison with Animal & Plant Division).

2004 Highlights

- Head of Education elected International Zoo Educators Association Vice-President/President Elect.
- Successful relocation of Zoo Library.
- Organisation and hosting of national interpretation training workshops for UK zoo educators.
- Research conducted for first time on effectiveness of public presentations, relative visibility of animals.
- Entire contents of Zoo Library catalogued on electronic database.
- On-site education and training offered to 122 students in 57 institutions and 7 countries

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.

Objectives

- Continue to deliver high-class building projects within the financially increased capital redevelopment programme ensuring good value and best practice.
- Develop the estates project office to meet the increasing demands of our ambitious capital works programme.
- Scan the archive drawings in electronic format.
- Develop the newly formed Facility Management function.
- Rationalise the security department.
- Introduce an IT based planned maintenance system.
- Consolidate the areas of H&S legislation already addressed, ensuring continued compliance.
- Promote awareness of our accredited Environmental Management Standard (ISO 14001).

2004 Highlights

- Successful completion of many exhibits including *Spectacled Bears* and *Miniature Monkeys*.
- Completion of Cedar House Administration Building and car park.
- Schedule of enclosure surveys completed.
- Facilities function adopted into the Estates Division.
- Completion of manual handling training to all staff.
- Obtaining BS8555 for Environmental Management.
- Following two years of intensive effort, being awarded accreditation to the International Environmental Management Standard (ISO 14001).

Performance

- Awarded the *North West in Bloom* and *Chester in Bloom* trophies.
- BIAZA awards for Research, Sustained Breeding and Conservation.
- EAZA Platinum Award for fundraising for *Tiger Campaign*.
- NEZS increasingly involved in conservation outreach projects.
- Collection development, new species; Alaotran Gentle Lemur, Azara's Agouti, Pied Tamarin, Geoffroy's Marmoset, Spectacled Bear, Okapi, Salvador Monitor Lizard and Roti Island Snake-Necked Turtle.
- Planning of major new zoo developments including: *Realm of the Red Ape, Elephants of the Asian Forest, Animals of the Asian Steppe* and the *Rare Parrot Breeding Centre*.
- Completion of *Bears of the Cloud Forest*.
- Completion of *Miniature Monkeys*.
- Completion of *Philippine Spotted Deer project*.
- Completion of *Rare Water Bird Rearing Pens*.
- Completion of *Animals of the Asian Steppe*.
- Numerous welfare upgrades.
- 8 conservation programmes and over 50 projects supported in 5 continents.
- Over 180 research student projects completed in Zoo.
- Chester recognized as having the best animal records globally.

Directions for 2005

- Continue to develop the conservation focus of the animal and plant collections and produce a Strategic Plan.
- Continue to improve welfare standards and facilities.
- Continue to produce world class exhibits that inspire our visitors.
- Widen the training of staff including exchanges between collections and provide assistance for overseas personnel.
- Increase scientific output through research collaboration.
- Further develop capacity to resource external funds for conservation and research.
- Expand conservation initiatives securing external funding.
- Further explore consultancy opportunities.
- Develop GIS competencies.
- Develop limited access breeding centres for critically endangered species.

Performance

- Sandford Award given for *excellence of the educational service and facilities provided*.
- Over £600,000 generated through education visits.
- Presenters contacted 545,051 visitors – approx 50% of our total visitation.
- 19,363 students directly taught from a total of 105,686 visiting in educational parties.
- Over 300 items of interpretation commissioned and installed.
- Education Programmes Manager recruited.

Directions for 2005

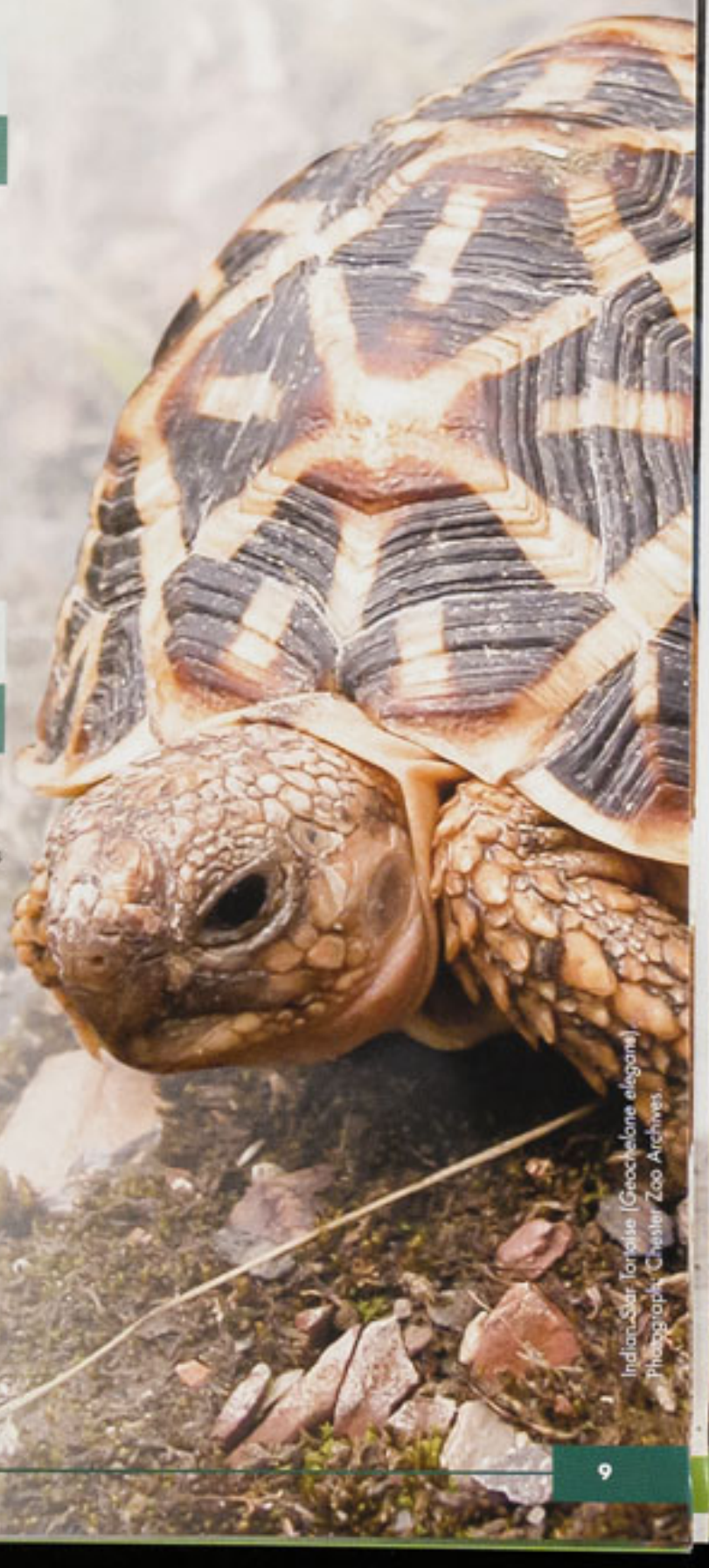
- Revise and update Education Policy and produce a Strategic Plan.
- Finalise planning of new *Learning Centre*.
- Develop assessment criteria for selection and effectiveness of education outreach programmes.
- Mount public-awareness raising exhibition for EAZA *Shellshock* campaign.
- Complete interpretation for *Elephants of the Asian Forest* and *Realm of the Red Ape*.
- Publish Library catalogue on Zoo intranet and the internet.
- Increase involvement in botanical conservation.

Performance

- Accreditation to International Environmental Management Standard (ISO 14001).
- Continued growth in capital development and completed projects.
- All staff received manual handling training.
- Statutory audits for asbestos and water management successfully completed.
- Audit for compliance to Disability Discrimination Act 1995 completed.
- Change of supplier for electricity that provides electricity from renewable resources.
- Infrastructure plan completed.

Directions for 2005

- Assist Directorate with the Physical Master Plan and develop an overall Strategic Plan for Estates.
- To commence three major capital projects *Elephants of the Asian Forest, Tsavo Café* and *Realm of the Red Ape*.
- To commence concept designs for new major developments *The Water Zone* and the Main Entrance Complex.
- Implement facilities outlined in the access audit Disability Discrimination Act 1995.
- Implement works as outlined in the Asbestos Audit.
- Implement works as outlined in the Water Management Survey.



Indian Star Tortoise (*Geochelone elegans*)
Photograph: Chester Zoo Archives

Summary and highlights of the year

Finance & Administration

Functions

- Financial accounting.
- Payroll and pensions.
- Management information and budgeting.
- Internal audit and control systems.
- Risk management.
- Visitor admissions and cash processing.
- Information technology (IT) and communications.
- Company secretarial, administration and insurance.

Objectives

- Financial control – secure and stable revenue operations and capital developments.
- Protect the assets and financial viability of the Society.
- Reliable financial forecasting and planning.
- Provision of a reliable IT and communications infrastructure.

2004 Highlights

- Net recovery of £7.5 million arrears of VAT following agreement by Customs & Excise to treat Zoo admissions income as exempt from VAT.
- A record £1.26 million Gift Aid was collected from our visitors on admissions to the Zoo.
- Deferment by one year of Government's cessation of Gift Aid on admissions income to April 2006.
- Introduction of new Defined Contribution Pension Scheme.
- Migration of all computers and communications systems, over a single weekend, from three separate buildings to 80 workstations in the new Cedar House.

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 projects through dedicated fundraising.
- Act as a service provider internally to ensure consistency of communication to internal and external stakeholders.

Objectives

- Reach £1.5 million for Elephant Appeal.
- Secure funding for **SuperZoo** project.
- Improve customer understanding of our conservation programmes.
- Increase funding base across all Zoo projects.
- Develop non-project related fundraising activities/income.
- Grow memberships to 26,000 by greater promotion in the Zoo and better retention.
- Grow adoptions to 7,000 through greater Christmas promotion, cross selling and improved retention.

2004 Highlights

- New Development Team recruited following audit.
- *Asian Elephant Appeal Ball* raised £60k.
- New fundraising projects and activities developed for 2005.
- Research shows overall customer satisfaction is 'extremely high' with 80% of customers likely to visit the Zoo again.
- Excellent reputation management of key PR issues.
- Newly launched website has been further developed.
- The new format of Zoo Guide has been well received by customers.
- Marketing and Development consolidated into one team.
- Completed first stage of **SuperZoo** feasibility study.

Personnel

Functions

- Staff recruitment, pay and reward strategies.
- Employee relations, development and training.
- Legal compliance.
- Zoo visitor Reception and communication services.
- Work experience programmes.
- Occupational Health.

Objectives

- Operate efficient and legally compliant personnel services.
- Develop staff training policies and organise delivery.
- Support skills and education in the community via work experience placements.
- Operate efficient reception and emergency support services.
- Ensure staff-related health issues are monitored and addressed

2004 Highlights

- Joint working party developing fairness and equality in terms and conditions of employment progressed.
- 35 vacancies filled during the year.
- Sensitive staff issues handled appropriately.
- New Reception installed in Cedar House and revised systems or work fully operational.

Visitor Services Division

Functions

- Deliver high levels of customer care Zoo-wide.
- Maintain all visitor 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.

Objectives

- To complete the planning and design of the new *Tsavo Café*.
- To provide more high quality visitor facilities.
- To further enhance basic amenities such as bins and benches.
- To meet and exceed sales targets in Retail and Catering and managed costs.
- To increase revenue generation through special events.

2004 Highlights

- Completion of detailed planning and design phase of new *Tsavo Café* (to replace *Oasis*).
- Continued investment in many visitor facilities, such as toilets, wheelchairs and benches.
- Further improvement works carried out to visitor car parks.
- Introduction of new fleet of electric scooters.
- New range of sustainable, recycled products on sale in shops.

Performance

- Increased automation and integration of accounting systems.
- Enhancement of visitor welcoming aspects of admissions staff's role.
- Ongoing assessment of the significant risks faced by the Society and how to transfer, avoid or mitigate them.
- 10-fold upgrade of speed of network links to cater for the larger file sizes of modern IT applications.

Directions for 2005

- Settlement of residual dispute with Customs & Excise and completion of recovery of VAT arrears.
- Seeking an alternative source of income to replace Gift Aid on admissions.
- Continued enhancement of provision of management information.
- Upgrading admission and other tills, including the ability to accept 'Chip and Pin' payments.
- Continued IT development throughout the Zoo, including a new IP phone system.
- Production of an IT Strategy to cover both mission and business.

Performance

- BIAZA Marketing Award for *Best Fundraising Project.*
- Elephant Appeal reached the £1 million mark.
- Visitor numbers of 1.087 million – one of our record years.
- Record income levels and profitability increased through reduced discounting.
- Zoo Guide sales have increased by 26%.
- Group visits increased by 19%.
- Memberships increased by 6% to 23,500.
- Legacies increased by 10%.
- Secured funding for early aspects of **SuperZoo** project.

Directions for 2005

- Assist Direcorate with development of Corporate Strategy.
- Review vision, mission, values and branding and develop Strategy.
- Implement new Development (Fundraising) Strategy.
- Develop partnerships and funding opportunities for **SuperZoo**.
- Launch of e-commerce website.
- Improve recruitment and retention of members and adopters.
- Conduct market research among members to better understand their aspirations.
- Launch new Corporate Adoptions package.
- Improve donor base though active direct marketing.
- Launch new photo ID card for members.

Performance

- Majority of work to review terms and conditions of employment completed.
- Staff issues handled satisfactorily.
- Policy development to ensure legal compliance.
- Work undertaken to develop Staff Appraisal Scheme.
- Remit for new Appraisal Scheme agreed.

Directions for 2005

- Assist Directorate in Staff Development Strategy and restructuring exercise.
- Staff Appraisal Scheme developed and implemented.
- Staff policies updated.
- Occupational health services enhanced.
- Undertake further management and supervisory skills training.

Performance

- *Best Tourism Attraction* awards from *Chester in Bloom* and *North West in Bloom.*
- *Positive Action Award* Northwest for Disability Access within the Zoo.
- Excellent sales performance in Retail and Catering.
- Continued growth of private and corporate events bookings.
- Record number of weddings booked and hosted in Oakfield House.
- Lots of positive customer feedback received by letter, email and market research.
- All customer concerns recorded to new database and acted upon.

Directions for 2005

- Continue to grow commercial activities and develop a Business Strategy.
- Commence build of *Tsavo Café* with a view to opening in early 2006.
- Build new extension to *Ark Shop,* creating more storage and merchandise space.
- Plan for and build additional visitor toilet and kiosk facilities in *West Zoo.*
- Increase number of undercover *Rainbuster* canopies.

Giraffe (*Giraffa camelopardalis*)
Photograph: Chester Zoo Archives

Accomplishing Our Mission

'Saving Species From Extinction'

The 'mission' or purpose of the Society is to be a major force in conserving global biodiversity. Our vision is a diverse, thriving and sustainable natural world.

Animal & Plant Conservation Division

Mark Pilgrim
Chief Curator &
Head of Division

One of the outcomes of the 2004 IUCN World Conservation Congress was the revision of the *Red List*, which is the official global monitor of the number and degree of threatened species throughout the world. The *IUCN Red List* makes depressing reading – with a reported 15,589 species known to be in a perilous position and with the most optimistic current extinction rate being 100 times the natural rate. In other words, the news is grim. Like all professional conservation organisations, we had staff representing us at this meeting and a really positive note is the growing acceptance of the value of appropriate conservation breeding programmes. While maintaining healthy animals and populations outside their natural range is a core activity, we are also developing an excellent international reputation for our work in other areas of biodiversity conservation, including in the field.

Zoo Conservation Breeding (*ex situ* programmes)

With a collection as large and diverse as ours, each year brings 'highs' when important animals are born or new species arrive and 'lows' when animals die. 2004 was no exception, with the curatorial team making great strides in developing the conservation focus of our animal and plant collections.

Included among important births were two Sumatran Orang-utans *Budi* and *Utara*. This species is now listed as critically endangered – the highest level of extinction risk. 2004 was also notable for the birth of two Asian Elephants: a female, *Sundara*, and a male, *Tunga*.

The successful hatching and rearing of a Red-billed Curassow was a highlight for the bird team. Another success story was the Golden Poison Arrow Frog which came into the collection and was successfully bred later in the year. Larger additions to the collection included Alaotran Gentle Lemurs, Spectacled Bears and the first Okapi ever to arrive at Chester. The birth of a Philippine Spotted Deer forms an important link between our conservation work in the Zoo and our outreach programme in the Philippines.

The latter part of the year saw the sad death of our two elderly Jaguars *Carlo* and *Ebony* and also *Regis* the male Komodo Dragon who was euthanised once it became obvious that, despite an immense amount of work by staff from the herpetology, veterinary and research teams, his health condition would never improve.

The plant collection continues to be developed. Our work with rare orchids continued and we also initiated the development of another threatened group of plants, the cacti. In the near future we will apply for national collection status and make the plants available for researchers, collectors and botanical institutions to view – as well as displaying many of them to our visitors.

Conservation Projects in nature (*in situ* programmes)

Our Head of Conservation and Science, Dr Roger Wilkinson, gives an account of the tremendous work he and his team are doing managing and supporting field projects on page 19. Two of our long-term programmes that received special attention in 2004 were: the *China Programme* (where we support three important forest reserves); and the *Asian Elephant Outreach Programme* (the *Assam Haathi Project* – which helps understanding and the mitigation of conflict between elephants and people in villages in Assam, India).

Outreach – consultation, training & capacity building

For many conservation programmes, financial support is what is required most. For others, we can best assist by providing expertise and training. Our skilled staff are increasingly providing technical support and training to conservation initiatives around the world, including species recovery and reintroduction procedures, education and awareness techniques, survey and social research design, biodiversity monitoring, geographic information systems, human-wildlife conflict mitigation, nutrition and wild animal health, horticultural skills, captive animal care and welfare, animal record-keeping, scientific data collection and analysis and husbandry skills for hundreds of endangered species. Two major examples during 2004 included our Curator of Higher Vertebrates, Mike Jordan, spending two weeks in Pakistan and the Middle East presenting a series of workshops on *Field Techniques for Small Mammals* at the request of IUCN Pakistan and the Pakistan Museum of Natural History. Our Zoo Nutritionist Dr Andrea Fidgett, led the first workshop on *Nutrition and*

Spectacled Bear (*Tremarctos ornatus*).
Photograph: Chester Zoo Archives

Animal & Plant Conservation Division

Food of Captive Wild Animals, organised by the Chinese Association of Zoological Gardens (CAZG) and hosted by Beijing Zoo. The full listings of these projects can be found on pages 34 and 35.

Conservation awareness – creating a caring public attitude

An important part of our biodiversity conservation input is to raise awareness about the threats facing wildlife around the world. We achieve this through displays of our animals and educational interpretation to more than one million visitors each year. We also achieve it in a wider context through conferences and campaigns. An exemplary example of this was the international *Catalysts for Conservation* symposium co-organised by our Conservation Co-ordinator Alexandra Zimmermann, which took place in London in collaboration with ZSL and WCS, New York. The symposium was designed to take an objective look at the true contributions, impacts, potentials and shortcomings of zoos in global conservation efforts. Alex is editing the Proceedings, due for publication 2005.

Kevin Buley publicising the international *Shellshock* conservation campaign

During the annual European Association of Zoos and Aquaria (EAZA) conference, our Curator of Lower Vertebrates and Invertebrates, Kevin Buley, launched the new EAZA campaign *Shellshock*. This global campaign to raise awareness and funding for the crisis facing turtles and tortoises around the world was proposed, organised and launched by Chester Zoo. It will run until September 2005. Leading the EAZA campaign puts us at the forefront of the 290 EAZA institutions in terms of EAZA-led conservation action.

Running a World-Class Zoo

All of the activities above are dependant on running a financially successful zoo and therefore all zoo staff play an important part in our conservation work.

The Zoo provides an excellent opportunity to engage people with the natural world. It is my belief that if we want people to care about the natural world we must display animals in attractive, natural settings where their welfare is paramount. Only then can we achieve that essential emotional connection between the animals, their environments and our visiting public. By making this connection we can begin to educate and raise their awareness of conservation issues, and explain both what we do to help and how they can give their support.

Animal Supplies & Services Department

Anthony Hutchinson
Animal Supplies Manager

The ongoing process of role expansion and diversification continued apace throughout the year. The department mainly concentrated on changing the emphasis from providing its historical services to those that better reflect the needs of the modern Zoo. The rat breeding colony was closed down in favour of the more economic and efficient option of purchasing from external producers. An experimental cricket breeding colony was set up to run alongside the existing locust colony as research has indicated a need to find a more nutritionally suitable food invertebrate than the desert locust, bred so successfully in the past. If successful, this is likely to take over as the mainstay of our invertebrate production. All zoos are becoming increasingly aware, from both nutritional and welfare perspectives, of the need to provide large volumes of fresh cut browse for many species. During the year the department has established a network of external contacts with local authorities and tree management agencies and this has given us access to both volume and variety of cost-free browse. Such a potentially inexhaustible supply greatly reduces reliance on our home grown willow plantations. Ongoing research analysis on the nutritional qualities of different browse types will also ensure that the best future use is made of this resource. Several of the department's staff received training in pest control techniques to enable them to assist with the existing pest control programme. This extra manpower will allow a more proactive approach in this field. Harvesting fresh grass for animal food throughout the spring and summer continued as before, but this year the operation benefited from the purchase of new equipment. A major scheme (planned last year to upgrade access and to create a secure concrete operations compound outside the department's building) came to fruition in December. It puts the finishing touches to a successful year and will be hugely beneficial in the future.

Members of the Animal Supplies team

Animal Health Care

Stephanie Sanderson
Veterinary Manager

Clinical Care

During 2004 we made over 2300 visits to 750 individuals of 250 species. The department continues to develop preventative health care protocols, including an electronic database of all diets fed. This is analysed by our nutritionist, Dr Andrea Fidgett. Our diagnostic parasitology capabilities have also expanded under the supervision of Karen Homer, with over 450 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 (AHC) 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 by the Zoo in 2004. In May 2004 Chester Zoo became one of the first in Europe to be granted the status of an *Approved Institute for all Species* under the *EU Live Animals (Balai) Directive*. This means that we are now recognised by DEFRA to have attained a superior level of disease surveillance. Once this scheme is taken up in other countries, this should greatly facilitate the movement of animals for conservation breeding and welfare purposes.

The health and welfare of the collection and work of the AHC Team is reviewed on a quarterly basis by the Society NEZS's Animal Welfare, Conservation and Scientific Committee.

Research and Conservation

In-Zoo research programmes include cryopreservation of macropod sperm and evaluation of Komodo Dragon sperm (Steve Unwin) and in conjunction with Liverpool University, development of diagnostic analyses (PCRs) for *Ophidian Paramyxovirus* and Fish Tuberculosis (Stephanie Sanderson).

The Veterinary Department has also contributed to collaborative research projects in the fields of nutrition, anaesthesia, reproductive endocrinology, diagnostics, conservation genetics and the anatomy, physiology and pathology of wild animals. In addition, all our medical records get submitted to the International Species Information System (ISIS) to form part of a *Global Database on Wildlife Medicine*.

Involvement in projects in range countries, includes information exchange with colleagues from India, Sri Lanka, Thailand, Indonesia, Bhutan and Cameroon. Steve Unwin is also an adviser to the *Pan-African Sanctuary Alliance* which is involved in the rehabilitation of confiscated wildlife throughout Africa. This year Dr Andrea Fidgett was one of the three course tutors at the first workshop on *Nutrition for Captive Wild Animals*, in China.

Steve Unwin and Karen Homer treating a Red-vented Cockatoo

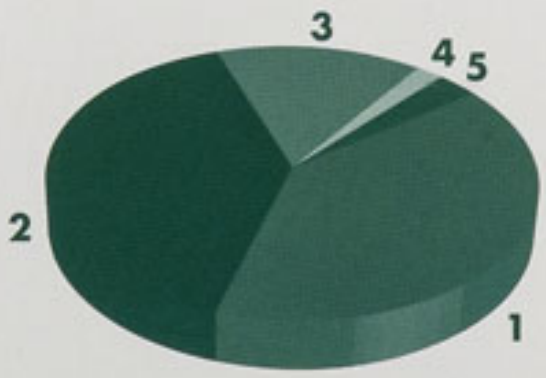
Education, Training and Advocacy

The department has offered on-site training to over 22 vets, vet students and vet nurses. Our first Scholar in Conservation Medicine (a joint position with Liverpool University), Shan Siah has now completed his residency and Giles Constant has taken on this position.

AHC staff also gave 30 lectures and workshops outside the Zoo, as part of BSc and MSc courses and post graduate training programmes. They have taken part in numerous national and international meetings which have proved invaluable for keeping abreast of developments and for exchanging ideas with other zoo and wildlife professionals.

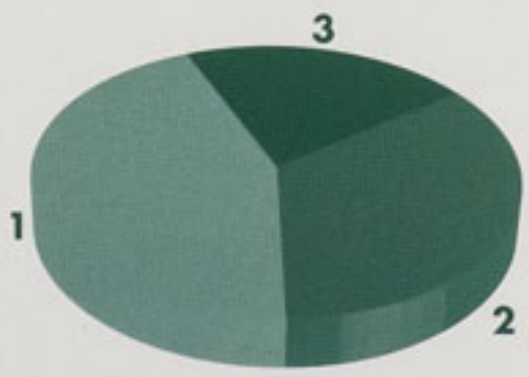
Stephanie Sanderson and Dr Andrea Fidgett serve on many national and international committees and act as veterinary and nutrition advisors respectively to several UK and International conservation breeding programmes.

Case Load by Taxa*



1 **Mammals**, 1256, (40%)
2 **Birds**, 1257, (40%)
3 **Reptiles**, 463, (15%)
4 **Amphibians**, 68, (2%)
5 **Fishes**, 83, (3%)

Causes of Mortality**



1 **Non-infectious**, 106, (44%)
2 **Other**, 84, (35%)
3 **Infectious**, 49, (21%)

Key: Numbers of individuals (percentage of the total number).
*Including preventative health care and post-mortem examinations.
**All species.

Animal Health Care Staff

Veterinary Manager	Stephanie Sanderson
Veterinary Officer	Steve Unwin
Veterinary Nurse	Karen Homer
Scholar in Conservation Medicine	Shan Siah/Giles Constant
Zoo Nutritionist	Dr Andrea Fidgett
Assistant Nutritionist (student placement)	Anna Riach/Lynn Stevenson
Admin Assistant (part time)	Clare Morris/Gillian Bailey

Animal Environmental Enrichment

Dr Stephanie Wehnelt
Research Officer

Dr Sonya Hill
Research Assistant

Environmental enrichment provides animals with a more stimulating physical and social environment. Chester Zoo enthusiastically supports environmental enrichment as a major principle in the provision of excellent animal welfare standards, and the Zoo has repeatedly received the Meritorious Award in recognition of *Significant Advances in Husbandry and Welfare* from The British and Irish Association of Zoos and Aquariums (BIAZA).

By using our knowledge of 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. Keepers in all animal teams use a variety of established techniques and develop new enrichment ideas for the animals in their care.

Many of our on-site research projects include scientific assessments of enrichment efforts. For example, a BSc project in 2004 involved an ongoing comparative investigation of the effects of feeding-related and olfactory enrichment techniques for various species including the Eastern Black Rhinoceros, South American Tapir, Congo Buffalo, Grevy's Zebra, Red River Hog and Przewalski's Horse. This enabled us to assess the animals' responses to the enrichment efforts and to better understand the behavioural flexibility of the species.

Free access to the outdoor enclosures is now offered to many of the Zoo's animals at night. The research of an MSc student has provided scientific evidence of the benefits of this type of husbandry in enriching our herd of Asian Elephants. After being provided with night access to the outdoor paddock, the elephants spent a significant amount of time outside at night, utilising the enrichment items and different types of floor substrate provided there. Individuals benefited from additional opportunities to regulate their distances to herd members and many positive behaviours were observed, including dust bathing and mud wallowing. Other ongoing enrichment assessments were carried out on-site in 2004 for Jaguars, Californian Sealions and Orang-utans. We use the results of such studies to monitor animal welfare and to assess future environmental enrichment programmes at the Zoo.

Environmental Enrichment Goals

- **Maintaining and improving good animal welfare**
  Species-appropriate behavioural repertoires; opportunities to exercise choice; cognitive stimulation from complex activities such as tool-use in Orang-utans.
- **Supporting conservation efforts**
  Increased breeding success of rare species; preservation of species-typical behaviours such as appropriate maternal behaviour.
- **Improved health**
  Increased physical fitness through the provision of enrichment devices including ropes and other climbing structures for animals such as the Coati. Minimising stress.
- **Increased re-introduction success**
  Preparation for the challenges in the wild; preservation of behavioural (as well as genetic) diversity.
- **Conservation education and enjoyment for visitors**
  More appropriate, naturalistic view of animal species; better and more insightful educational awareness for Zoo visitors.

'Enrichment logs' stimulate exploratory feeding behaviour in elephants

Asian Elephant (*Elephas maximus*).
Photograph: Chester Zoo Archives.

Higher Vertebrates

Mike Jordan
Curator of Higher Vertebrates

This past year has been a busy and exciting one for the bird and mammal teams in the Zoo. Recognition of Chester Zoo's key role in conservation continues to grow. During 2004 there have been significant advances in this aspect to both the species that we keep and the role that our bird and mammal staff plays in the wider zoo community and in field conservation work.

The animal movements in and out of the Zoo during the year are far too numerous to list and choosing highlights from such a long list is always a difficult task. This was particularly so last year when we bred and exported many rare animals to other zoos. Some important new species have joined the collection during 2004. The spring saw the arrival of Spectacled Bears into the new world class *Bears of the Cloud Forest* exhibit. Following a lengthy settling down period and some necessary dental treatment I am pleased to say that both bears are now doing exceedingly well. Spring also saw the opening of *Miniature Monkeys* with Pied Tamarin, Geoffroy's Marmoset and Azara's Agouti. These will also shortly be joined by Black Lion Tamarin and the Zoo will then be working with two of only three critically endangered callitrichid primates. Two other species new to Chester Zoo during the year were another critically endangered primate, the Alaotran Gentle Lemur, and our first male Okapi, which in time we hope will be joined by additional animals to form a small breeding group. Significant, too, during the year were additional Philippine Spotted Deer, Blue-throated Macaw, Omei Shan Liocichla (a small perching bird), Eastern Bongo (an antelope) and Rothschild's Giraffe, all of which assist our efforts to breed these rare species.

Geoffroy's Marmoset (Callithrix geoffroyi). Photograph: Chester Zoo Archives.

This has proved an excellent year for breeding here at the Zoo. Amongst the successful births and hatchings were: Red-billed Curassow (a first for Chester Zoo), Bush Dog, Eastern Bongo, Great Hornbill, Great Grey Owl, Spectacled Owl, West African Crowned Crane, Brazilian Tapir, Sumatran Orang-utan, Asian Elephant, Waldrapp Ibis, Lion-tailed Macaque and Buffy-headed Capuchin. Following on from 2003 we again had some success with our Red Bird-of-Paradise which this year for the first time artificially incubated and hand reared two chicks. Sadly these eventually died – but the skills and information gained will contribute significantly to our work with these birds.

A large and dynamic collection such as Chester Zoo inevitably has departures and deaths every year. The excellent breeding record we have here at the Zoo and our involvement in more than 115 co-ordinated bird and mammal breeding programmes creates a lot work for the staff involved in imports and exports. During 2004 we have sent a substantial number of birds and mammals to other zoos around the world. The most noticeable amongst these must be the departure of the two male Asian Elephants, *Po Chin* and *Assam*, to Belgium as part of the European Breeding Programme (EEP). We were very saddened this year by the death of our elderly female Siberian Tiger, *Strelka* and also our two elderly Jaguars, *Carlo* and *Ebony*. As with many sad events though this also created an opportunity for us to bring in three new Jaguars into the *Spirit of the Jaguar* exhibit and they are quickly settling into their new homes.

Rare Red-billed Curassow, one week old

The year has especially seen a number of exciting new exhibit areas opened for birds and mammals. *Bears of the Cloud Forest* and *Miniature Monkeys* have already been mentioned but also at the beginning of the year we completed the new *Rainforest Macaws* breeding area and also a newly located exhibit for the *Red River Hogs*. At the end of the year we completed the new *Asian Steppe* area to allow our Bactrian Camel and Onager (wild horses) to be mixed together.

Increasingly the skills of our staff are being recognised and called upon to assist conservation work outside of the Zoo. More than ever during 2004 we have sent bird and mammal staff abroad to assist conservation work. During the year staff have worked in the field on such diverse projects as bird hand-rearing and reintroduction in Mauritius; advising the French Government on hamster conservation; primate rehabilitation in Uganda, Cameroon and Zambia; and training field workers in Pakistan and India on animal capture, handling and reintroduction techniques. Staff have participated in numerous conservation planning workshops as far afield as Hungary, USA, Thailand, Namibia (Southwest Africa) and India.

I am sure the coming year will prove to be busier than ever and equally challenging and productive for the collection and all the bird and mammal staff working at Chester Zoo.

Lower Vertebrates & Invertebrates

Kevin R Buley
Curator of Lower Vertebrates & Invertebrates

In last year's review, I highlighted the conservation crisis facing the world's turtles and tortoises. Although they have been residents of planet earth for more than a quarter of a billion years, in the last 25 years many have been pushed to the brink of extinction – primarily as a result of the demand for their meat in Southeast Asia.

I am proud to report that in the last 12 months, Chester Zoo has made significant contributions towards the efforts to save these ancient species. In September this year we launched *Shellshock* the new Conservation Campaign for the European Association of Zoos & Aquaria (EAZA). The campaign has been proposed, organised and is being led by Chester Zoo. *Shellshock* will hopefully attract the involvement of many of the 290 zoos and aquariums of the EAZA community, and beyond, as we work towards our fundraising target of €150,000.

In addition to *Shellshock*, we were also involved in two separate conservation rescue missions for threatened tortoise species during the year. In July, we received six Indian Star Tortoises from customs in Hong Kong. These were part of a shipment of over 300 animals that were being smuggled into the country in a suitcase by a Malaysian courier. Later in the year we received two adult Egyptian Tortoises to join our existing group here at the Zoo. These Critically Endangered animals were also rescued from a suitcase when an attempt was made to smuggle them into Australia.

During 2004 I was asked to take on the role of chairing the Captive Breeding Specialist Group for the World Conservation Union's (IUCN) Declining Amphibian Population Task Force. This Task Force was set up in the early 1990s when several unexplainable extinctions of amphibian species occurred in a number of places around the world. Since then, the number of documented extinctions and catastrophic population declines has risen rapidly. As more and more species of frog, toad and salamander are threatened with extinction, leading zoos such as Chester will have a vital role to play in the survival of many species.

In November, direct amphibian conservation action was taken when Karen Entwistle from the Herpetology Team, travelled to Puerto Rico where she took part in the annual reintroduction of zoo-bred Puerto Rican Crested Toads. The Crested Toad recovery programme is among the most successful amphibian conservation initiatives in the world and we are delighted to be playing such an active part through our work with the species in the Zoo; and participation of our staff in their wild conservation.

A notable breeding success in our amphibian collection this year was our endangered Golden Poison Dart Frogs. We started work with this species last year for the first time and were delighted when we obtained our first ever metamorphs in late November.

At the beginning of the year we opened our new *Fish Nursery* in the aquarium. This exhibit gives visitors the unique opportunity to see some of the rare fish species we have recently bred, such as baby seahorses and stingrays, and how we successfully rear them. The fish nursery has proved incredibly popular, and it gives a behind-the-scenes glimpse of the vital conservation breeding work we carry out.

One of our greatest fish breeding achievements of 2004 was a secretive, small brown Mexican freshwater species called the Banded Allotoca. Of the 42 Mexican species of endemic freshwater fish in the goodeid family, the Banded Allotoca is one of those most threatened with extinction. Only a single tiny population remains in the wild, in a small mountainous tributary 200km from Mexico City.

In December, Zoo staff travelled out to Mexico to meet with leading fish conservationists to work out the best way to ensure the survival of the Banded Allotoca and several similar species. While the situation remains so critical in the wild, our first breeding success outside Mexico will help to ensure the survival of the species. With conservation increasingly at the heart of all our work here at Chester Zoo, we are as committed to saving the small, brown, less exciting species, as we are to saving the larger, perhaps more spectacular ones.

ShellShock

Indian Star Tortoise (*Geochelone elegans*).
Photograph: Chester Zoo Archives.

Botany & Horticulture

Mark Sparrow
Curator of Botany & Horticulture

The year started with the completion of the large, new nursery greenhouse complex. This gives us much greater control of the growing environments, allowing us to increase our range of plants of conservation and educational value (see page 27). The building is 494 square metres in floor area and is divided into five separate growing zones. Each of these zones is independently controlled by a central computer which monitors and adjusts the heating, ventilation, thermal/shade screens and supplementary lighting, according to the needs of the plants. Rainwater is collected from the roof and stored in a 24000 litre tank, prior to being used to water the plants.

The landscaping and planting of the Spectacled Bear enclosure (pictured below) early in the year proved to be a very challenging project. Tonnes of soil were moved to create the undulating contours on site and two waterfalls were constructed to provide both sound and movement. At the same time as this development, the *Miniature Monkey* exhibit was also being planted up. In all, 42 specimen trees and over 1000 shrubs and herbaceous plants were used on the two areas.

The Rock Garden and Heather Garden were both redeveloped during the year.

Major landscaping work was carried out around the new Cedar House administration buildings. The central courtyard was designed to create a low maintenance garden and included a water feature, winding paths, a rounded stone surface and large and exotic foliage plants. The external landscape, including the staff car park, was grassed or planted up with trees and shrubs.

Staff in the nursery also had a busy year. The annual *Orchid Festival* ran from February 14th to 22nd. There were rare orchid displays in the *Grow Zone, Monkeys, Tropical Realm* and *Ark Restaurant*; and interactive sessions for children making decorative cards featuring an orchid flower. We also sold plants to the public and our own staff. Experts from a local orchid society were on hand to offer cultivation tips.

An exciting new *Carnivorous Plant Display* was built and planted up by the team in the *Grow Zone* and includes Venus Fly Traps, Sundews and Pitcher Plants.

We participated in a number of orchid shows during the year including Nantwich and Gordale, and one of our rare plants gained a prize at the *Bonn Orchid Festival*, Germany. At the end of October the team put together a Pumpkin and Halloween display in the *Grow Zone*, which proved very popular with our younger visitors.

In July we took part in the Tatton Park Flower Show, constructing a back-to-back garden called *Tomorrow's Garden for Wildlife*. The garden was designed in collaboration with English Nature and showed simple measures that can be taken to increase biodiversity in a small suburban back garden. It was awarded a Bronze Medal by the judges.

Staff participated in a number of national and international conferences during the year. These included the 2nd World Botanic Garden Congress in Barcelona, the European Zoo Horticulturist Conference in Denmark, a *PlantNetwork* conference at Sparsholt College, the British & Irish Association (BIAZA) *Zoo Horticulture Conference* in London; and the Plant Pest Control in Glasshouses meeting at the *Eden Project*, Cornwall.

The section gained a number of awards during the year, in addition to those already mentioned. We were awarded the *North West in Bloom* and *Chester in Bloom* trophies in the Tourist Attraction categories. Mark Hargreaves and Dave Burrows were part of the team that won the North West of England title in the *Landscape Skills Competition*, organised by horticultural colleges. They came second in the national finals held in London.

Keith Done, Senior Horticulturist in the nursery, celebrated 35 years service at the Zoo, while Mark Hargreaves, Team Leader, has been with the Zoo for 25 years.

Mark successfully completed his NVQ 3 qualification in Amenity Horticulture, while Matthew Jenkins gained an NVQ 2 in the same subject. David Burrows gained two NVQ 3s in Amenity Horticulture and Arboriculture. Congratulations to all!

Conservation & Science

Roger Wilkinson,
Head of Conservation & Science

School children in Kenya learn about the threats to Rhino and other wildlife with Chester Zoo help

Chester Zoo's increasingly proactive role in conservation and science has been reflected in greater activity regarding both *in situ* conservation and research to assist threatened species in the wild and in-zoo research to help maintain highest husbandry and welfare standards.

In co-operation with the Sichuan Forestry Department and Liverpool John Moores University, we have supported three important forest reserves in China through the provision of essential equipment and staff training. We also continued our *in situ* conservation support for Chinese Yellow-throated Laughing Thrush. I made working visits to both Chinese projects in 2004 as well as to our major projects in the Philippines.

Working together with Fauna and Flora International in the Philippines we continued our support for breeding centres for threatened wildlife and also for habitat conservation through supporting ecology wardens on Polillo Island and Cebu. In addition we continued to support a major field conservation programme for Philippine Cockatoos on Palawan and also assisted the protection for endangered hornbills in the forests of Panay.

Gashaka Gumti National Park in Nigeria is the only remaining forest where the Nigerian Chimpanzee (*Pan troglodytes vellerosus*) has a chance of long term survival. We continued to assist the University College London Primate Project with support for primate studies, botanical research and the training and supervision of Nigerian research students. Additional funds were given for the first stage in demarcating the park boundaries.

Chester Zoo, in partnership with Save the Rhino International, again gave significant funds to Black Rhino anti-poaching units in Tsavo East and the Chyulu Hills, and to conservation education projects at Laikipia, Kenya. We have also supported the essential renewal of fencing for Black Rhinos held at Mkomazi Game Reserve in Tanzania.

The Jaguar Rancher Outreach Programme, initiated in 2001 by Alexandra Zimmermann, successfully demonstrated a new way of engaging ranchers to adapt traditional cattle management practices to minimize jaguar predation. In 2003, with our help, the Wildlife Conservation Society, New York secured a large grant and recruited a field assistant to continue and expand the program. We have since designed a new initiative to carry out a global assessment of jaguar conflicts and set up the first ever international network to improve best practice.

An Asian Elephant conservation programme, the *Assam Haathi Project*, India, was initiated by Alexandra along with Scott Wilson, in partnership with EcoSystems India. This focuses on the understanding and mitigation of elephant/human conflicts in villages in Assam. During its first six months, the project identified the most critical areas for conflict mitigation, built rapport with local communities, tailor-designed a research methodology, trained Assamese research assistants and recruited a Project Manager in Assam.

Our involvement in native species conservation increased significantly under Sarah Bird in 2004. Projects in which the Zoo plays a leading co-ordination role include Harvest Mice research and Cheshire Black Poplars. We received commendation from the British and Irish Association of Zoos and Aquariums (BIAZA) for the *Harvest Mouse Reintroduction Project*. The Zoo also plays an important role locally in Freshwater Pearl Mussel conservation and Dormice research.

Chester has assisted conservation work by the Mauritius Wildlife Foundation over several years and developed this further with new support for Mauritius Fody (rare birds) and threatened endemic plants. Two bird keepers, Lara Thick and Paul Morris were seconded to Mauritius to assist the recovery programmes for the Fody and for the Echo Parakeet. Continuing support was given to Shoals Rodrigues for sustainable marine conservation.

Chester Zoo was presented with the highest Platinum Award for fund-raising for the second and final year of the EAZA Tiger Campaign. The 2004/2005 EAZA Turtle Campaign, *Shellshock*, was initiated this year from Chester Zoo by Kevin Buley.

A significant new observational research facility was installed in the new *Minature Monkeys* exhibit. This was kindly supported by University College Chester. Results from this research may well be applied to improve welfare and field conservation.

Stephanie Wehnelt, Kirsty Burrell and Sonya Hill worked on in-house welfare, breeding and husbandry studies. Their research into how visitor levels affect Orang-utan welfare achieved the 2004 *Meritorious Award* in recognition of *The Best Zoo Research Project* from BIAZA. Asian Elephant research included studies on behavioural birth indicators and on the benefits of giving 24 hour access to outdoor facilities. Stephanie Wehnelt co-organised a research workshop in Edinburgh Zoo on statistics for typical zoo datasets.

Dave Brunger has achieved excellent results in our animal records keeping with Chester being acknowledged by ISIS as the leading zoo in the world for its comprehensive and accurate animal records.

Zoo Worldwide Activities

North and South America

Belize
- Support for Jaguar surveys at the Cockscomb Basin Wildlife Sanctuary

Bolivia
- Student project support: Bosque Tucumano expedition
- Director acted as Consultant for British Executive Services Overseas (BESO) to carry out a management review of Vesty Pakos Zoo, La Paz, Bolivia

Brazil
- NEZS Conservation Co-ordinator facilitated the Wildlife Conservation Society's (WCS) Jaguar/Rancher programme
- Support for Buffy-headed Capuchin field surveys
- Sponsorship of Black Lion Tamarin group
- Atlantic Forest Tapir and habitat conservation support

Canada
- Staff participation at the Zoo Registrars Association Conference

Colombia
- Support for White Handed Tamarin conservation breeding project
- Support for Pacarana conservation project
- Support for parrot education project

Costa Rica
- Support for Great Green Macaw conservation project

Mexico
- Mexican fish biologist training at Chester Zoo
- Staff working visit to research Spider Monkeys
- Curators working visit to further develop outreach support

Puerto Rico
- Staff participation on Puerto Rican Crested Toad field conservation project

Panama
- Staff participation at the International Tapir conference

USA
- Staff participation at Decade of Education for Sustainable Development Conference
- Staff working visit to develop collaborative links in nutrition with St. Louis Zoo
- Staff participation at joint conference of the American Association of Zoo Veterinarians/Wildlife Disease Association
- Curator participation at IUCN Turtle Survival Alliance Conference
- Support for Harlequin Toad (*Atelopus*) conservation workshop
- Support for the development of ZIMS (international species records software)

Venezuela
- Support for delegate attendance to IUCN meeting

Europe

Austria
- Staff participation at the European Union of Aquarium Curators meeting

Belgium
- Staff participation at *Oceanics* meeting – Public understanding of Marine Conservation Project

Denmark
- Staff participation at the annual conference of the European Zoo Horticulture Group
- Staff participation in European Association of Zoo and Wildlife Veterinarians Scientific meeting
- Curator participation at EAZA Great Ape TAG meeting

Europe wide
- NEZS co-ordination of the European *Shellshock* conservation campaign

France
- Staff participation on International Congress of Zookeepers steering committee meeting
- Support for European Hamster conservation in the wild

Germany
- Staff participation at planning meeting for the International Zoo and Aquarium Marketing Conference

Hungary
- Curator reintroduction consultation to EAZA Equid TAG

Italy
- Staff participation at the International Primatology Society Conference

Latvia
- Curator participation at EAZA Lower Vertebrate & Invertebrate combined TAG meeting

Netherlands
- Staff participation at EAZA Nutrition Group meeting
- Staff participation at Tropical Animal Health and Production symposium

Spain
- Staff participation at the World Botanic Garden Congress
- Staff participation at the *Oceanics* Conference
- Curator participation at the Global Action Plan meeting for the Northern Bald Ibis

Sweden
- Staff participation in European Animal Data Information steering committee meeting
- Director and staff participation at the EAZA Annual Conference

Switzerland
- Director participation at World Association of Zoos and Aquariums council meeting

UK
- Staff co-ordination and participation in various local and national Biodiversity Action Plans
- NEZS co-ordinated Harvest Mouse conservation and reintroduction programme
- Support for Wrexham Pond Survey Project
- Support for North East Wales Barn Owl survey
- Support for the Deeside Urban Wildlife Group
- Support for Cheshire's 2004 Countdown Biodiversity Conference
- Support for Scimitar Horned Oryx genetics research
- Staff participation at the British and Irish Association of Zoos and Aquariums Conference
- Staff participation at the International Symposium on Zoo Design
- IUCN Parrot meeting hosted by NEZS
- Co-organised the international symposium – *Catalysts for Conservation: A Direction for Zoos in the 21st Century*
- Director's participation as a Trustee of the *Frozen Ark Project* (British Museum of Natural History)
- Director's participation in Steering Committee for *World Zoo and Aquarium Conservation Strategy*
- Capacity building support and training for Indian scientist
- Support for fish reintroduction scientific research projects (Director and Dr Heather Hall, ZSL)
- Support for native species recording calendar project
- Support for the International Commission on Zoological Nomenclature
- Staff participation at 'Communicate' Conference
- Director Chair of EAZA Research Committee meeting
- Director supported a successful application to the Royal Society from Dr Boris Dzyuba of the National Academy of Sciences of the Ukraine for a grant to carry out a cryobiological study on pipe fish reproduction in collaboration with Professor Bill Holt, Institute of Zoology, London.
- Director Chair of Cheshire Gardens Strategy for *Culture Northwest*
- Director's participation in WWF International Conservation Programmes Committee
- Director President (Chair) Linnean Society of London scientific meetings

Africa

Cameroon
- Keeper exchange with the Limbe Wildlife Centre

Our conservation work in 2004 spanned 52 countries in 5 continents

Congo
- Staff working visit to Primate Veterinary Workshop

Democratic Republic of Congo
- Support of ornithological surveys of the Tayna Gorilla Reserve
- Support for Congo Peafowl research project
- Support for the Okapi Wildlife Reserve Breeding and Research Centre

Kenya
- Support for the Kenya Wildlife Service's Black Rhino surveillance and protection in Tsavo East and Chyulu National Parks
- Support for community education programmes
- Student project support: Chimpanzee social organisation

Namibia
- Support for the Predator Conservation Trust's Desert Lion project
- Staff participation in Namibian National Academy desert elephant project

Nigeria
- Support for primate research, boundary demarcation, studentships and botanical support in Gashaka Gumti National Park
- Student project support: crop raiding by Olive Baboons
- Visit from Centre for Education, Research and Conservation of Primates and Nature vet

Mauritius
- Support for Echo Parakeet Conservation Programme
- Support for Rodrigues Island Fruit Bat research and conservation monitoring
- Support for Mauritius Fody (rare bird) translocation project
- Staff working visit to assist Echo Parakeet and Mauritius Fody (rare bird) conservation projects
- Support for marine reserves and sustainable fisheries project
- Support for Pink Pigeon disease screening and disease control project
- Support for threatened plant conservation project

Seychelles
- Student project support: Sheath-tailed Bat research

South Africa
- Support for the Wattled Crane Recovery Project
- Student project support: Density of Brown Hyena
- Staff and curator participation at the International Environmental Enrichment Conference
- Director's participation in Strategic and Operational Review Panel for SAASTA – a government body operating under the National Research Foundation (NRF) of South Africa. The Panel considered the integration of research, educational, funding and business activities of the SA national museums, science centres and zoos, with a view to a major reorganization

Tanzania
- Support for Black Rhino reintroduction and protection project in Mkomazi Game Reserve

Uganda
- Support of primate crop raiding study
- Staff working visit to the Ngamba Island Chimp Sanctuary

Zambia
- Munda Wanga keeper and education staff visits to Chester Zoo

Asia

Cambodia
- Support of Water Snake research project

China
- Supporting conservation of endemic birds and forest reserves in Sichuan
- Continuing support for Yellow-throated Laughing Thrush surveys
- Staff participation at the International Zoo Educators Conference
- Staff participation in workshop on nutrition and food of captive wild animals

India
- NEZS Asian Elephant conservation programme in Assam
- Support for Zoo Outreach Organisation conservation work including Chiroptera Network and training workshop and South and East Asia Reintroduction Specialist Group
- Richard Hughes Scholarship Award: Elephant welfare project
- Curator participation on CAMP and Global Mammal Assessment for South Asia mammals
- Curator facilitation of reintroduction techniques training workshop

Indonesia, Sulawesi
- Support for an endemic ungulate project

Kazakhstan
- Student project support: Snow Leopard research
- Support for Social Lapwing project

Malaysia, Sabah
- Support for sustainable fisheries project
- Support for wildlife wardens project

Myanmar
- Support for freshwater fish surveys

Nepal
- Support for freshwater eels research project

Pakistan
- Curator facilitation of zoo management training workshops
- Curator facilitation of small mammal field technique training workshops

Syria
- Support for wetland birds project

Thailand
- Support for Hornbill community based conservation and research programmes
- Hornbill nest adoptions
- Staff participation at the World Zoo and Aquarium conference
- Staff and curator participation at IUCN World Conservation Congress
- Curator participation at the Conservation Breeding Specialist Group annual meeting
- Visit from veterinary project researcher, Elephant Reintroduction Project

The Philippines
- Support for Fauna and Flora International Philippines: West Visayas, Cebu and Polillio Island projects
- Support for the Philippines Cockatoo Conservation Programme
- Support for Visayan Writhe-billed Hornbill conservation project
- Student project support: Durham University Coral Awareness Research Expedition

United Arab Emirates
- Curator participation in workshop on endangered Arabian wildlife
- Curator support and training in small mammal field and husbandry techniques

Australasia

Polynesia
- Participation and support of the Partula Snail Conservation Programme Consortium

Australia
- Staff participation at Data Cleanup Campaign and Data Standards workshops for International Species Information System (ISIS) Zoological Information Management System (ZIMS) project

Education Division - Learning, training and outreach

Stephen McKeown
Head of Education

The highlight of 2004 was undoubtedly being presented with the very prestigious *Sandford Award* for excellence in provision of education services. This was the result of a real team effort with all areas of our operations including teaching, interpretation, administration and public presentations being complimented. Our *Quantum Leap* initiative, giving free entry to deserving schools accounted for over 10,000 visits. The total numbers in education parties for the year were 105,686, of which 19,363 were directly taught. The presenters too managed to reach a huge audience with over half a million visitors attending one or more animal presentations. The innovative *Talking Plants* performances where we inject drama and fun into botanical education proved successful too with a summer audience of more than 46,000 visitors.

Sara Ruks, Senior Education Officer, who had been with the Zoo for 20 years, decided to take early retirement in February. Sara's contributions to the development of the Education Division are greatly appreciated and she will be missed! In recruiting her replacement, we saw an opportunity to create a new role with additional responsibilities and so the post of Education Programmes Manager came into being. In July we recruited Maggie Esson, formerly Head of Education at Jersey Zoo, to this post and she has already made very significant contributions to the life and work of the Division.

Engaging young people in our conservation work

Existing staff took on greater external responsibilities too with Liz Marrs, our most botanically-inclined presenter, being elected to the Council of the Botanic Gardens Education Network. This appointment coincides with a greater emphasis on including botanical conservation in our education work. I was very honoured to be chosen as the International Zoo Educators Association's President Elect, taking up my new position at a meeting in Hong Kong in September. Gill Wells took over as BIAZA's (the Zoo Federation's new name) regional education co-ordinator with responsibility for co-ordinating meetings with zoo educators in the North West region. Gareth Redston continued his work with the OCEANICS public understanding of marine conservation project.

The two big interpretation projects we worked on in 2004 were *Realm of the Red Ape* and *Elephants of the Asian Forest*. You will see when the new exhibits open that we have taken a slightly different approach to interpretation which will result, we hope, in our messages being even more effective. Keeping the existing interpretation up to date, clean and working is a huge job involving many people, not just in the Education Division. This year we introduced over 300 pieces of new interpretive material in the Zoo.

Outreach projects included providing funding for a programme at Baranquilla Zoo in Colombia to help persuade people not to buy wild-caught parrots as pets. We also continued to work with Zoo Outreach Organisation (ZOO) in India where we supported the production of various project packs on vultures, bats, rodents, turtles and gharials; an endangered species of crocodilian. In a joint initiative with Botanic Gardens Conservation International, we have funded a tree conservation project across India, again co-ordinated by Sally Walker and her colleagues in ZOO.

Our long-awaited move to Cedar House went very smoothly indeed and we are very happy in our new accommodation. The old Education Centre now operates three teaching areas with the former Library acting as a secure store for the Society's archive material, much of which, incidentally, has now been scanned and digitised so it can be examined on a computer from anywhere in the Zoo (where a PC is linked to our network). The new Library, which all members are very welcome to visit, has an Internet suite where visitors can check email and use the world wide web. Most importantly we now have sufficient space to comfortably house our 4000 or so books and other publications with room for considerable expansion in the future. Clare Caws, who has been working on a series of short-term contracts as Library Assistant, has now been taken on as a full-time Library and Archive Assistant.

Gill Wells preparing interpretation material

After much thought we decided that the *Wildlife Activity Centre* would serve the visitors better as an information centre operated by the Visitor Services Division and so, by the time you read this, it will have been converted to its new function.

A 'Plants on Trial' zoo theatre performance

Junior Members – Learning through fun

Penny Rudd
Junior Members
Co-ordinator

This has been another exciting year for the Junior Members who now number 8,373 – a 27% increase over the last two years! Our Discovery Session in January involved Juniors in drawing their own designs for the Red River Hog enclosure and we achieved 140 amazing variations on that theme (including heated swimming pools thanks to there being no budget restrictions imposed!).

A visit to *The Palms* at Stapeley Water Gardens in February was hugely popular, as was our less-than-usually-muddy, but extremely windy day-taking plaster casts of spoor in March.

As ever the Tiger footprints were a great favourite but particular thanks also go to *Elliot* the Babirusa who was persuaded to walk through a sandpit a few times to provide extra footprints owing to the dry ground!

There was beautiful weather and a thoroughly enjoyable day walking around Lake Padarn in Snowdonia in April. We included bug-hunting and bluebell species identification in our visit to the fabulous otters and birds of prey at the Chestnut Centre Conservation Park in Derbyshire in May.

Junior Member Jack Bamber being interviewed for TV on a trip to Manchester Museum

We headed off to Anglesey in June and combined a new visit to the fascinating *Fossil Museum* with a return visit to an old favourite of ours, the *Pili Palace*, to see their butterflies. Apologies to parents whose offspring purchased and secreted Stick Insects on the coach prior to our departure from Anglesey!

The ever-popular *Day with a Keeper* in July was fully-booked and much appreciated by the 'over twelves'.

This was followed in August by the Summer barbeque where our speakers, Jane and Dean Hemmingway from *Raptor Rescue*, gave the Juniors an illustrated talk on Owls and other Birds of Prey, using animals in our own collection as models.

We took a full double-decker bus load of Juniors to Knowsley Safari Park in September where we had a guided tour from Curator Nick Ellerton – and a wonderful time was had by all.

October saw another new event with wildlife artist, Jo Lynch, imparting the joys and skills involved in drawing from live, moving animals. It was enormous fun and the practical results were brilliant. A successful and interactive visit to Manchester Museum in November, followed by the Christmas party in December, rounded off another terrific year.

Huge thanks as ever go to the dedicated team of adult volunteers without whom these events could not happen.

Livestock: Summary

Table 1 STOCK AS OF 31 DECEMBER 2004

	Number of Species End 04	End 03	Number of Specimens End 04	End 03	Species Bred & Reared End 04	End 03	Specimens Bred & Reared End 04	End 03
Mammals	62	59	968	976	31	23	424	450
Birds	162	171	995	950	45	49	251	196
Reptiles	47	48	219	264	7	6	85	65
Amphibians	13	16	496	177	8	3	565	34
Fishes	97	96	3029	2494	22	36	*	*
Invertebrates	31	37	1586+	957+	20	20	*	*
Totals	**412**	**427**	**7293+**	**5818+**	**133**	**137**	**1325**	**745**

Table 2 SUMMARY - THREATENED SPECIES 2004

	2004	2003		2004	2003
Threatened species	232	231	Threatened species held and bred to date	170	166
% of all livestock	56%	54%	% of threatened species bred	73%	70%

Table 3 REPORT SUMMARY

	IUCN Red List	Managed Programmes	Total IUCN &/or Managed Programmes
Mammals	54	49	59
Birds	82	66	96
Reptiles	20	18	23
Amphibians	5	1	5
Fishes	29	15	31
Invertebrates	4	17	18
Totals	**194**	**166**	**232**

Table 4 SUMMARY OF NUMBERS OF SPECIES IN EACH MAIN IUCN RED LIST CATEGORY

EW – Extinct in the wild	7
CR – Critically endangered	33
EN – Endangered	34
VU – Vulnerable	69
NT – Near threatened	46
DD – Data deficient	5
Total	**194**

Table 5 TRANSFERS TO OTHER COLLECTIONS 2004

* Not included (See Table 1)

Mammals	16 species sent to	19 collections
Birds	39 species sent to	37 collections
Reptiles	15 species sent to	17 collections
Amphibians	8 species sent to	13 collections
Aquarium	16 species sent to	13 collections

Table 6 CITES SUMMARY 2004

CITES	Category I	Category II	Total
Mammals	27	12	39
Birds	30	57	87
Reptiles	11	28	39
Amphibians	0	6	6
Fishes	2	1	3
Invertebrates	0	8	8
Totals	**70**	**112**	**182**

Table 7 CODES USED FOR LIVESTOCK LISTS

* = Not currently in a breeding situation or group.

\+ = recent arrivals or not yet of breeding age.

CITES = Convention on International Trade in Endangered Species

CR = Critically endangered

ASP = Aquatic Sustainability Programme

DD = Data deficient

DNS = Did not survive

EEP = European Endangered Species Programme

EN = Endangered

ENP = English Nature Programme

ESB = European Studbook

EW = Extinct in the wild

JMSP = Joint Management of Species Programmes

NT = Near threatened

N/A = Not applicable

ISB = International Studbook

VU = Vulnerable

X = bred in indicated period

'New to collection' species programmes in parenthesis are 'proposed' programmes

References: Walter, O. & Bemment, N.(Eds) (2002), *Joint Management of Species Programmes Annual Report 2002*, The British & Irish Association of Zoos and Aquariums, London - IUCN (1998), *World List of Threatened Trees*, Oldfield, S. Lusty, C. & MacKinven, A. (compilers), World Conservation Press, Cambridge, UK - IUCN 2004. *2004 IUCN Red List of Threatened Species*. <www.redlist.org> - EAZA 2003 <www.eaza.net>

Livestock: Conservation Breeding

Threatened Species

We continue to maximise our contribution to conservation through our commitment to supporting threatened species of animals and plants. Our zoo populations act as lifeboats for some species, for example the critically endangered Bali Starling and Waldrapp Ibis with many more individuals held safely in zoos than remain perilously in the wild.

Species extinct in the wild may be held safely in zoos until conditions become suitable for reintroduction. This has already happened with Pere David's Deer from Chester Zoo previously returned to their native China and is planned for Socorro Doves on the small island of Socorro off the western coast of Mexico.

Chester has played a significant role in assisting the re-establishment of wild animal populations through workshops and specialist advice provided to numerous reintroduction programmes throughout the world.

Some conservation breeding programmes at Chester are for species now extinct in nature. This category includes Scimitar-horned Oryx, Socorro Doves, two Mexican fishes, and also several Partula snails now extinct on Hawaii.

Conservation Breeding

Chester Zoo participated in 166 conservation breeding programmes in 2004. These include European Endangered Species Programmes (EEPs), European Studbooks (ESBs), International Studbooks (ISBs), UK (BIAZA) Joint Management of Species Programmes (JMSPs), Aquatic Sustainability Programmes (ASPs) and English Nature Programmes.

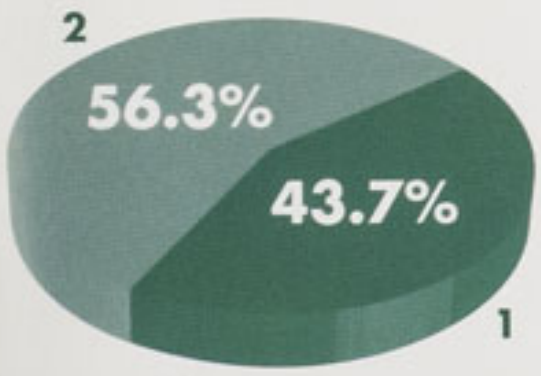
Managed breeding programmes cover a range of species from EEPs for Asian Elephants, Black Rhinos and Orang-utans to ASPs for many threatened fish and invertebrates. Working within these genetically managed zoo breeding programmes, we may at times be requested not to breed from some animals or from certain species.

Changes in threat status may occur as a result of direct conservation action or through better knowledge of a species' wild status. Species in the collection previously considered threatened may lose that status and conversely other species may become listed.

We must respond promptly to such changes and our evolving collection aims to balance support for those species under greatest threat with continuing to enthuse our visitors about the diversity of life and helping them understand the threats now facing wildlife.

Every species has to 'justify' its inclusion in our collection. If not of threatened status then justification as 'ambassador' species may be through their education value or use as related 'model species' for conservation or husbandry research programmes.

Threatened and Ambassador Species of Animals



1 Ambassador Species
2 Threatened Species

*Ambassador Species	180 (43.7%)
**Threatened Species	232 (56.3%)
Total number of species held during the year:	**412**

*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.

Sumatran Orangutan (*Pongo abelii*). Photograph: Chester Zoo Archives.

Livestock: 2004 Threatened Species – IUCN Red List

	Common Name & Scientific Name		BRED '04	BRED <'04	IUCN RED LIST	MANAGED PROGRAMME
MAMMALS:						
1	Western Grey Kangaroo	*Macropus fuliginosus*	X	X		ESB
2	Rodrigues Fruit Bat	*Pteropus rodricensis*	X	X	CR	EEP/ISB
3	Ring-tailed Lemur	*Lemur catta*	X	X	VU	ESB
4	Black and White Ruffed Lemur	*Varecia variegata variegata*	X	X	EN	EEP/ISB
5	Red Ruffed Lemur	*Varecia variegata rubra*	X	X	CR	EEP/ISB
6+	Geoffroy's Marmoset	*Callithrix geoffroyi*	X	N/A	VU	EEP
7+	Alaotran Gentle Lemur	*Hapalemur griseus alaotrensis*	N/A	N/A	CR	ESB
8	Cotton-top Tamarin	*Saguinus oedipus*	X	X	EN	EEP/ISB
9+	Pied Tamarin	*Saguinus bicolor*	N/A	N/A	CR	ISB
10	Buffy-headed Capuchin	*Cebus xanthosternos*	X	X	CR	EEP
11	Colombian Black Spider Monkey	*Ateles fusciceps robustus* [*A. geoffroyi rufiventris*]	X	X	VU	JMSP/EEP
12	Lion-tailed Macaque	*Macaca silenus*	X	X	EN	JMSP/EEP/ISB
13	Sulawesi Crested Macaque	*Macaca nigra*	X	X	EN	EEP
14	Mandrill	*Mandrillus sphinx*	X	X	VU	ESB
15	Chimpanzee	*Pan troglodytes*	X	X	EN	JMSP
16	Bornean Orang-utan	*Pongo pygmaeus*		X	EN	EEP/ISB
17	Sumatran Orang-utan	*Pongo abelii*	X	X	CR	EEP/ISB
18	Prairie Marmot	*Cynomys ludovicianus*		X	NT	
19	African Crested Porcupine	*Hystrix cristata*		X	NT	
20	Capybara	*Hydrochaeris hydrochaeris*		X		JMSP
21*+	Azara's Agouti	*Dasyprocta azarae*	N/A	N/A	VU	
22	Harvest Mouse	*Micromys minutus*	X	X	NT	
23	Turkish Spiny Mouse	*Acomys cilicicus*	X	X	CR	
24	European Water Vole	*Arvicola terrestris*	N/A	N/A		JMSP
25	Maned Wolf	*Chrysocyon brachyurus*		X	NT	EEP/ISB
26	Bush Dog	*Speothos venaticus*	X	X	VU	EEP/ISB
27*	Red Panda	*Ailurus fulgens fulgens*		X	EN	EEP/ISB
28*+	Spectacled Bear	*Tremarctos ornatus*	N/A	N/A	VU	ISB/EEP
29	Oriental Small-clawed Otter	*Aonyx cinereus*		X	NT	JMSP/ISB
30	Amur Tiger	*Panthera tigris altaica*		X	CR	EEP/ISB
31	Asiatic Lion	*Panthera leo persica*		X	CR	EEP
32*	Jaguar	*Panthera onca*		X	NT	ESB
33	Californian Sealion	*Zalophus californianus*	X	X		ESB
34	Asiatic Elephant	*Elephas maximus*	X	X	EN	EEP
35	Persian Onager	*Equus hemionus onager*	X	X	CR	EEP/ISB
36*	Grevy's Zebra	*Equus grevyi*		N/A	EN	EEP/ISB
37*	Przewalski Horse	*Equus ferus przewalskii*		X	EW	EEP/ISB
38	South American Tapir	*Tapirus terrestris*	X	X	VU	ESB
39	Eastern Black Rhinoceros	*Diceros bicornis michaeli*			CR	EEP/ISB
40	Babirusa	*Babyrousa babyrussa*			VU	EEP/ISB
41	Red River Hog	*Potamochoerus porcus pictus*	X	X		ESB
42	Bactrian Camel	*Camelus bactrianus*	X	X	CR	
43	Chilean Pudu	*Pudu pudu*		X	VU	EEP/ISB
44	Burmese Brow-antlered Deer	*Cervus eldi thamin*	X	X	NT	ISB
45	Philippine Spotted Deer	*Cervus alfredi*	X	X	EN	
46*	Pere David's Deer	*Elaphurus davidianus*		X	CR	
47	Giraffe	*Giraffa camelopardalis*		X	NT	EEP
48	Okapi	*Okapi johnstoni*	N/A	N/A	NT	ISB/EEP
49	Lowland Anoa	*Bubalus depressicornis*	X		EN	EEP/ISB
50*	Barasingha	*Cervus duvaucelii duvaucelii*			VU	ISB
51	Congo Buffalo	*Syncerus caffer nanus*	X	X	NT	
52	Eastern Bongo	*Tragelaphus eurycerus isaaci*	X	X	EN	EEP/ISB
53	West African Sitatunga	*Tragelaphus spekei gratus*	X	X	NT	ESB
54*	Sable Antelope	*Hippotragus niger*			NT	ESB
55*	Kafue Flats Red Lechwe	*Kobus leche kafuensis*		X	VU	JMSP
56	Scimitar-horned Oryx	*Oryx dammah*		X	EW	EEP/ISB
57	Gemsbok	*Oryx gazella gazella*	X	X	NT	JMSP
58	Blackbuck	*Antilope cervicapra*		X	NT	
59	Arabian Mountain Gazelle	*Gazella gazella cora*		X	VU	JMSP
BIRDS:						
1	Common Rhea	*Rhea americana*		X	NT	
2*	Southern Cassowary	*Casuarius casuarius*			N/A	VU JMSP
3	Humboldt's Penguin	*Spheniscus humboldti*	X	X	VU	EEP
4	Dalmatian Pelican	*Pelecanus crispus*			VU	EEP
5*	Black Stork	*Ciconia nigra*				ESB
6	Waldrapp Ibis	*Geronticus eremita*	X	X	CR	EEP
7	Chilean Flamingo	*Phoenicopterus chilensis*	X	X	NT	
8	Black-billed Whistling Duck	*Dendrocygna arborea*	X	X	VU	
9	Lesser White-fronted Goose	*Anser erythropus*	X		VU	
10	Red-breasted Goose	*Branta ruficollis*		X	VU	
11	Hawaiian Goose	*Branta sandvicensis*		X	VU	
12	Baikal Teal	*Anas formosa*		X	VU	
13	Laysan Teal	*Anas laysanensis*		X	CR	
14	Baer's Pochard	*Aythya baeri*	X	X	VU	
15	Ferruginous Duck	*Aythya nyroca*	X	X	NT	
16	Marbled Teal	*Marmaronetta angustirostris*	X	X	VU	
17	White-headed Duck	*Oxyura leucocephala*		X	EN	
18	Andean Condor	*Vultur gryphus*		X	NT	EEP
19	European Black Vulture	*Aegypius monachus*			NT	EEP
20*	Griffon Vulture	*Gyps fulvus*				ESB
21	Mauritius Kestrel	*Falco punctatus*		X	VU	
22	Red-billed Curassow	*Crax blumenbachii*	X	N/A	EN	EEP/ISB
23	Roulroul Partridge	*Rollulus roulroul*	X	X	NT	
24*	Blyth's Tragopan	*Tragopan blythii*		X	VU	JMSP/ISB/ESB
25	Satyr Tragopan	*Tragopan satyra*		X	NT	
26	Palawan Peacock Pheasant	*Polyplectron emphanum*		X	VU	EEP
27	Mountain Peacock Pheasant	*Polyplectron inopinatum*		X	VU	ESB/ISB
28	Malayan Peacock Pheasant	*Polyplectron malacense*		N/A	VU	ESB/ISB
29+	Great Argus Pheasant	*Argusianus argus*		N/A	NT	ESB
30	Edwards' Pheasant	*Lophura edwardsi*		X	EN	EEP/ISB
31	Malayan Crestless Fireback	*Lophura erythrophthalma*		X	VU	ESB
32	Vietnamese Pheasant	*Lophura hatinhensis*		X	EN	ISB
33	Green Peafowl	*Pavo muticus*		X	VU	
34	Congo Peafowl	*Afropavo congensis*		X	VU	EEP/ISB
35	Red-crowned Crane	*Grus japonensis*		X	EN	EEP/ISB
36	White-naped Crane	*Grus vipio*		X	VU	EEP/ISB
37	Wattled Crane	*Grus carunculatus*			VU	JMSP/ISB
38	Blue Crane	*Grus paradisea*		X	VU	ESB
39	West African Crowned Crane	*Balearica pavonina pavonina*	X	X	NT	ESB/JMSP
40	Pink Pigeon	*Streptopelia mayeri*		X	EN	EEP/ISB
41	Blue Crowned Pigeon	*Goura cristata*			VU	ESB/ISB
42	Victoria Crowned Pigeon	*Goura victoria*	X	X	VU	ESB/ISB
43	Nicobar Pigeon	*Caloenas nicobarica*		X	NT	
44	Mountain Witch Dove	*Geotrygon versicolor*		X	NT	
45	Mindanao Bleeding-heart	*Gallicolumba criniger*	X		EN	ESB
46	Luzon Bleeding-heart	*Gallicolumba luzonica*		X	NT	ESB
47	Jambu Fruit Dove	*Ptilinopus jambu*		X	NT	
48	White-naped Pheasant Pigeon	*Otidiphaps nobilis aruensis*	X	N/A		ESB
49+	Socorro Dove	*Zenaida macroura graysoni*		N/A	EW	EEP
50	Mount Apo Lorikeet	*Trichoglossus johnstoniae*	X	X	NT	ESB
51	Red and Blue Lory	*Eos histrio*			EN	ESB
52	Black-winged Lory	*Eos cyanogenia*			VU	ESB
53	Blue-streaked Lory	*Eos reticulata*			NT	JMSP
54	Yellow-backed Chattering Lory	*Lorius garrulus flavopalliatus*		X	EN	ESB
55	Palm Cockatoo	*Probosciger aterrimus*				EEP
56	Carnaby's Black Cockatoo	*Calyptorhynchus latirostris*			EN	ESB
57	Blue-eyed Cockatoo	*Cacatua ophthalmica*	X	X		ESB
58	Red-vented Cockatoo	*Cacatua haematuropygia*			CR	EEP
59	Kea	*Nestor notabilis*	X	X	VU	ESB
60	Black-cheeked Lovebird	*Agapornis nigrigenis*			VU	JMSP
61	Hyacinthine Macaw	*Anodorhynchus hyacinthinus*	X	X	EN	EEP
62	Blue-throated Macaw	*Ara glaucogularis*	X		CR	EEP/ISB
63	Scarlet Macaw	*Ara macao*				JMSP
64	Blue-winged Macaw	*Primolius maracana*	X	X	NT	
65	Red-masked Conure	*Aratinga erythrogenys*		X	NT	
66	Golden-capped Conure	*Aratinga auricapilla*		X	NT	
67	Golden Conure	*Guaruba guarouba*	X	X	EN	ESB/ISB
68	Thick-billed Parrot	*Rhynchopsitta pachyrhyncha*		X	EN	ESB
69	Princess Parrot	*Polytelis alexandrae*	X		NT	
70	Blue-throated Conure	*Pyrrhura cruentata*	X	X	VU	JMSP
71*	Yellow-faced Parrotlet	*Forpus xanthops*		X	VU	
72	Ecuadorian Amazon	*Amazona autumnalis lilacina*		X		EEP
73*	Cuban Amazon	*Amazona leucocephala*		X	NT	JMSP
74	Green-cheeked Amazon	*Amazona viridigenalis*		X	EN	EEP
75	Red-tailed Amazon	*Amazona brasiliensis*		X	VU	EEP
76	St Lucia Amazon	*Amazona versicolor*			VU	ESB
77	Fischer's Turaco	*Tauraco fischeri*		X	NT	ESB
78	Violet Plantain Eater	*Musophaga violacea*		X		ESB
79	White-faced Scops Owl	*Otus leucotis*	X	X		JMSP
80	Spectacled Owl	*Pulsatrix perspicillata*	X	X		JMSP
81	Lilac-breasted Roller	*Coracias caudata*	X	X		JMSP
82	Great Hornbill	*Buceros bicornis*		X	NT	EEP/ISB
83	Rhinoceros Hornbill	*Buceros rhinoceros*			NT	ESB
84	Wrinkled Hornbill	*Aceros corrugatus*		X	NT	EEP
85	Mindanao White-billed Hornbill	*Aceros leucocephalus*			NT	
86	Tarictic Hornbill	*Penelopides sp.*		X		ESB
87	Gouldian Finch	*Erythrura gouldiae*		X	EN	
88	Montserrat Oriole	*Icterus oberi*			CR	
89*	Diamond Sparrow	*Stagonopleura guttata*			NT	
90	Java Sparrow	*Padda oryzivora*	X	X	VU	
91	Yellow-throated Laughing Thrush	*Garrulax galbanus*		X		JMSP
92	Omei Shan Liocichla	*Liocichla omeiensis*		X	VU	JMSP
93	Bali Starling	*Leucopsar rothschildi*		X	CR	EEP/JMSP
94	Emerald Starling	*Coccycolius iris*	X	X	DD	
95*	Red-billed Chough	*Pyrrhocorax pyrrhocorax*		X		JMSP
96	Red Bird of Paradise	*Paradisaea rubra*	X	X	NT	ISB
REPTILES:						
1	Asian Box Turtle	*Cuora amboinensis*		X	VU	ESB
2+	Yellow-footed Tortoise	*Geochelone denticulata*			VU	
3	Greek Tortoise	*Testudo graeca*		X	VU	
4	Hermann's Tortoise	*Testudo hermanni*		X	NT	
5	Egyptian Tortoise	*Testudo kleinmanni*			CR	EEP
6	Radiated Tortoise	*Geochelone radiata*		N/A	VU	ESB
7	Pancake Tortoise	*Malacochersus tornieri*		N/A	VU	ESB
8	Black Marsh Turtle	*Siebenrockiella crassicolis*			VU	ESB
9	Spiny Turtle	*Heosemys spinosa*			EN	ESB
10	West African Dwarf Crocodile	*Osteolaemus tetraspis*			VU	
11	Sand Lizard	*Lacerta agilis*	X	X		ENP
12	Standing's Day Gecko	*Phelsuma standingi*	X		VU	JMSP
13	Yellow-headed Day Gecko	*Phelsuma klemmeri*	X			JMSP
14	Rhinoceros Iguana	*Cyclura cornuta*		X	VU	ESB
15	Philippine Sailfin Lizard	*Hydrosaurus pustulatus*	X	X	DD	JMSP
16	Prehensile-tailed Skink	*Corucia zebrata*	X	X		JMSP
17+	Komodo Dragon	*Varanus komodoensis*			VU	EEP
18	Cuban Boa	*Epicrates anguifer*		X	NT	EEP
19	Jamaican Boa	*Epicrates subflavus*		X	VU	EEP
20	Madagascan Tree Boa	*Sanzinia madagascariensis*		X	VU	EEP
21	Aruba Island Rattlesnake	*Crotalus unicolor*		X	CR	
22	Gila Monster	*Heloderma suspectum*		N/A	VU	EEP
23	Beaded Lizard	*Heloderma horridum*			VU	EEP
AMPHIBIANS:						
1	Axolot	*Ambystoma mexicanum*	X	X	VU	
2+	Blue Poison Arrow Frog	*Dendrobates azureus*	X		VU	
3	Golden Poison Dart Frog	*Phyllobates terribilis*	X		EN	
4	Mallorcan Midwife Toad	*Alytes muletensis*	X	X	VU	
5+	Puerto Rican Crested Toad	*Bufo lemur*			CR	EEP
FISHES:						
1	Freshwater Stingray	*Potamotrygon motoro*	X	X	DD	
2	Black Ruby Barb	*Puntius nigrofasciatus*		X	NT	
3	Cherry Barb	*Puntius titteya*		X	NT	
4	Omani Blind Cave Fish	*Garra barreimiae*		X	VU	
5	Pla Eesok	*Probarbus jullieni*			EN	
6	Red Rainbow Fish	*Glossolepis incisus*		X	VU	
7	Duck-billed Fish	*Xenopoecilus sarasinorum*		X	EN	
8	Boeseman's Rainbow Fish	*Melanotaenia boesemani*		X	EN	
9	Lake Kutubu Rainbow Fish	*Melanotaenia lacustris*	X	X	VU	
10	Dwarf Loach	*Botia sidthimunki*			CR	
11	Lake Victoria Cichlid	*Yssichromis argens*	X	X	EW	ASP
12	Lake Victoria Cichlid	*Yssichromis pyrithocephalus*	X	X	VU	ASP
13	Spotted Dambo	*Paretroplus maculatus*			CR	ASP
14	Pin Striped Dambo	*Paretroplus menarambo*	X			ASP
15	Konye Barombi Mbo Cichlid	*Konia eisentrauti*	X	X	CR	ASP
16	Pungli Barombi Mbo Cichlid	*Pungu maclareni*			CR	ASP
17	Unga Barombi Mbo Cichlid	*Sarotherodon linnellii*			CR	ASP
18	Leka Keppe Barombi Mbo Cichlid	*Sarotherodon lohbergeri*			CR	ASP
19	Naess Barombi Mbo Cichlid	*Stomatepia mariae*	X	X	CR	ASP
20	Pindu Barombi Mbo Cichlid	*Stomatepia pindu*		X	CR	ASP
21	Asiatic Arowana	*Scleropages formosus*			EN	
22	Dwarf Rainbow Fish	*Melanotaenia praecox*		X	DD	
23	Killifish	*Pachypanchax sakaramyi*	X	X	CR	
24	Butterfly Goodeid	*Ameca splendens*	X	X	EW	ASP
25	Bold Characodon	*Characodon audax*		X	VU	ASP
26	Golden Saw-finned Goodeid	*Skiffia francesae*	X	X	EW	ASP
27	Crescent Zoe	*Zoogoneticus tequila*	X	X		ASP
28	Mexican Blind Cave Fish	*Astyanax mexicanus jordani*			VU	
29	Seahorse	*Hippocampus kuda sp.*	X	X	VU	
30	Sea Pony	*Hippocampus fuscus*	X	X	DD	
31	Knysa Seahorse	*Hippocampus capensis*		X	EN	ASP
INVERTEBRATES						
1	Partula Snail	*Partula mirabilis*		X	EW	EEP
2	Partula Snail	*Partula varia*		X	CR	EEP
3+	Partula Snail	*Partula hyalina*	X	N/A	CR	EEP
4	Mexican Redknee Tarantula	*Brachypelma smithi*		X	NT	
5	Daisy Coral	*Goniopora stokesi*				ASP
6	Beaker Coral	*Acanthophyllia deshayesiana*				ASP
7	Bubble Coral	*Plerogyra sinuosa*				ASP
8	Branch Coral	*Acropora humilis*				ASP
9	Brain Coral	*Trachyphyllia geoffroyi*				ASP
10	Bouquet Coral	*Euphyllia glabrescens*				ASP
11	Bowl Coral	*Turbinaria mesenterina*				ASP
12	Bowl Coral	*Turbinaria peltata*				ASP
13	Star Coral	*Favia sp.*		X		ASP
14	Soft Coral	*Xenia sp.*				ASP
15	Soft Coral	*Sinularia sp.*		X		ASP
16	Soft Coral	*Cladiella sp.*		X		ASP
17	Zoanthid Colony	*Zoanthid sp.*		X		ASP
18	Mouse Ear Coral	*Lobophytum crassum*		X		ASP

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Livestock: 2004 Threatened Species of Plants – IUCN Red List

Common Name	Scientific Name	2004 IUCN Red List	FAMILY
PTERIDOPHYTA	*Platycerium ridleyi*	EW	Polypodiaceae
GYMNOSPERMS			
Monkey Puzzle	*Araucaria araucana*	VU	Araucariaceae
Norfolk Island Pine	*Araucaria heterophylla*	VU	Araucariaceae
Lawson's Cypress	*Chamaecyparis lawsoniana*	VU	Cupressaceae
	Cupressus guadalupensis var. *forbesii*	VU	Cupressaceae
	Dioon spinulosum	LR	Cycadaceae
Maidenhair Tree	*Ginkgo biloba*	EN	Ginkgoaceae
Down Redwood	*Metasequoia glyptostroboides*	CR	Taxodiaceae
	Picea alcoquiana	VU	Pinaceae
	Picea engelmannii	VU	Pinaceae
	Picea omorika	VU	Pinaceae
	Pinus muricata	VU	Pinaceae
	Pinus peuce	VU	Pinaceae
	Podocarpus nubigenus	VU	Podocarpaceae
Willowleaf Podocarp	*Podocarpus salignus*	VU	Podocarpaceae
Golden Larch	*Pseudolarix amabilis*	VU	Pinaceae
Giant Redwood	*Sequoiadendron giganteum*	VU	Taxodiaceae
	Widdringtonia schwarzii	EN	Cupressaceae
	Zamia fischeri	VU	Zamiaceae
Cardboard Palm	*Zamia furfuracea*	VU	Zamiaceae
FLOWERING PLANTS: DICOTYLEDONS			
	Aeonium castellopaivae	VU	Crassulaceae
	Aeonium cuneatum	VU	Crassulaceae
	Aeonium goochiae	VU	Crassulaceae
	Aeonium haworthii	VU	Crassulaceae
	Aeonium rubrolineatum	VU	Crassulaceae
	Ariocarpus agavoides	EN	Cactaceae
	Ariocarpus bravoanus	EN	Cactaceae
	Ariocarpus fissuratus	VU	Cactaceae
	Ariocarpus retusus ssp. *trigonus*	VU	Cactaceae
	Ariocarpus scaphirostris	VU	Cactaceae
	Astrophytum ornatum	DD	Cactaceae
	Aztekium ritteri	VU	Cactaceae
	Berberidopsis corallina	EN	Flacourtiaceae
	Betula chichibuensis	VU	Betulaceae
	Brachyglottis compacta	LR	Asteraceae
Island Bindweed	*Calystegia macrostegia*	VU	Convulvulaceae
	Carmichaelia curta	LR	Leguminosae
	Carmichaelia kirkii	EN	Leguminosae
	Cephalocereus senilis	VU	Cactaceae
Weeping Tree Broom	*Chordospartium muritai*	CR	Leguminosae
Weeping Tree Broom	*Chordospartium stevensonii*	VU	Leguminosae
Glory Pea	*Clianthus puniceus*	EN	Leguminosae
	Copiapoa bridgesii	VU	Cactaceae
	Copiapoa calderana	VU	Cactaceae
	Copiapoa humilis	VU	Cactaceae
	Copiapoa hypogaea	VU	Cactaceae
	Copiapoa krainziana	VU	Cactaceae
	Copiapoa lauii	VU	Cactaceae
	Copiapoa tennuissima	EN	Cactaceae
	Corokia macrocarpa	LR/NT	Grossulariaceae
	Coryphantha elephantidens	VU	Cactaceae
	Coryphantha longicornis	NT	Cactaceae
Chile Lantern Tree	*Crinodendron hookerianum*	LR/NT	Elaeocarpaceae
Hankerchief Tree	*Davidia involucrata* var. *involucrata*	LR	Cornaceae
Bleeding Hearts	*Dicentra spectabilis*	NT	Fumariaceae
Venus Fly Trap	*Dionaea muscipula*	VU	Droseraceae
	Drosera adalae	VU	Droseraceae
	Drosera brevifolia	VU	Droseraceae
	Echeveria lauii	NT	Crassulaceae
Golden Barrel	*Echinocactus grusonii*	CR	Cactaceae
	Echium pininana	VU	Boraginaceae
	Echium wilpretii	VU	Boraginaceae
	Eriogonum cinereum	VU	Polygonaceae
	Eriogonum grande var. *rubescens*	VU	Polygonaceae
	Escobaria chaffeyi	VU	Cactaceae
	Eucryphia glutinosa	LR	Eucryphiaceae
	Euphorbia decaryi	NT	Euphorbiaceae
	Euphorbia mellifera	LR	Euphorbiaceae
	Ferocactus peninsulae	EN	Cactaceae
	Ferocactus santamaria	EN	Cactaceae
	Gunnera hamiltonii	EN	Gunneraceae
	Hebe armstrongii	VU	Scrophulariacea
	Hebe cupressoides	VU	Scrophulariacea
	Ilex perado platyphylla	EN	Aquifoliaceae
	Lithops aucampiae	VU	Aizoaceae
	Lithops bromfieldii	NT	Aizoaceae
	Lithops comptonii	VU	Aizoaceae
	Lithops gracilidelineata	VU	Aizoaceae
	Lithops geyeri	VU	Aizoaceae
	Lithops lesliei burchellii	VU	Aizoaceae
	Lithops schwantesii	VU	Aizoaceae
Santa Cruz Island Ironwood	*Lyonothamnus floribundus aspleniifolius*	VU	Rosaceae
	Mammillaria angelensis	VU	Cactaceae
	Mammillaria backbergiana var. *ernestii*	VU	Cactaceae
	Mammillaria bocasana	VU	Cactaceae
	Mammillaria bocensis	VU	Cactaceae
	Mammillaria bombycina	VU	Cactaceae
	Mammillaria cerralboa	VU	Cactaceae
	Mammillaria duoformis	VU	Cactaceae
	Mammillaria magnifica	VU	Cactaceae
	Mammillaria matudae	VU	Cactaceae
	Mammillaria mercadensis patonii	VU	Cactaceae
	Mammillaria meyranii	VU	Cactaceae
	Mammillaria microhelia	VU	Cactaceae
	Mammillaria moelleriana	VU	Cactaceae
	Mammillaria napina	VU	Cactaceae
	Mammillaria parkinsonii	VU	Cactaceae
	Mammillaria peninsularis	VU	Cactaceae
	Mammillaria pondii	VU	Cactaceae
	Mammillaria pringlei	VU	Cactaceae
	Matucana aurantiaca	EN	Cactaceae
	Matucana krahnii	VU	Cactaceae
	Matucana madisoniorum	EN	Cactaceae
	Matucana paucicostata	VU	Cactaceae
	Matucana tuberculata	VU	Cactaceae
	Michelia chapaensis	LR	Magnoliaceae
Castle Hill Forget-me-not	*Myosotis colensoi*	VU	Boraginaceae
Southern Broom	*Notospartium glabrescens*	LR/NT	Leguminosae
Southern Broom	*Notospartium torulosum*	LR/NT	Leguminosae
Daisy Bush	*Olearia hectoris*	EN	Asteraceae
Daisy Bush	*Olearia traversii*	LR/NT	Asteraceae
	Pelargonium exhibens	NT	Geraniaceae
	Phellodendron amurense	EN	Rutaceae
	Pittosporum obcordatum	LR/NT	Pittosporaceae
	Protea aurea	VU	Proteaceae
	Protea roupelliae var. *hamiltonii*	EN	Proteaceae
	Protea venusta	VU	Proteaceae
	Sarracenia alata	VU	Sarraceniaceae
	Sarracenia flava	VU	Sarraceniaceae
	Sarracenia leucophylla	VU	Sarraceniaceae
	Sarracenia oreophylla	VU	Sarraceniaceae
	Sarracenia rubra	VU	Sarraceniaceae
	Schwantesia treibnerii	NT	Aizoaceae
	Stenocactus coptonogonus	VU	Cactaceae
Jade Vine	*Strongylodon macrobotrys*	VU	Leguminosae
	Tecomanthe speciosa	EN	Bignoniaceae
St. Helena Ebony	*Trochetiopsis ebenus*	CR	Sterculiaceae
	Turbinicarpus gielsdorfianus	VU	Cactaceae
	Turbinicarpus hoferi	VU	Cactaceae
	Turbinicarpus knuthianus	VU	Cactaceae
	Turbinicarpus lauii	VU	
	Turbinicarpus lophophoroides	VU	Cactaceae
	Turbinicarpus pseudomacrochele	VU	Cactaceae Cactaceae
	Turbinicarpus saueri	NT	
	Turbinicarpus schmiedickeanus flaviflorus	EN	Cactaceae
	Turbinicarpus schmiedickeanus gracilis	VU	Cactaceae
	Turbinicarpus schmiedickeanus klinkerianus	VU	Cactaceae
	Turbinicarpus schmiedickeanus macrochele	VU	Cactaceae
	Turbinicarpus schmiedickeanus schwarzii	VU	Cactaceae
	Turbinicarpus swobodae	VU	
FLOWERING PLANTS: MONOCOTYLEDONS			
	Agave chrysantha	VU	Agavaceae
	Agave distans	VU	Agavaceae
	Agave harrisii	VU	Agavaceae
	Agave victoriae reginae	EN	Agavaceae
	Astelia chathamica	EN	Liliaceae
	Beccariophoenix madagascariensis	CR	Palmae
	Bulbophylum rothschildeanum	EN	Orchidaceae
	Calanthe rubens	VU	Orchidaceae
	Cattleya trianae	NT	Orchidaceae
	Chamaedorea adescens	VU	Palmae
	Chamaedorea radicalis	VU	Palmae
	Chamaedorea stolonifera	VU	Palmae
	Chambeyronia macrocarpa	LR	Palmae
	Coelogyne barbata	NT	Orchidaceae
	Coelogyne cristata	VU	Orchidaceae
	Coelogyne flaccida	NT	Orchidaceae
	Dracaena draco	VU	Dracaenaceae
Canary Island Dragon Tree	*Dracula vampira*	VU	Orchidaceae
	Dracula wallisii	VU	Orchidaceae
	Dryadella hirtzii	VU	Orchidaceae
	Dypsis decaryi	VU	Palmae
	Encyclia cochleata	VU	Orchidaceae
	Encyclia mariae	VU	Orchidaceae
	Epidendrum fimbriatum	VU	Orchidaceae
	Haworthia truncata	VU	Aloaceae
	Howea belmoreana	VU	Palmae
Sentry Palm	*Howea forsteriana*	VU	Palmae
Kentia Palm	*Johannesteijsmannia magnifica*	EN	Palmae
	Jubaea chilensis	VU	Palmae
	Laelia gouldiana	EN	Orchidaceae
	Latania lontaroides	EN	Palmae
	Masdevallia chaetostoma	VU	Orchidaceae
	Masdevallia dynastes	VU	Orchidaceae
	Masdevallia instar	VU	Orchidaceae
	Masdevallia menator	EW	Orchidaceae
	Masdevallia ova-avis	VU	Orchidaceae
	Masdevallia panguiensis	EN	Orchidaceae
	Masdevallia rolfeana	VU	Orchidaceae
	Masdevallia sanctae-inesae	LR	Orchidaceae
	Masdevallia stenorhyncus	VU	Orchidaceae
	Masdevallia tovarensis	DD	Orchidaceae
	Paphiopedilum exul	EN	Orchidaceae
	Paphiopedilum niveum	NT	Orchidaceae
	Paphiopedilum phillipinense	NT	Orchidaceae
	Paphiopedilum rothschildianum	EN	Orchidaceae
	Paphiopedilum wardii	VU	Orchidaceae
	Pleurothallis cardiophylla	DD	Orchidaceae
	Pleurothallis phyllocardia	EN	Orchidaceae
	Pleurothallis scoparum	VU	Orchidaceae
	Pleurothallis volcanica	VU	Orchidaceae
	Porroglossum amethystinum	VU	Orchidaceae
	Porroglossum dalstroemii	LR	Orchidaceae
	Ptychosperma gracile	EN	Palmae
	Puya coquimbensis	VU	Bromeliaceae
	Ravenea rivularis	VU	Palmae
	Restrepiopsis pandurata	LR	Orchidaceae
	Rossioglossum insleayi	VU	Orchidaceae
	Scaphosepalum beluosum	LR	Orchidaceae
	Scaphosepalum microdactylum	LR	Orchidaceae
	Sobralia macrantha	VU	Orchidaceae
	Stanhopea tigrina	VU	Orchidaceae
	Stelis hirtzii	VU	Orchidaceae
	Syagrus flexuosa	LR	Palmae
Cotton Palm	*Vanda coerulea*	VU	Orchidaceae
	Washingtonia filifera	LR/NT	Palmae
	Wodyetia bifurcata	VU	Palmae

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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.

Livestock: General Holdings – Mammals

Common Name & Scientific Name		STOCK 31/12/03			RECEIVED			BORN/H'CH			DNS 30 DAYS			DEATHS/OTHERS			DISPOSALS			STOCK 31/12/04			CITES
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
MARSUPIALIA																							
Red-necked Wallaby	*Macropus rufogriseus*	0	11	0				2	2	0	0	1	0	2	1	0				0	11	0	
Western Grey Kangaroo	*Macropus fuliginosus*	4	5	0				0	0	2	0	0	1							4	5	1	
CHIROPTERA																							
Rodrigues Fruit Bat	*Pteropus rodricensis*	33	25	0				2	2	10				2	3	0	3	3	0	30	21	10	II
Seba's Short-tailed Bat	*Carollia perspicillata*	0	0	178				0	0	132				0	0	19	0	0	40	0	0	251	
PRIMATES																							
Alaotran Gentle Lemur	*Hapalemur griseus alaotrensis*				1	1	0													1	1	0	I
Ring-tailed Lemur	*Lemur catta*	10	10	0				5	3	2	2	0	2	0	1	0	6	0	0	7	12	0	I
Black and White Ruffed Lemur	*Varecia variegata variegata*	3	3	0				2	0	0										5	3	0	I
Red Ruffed Lemur	*Varecia variegata rubra*	2	4	0				0	0	1	0	0	1							2	4	0	I
Geoffroy's Marmoset	*Callithrix geoffroyi*				1	1	0	0	0	1										1	1	1	I
Pied Tamarin	*Saguinus bicolor*				0	2	0													0	2	0	I
Cotton-top Tamarin	*Saguinus oedipus*	1	1	0				0	0	3	0	0	3							1	1	0	I
Buffy-headed Capuchin	*Cebus xanthosternos*	4	1	0				1	0	0							2	0	0	3	1	0	II
Colombian Black Spider Monkey	*Ateles fusciceps robustus (A. geoffroyi rufiventris)*	1	6	0				2	0	1	2	0	0							1	6	1	II
Lion-tailed Macaque	*Macaca silenus*	2	7	0				1	0	0										3	7	0	I
Sulawesi Crested Macaque	*Macaca nigra*	6	13	0				2	3	0				3	0	0	0	1	0	5	15	0	II
Campbell's Monkey	*Cercopithecus campbelli*	0	2	0																0	2	0	II
Mandrill	*Mandrillus sphinx*	3	3	0				0	0	1	0	0	1							3	3	0	I
Chimpanzee	*Pan troglodytes*	7	20	0				0	3	1	0	1	0	0	1	0				7	21	1	I
Bornean Orang-utan	*Pongo pygmaeus*	1	4	0													1	0	0	0	4	0	I
Sumatran Orang-utan	*Pongo abelii*	2	3	0				1	1	0										3	4	0	I
RODENTIA																							
Prairie Marmot	*Cynomys ludovicianus*	1	1	0																1	1	0	
Turkish Spiny Mouse	*Acomys cilicicus*	0	0	25	0	0	45	0	0	100	0	0	11	0	0	56	0	0	1	0	0	102	
Capybara	*Hydrochaeris hydrochaeris*	3	2	0																3	2	0	
Azara's Agouti	*Dasyprocta azarae*				3	3	0										1	3	0	2	0	0	
Harvest Mouse	*Micromys minutus*	167	146	0	0	3	0	55	49	14	0	0	2	23	28	0	134	88	0	65	82	12	
European Water Vole	*Arvicola terrestris*	17	17	0										2	0	0	15	17	0	0	0	0	
CARNIVORA																							
Maned Wolf	*Chrysocyon brachyurus*	1	1	0																1	1	0	II
Bush Dog	*Speothos venaticus*	3	2	0				0	0	4				0	0	3	0	1	0	3	1	1	I
Red Panda	*Ailurus fulgens fulgens*	0	2	0																0	2	0	I
Spectacled Bear	*Tremarctos ornatus*				2	0	0													2	0	0	
Coati	*Nasua nasua*	1	11	0				0	0	38	0	0	16	0	1	1				1	10	21	
Oriental Small-clawed Otter	*Amblonyx cinereus*	4	3	0				0	0	3										4	3	3	II
Slender-tailed Meerkat	*Suricata suricatta*	4	4	0																4	4	0	
Serval	*Leptailurus serval*	1	1	0										1	1	0				0	0	0	II
Asiatic Lion	*Panthera leo persica*	1	1	0																1	1	0	I
Amur Tiger	*Panthera tigris altaica*	1	1	0										0	1	0				1	0	0	I
Jaguar	*Panthera onca*	2	2	0	2	1	0							1	1	0				3	2	0	I
PINNIPEDIA																							
Californian Sealion	*Zalophus californianus*	1	4	0				0	1	0				0	2	0				1	3	0	
PROBOSCIDEA																							
Asiatic Elephant	*Elephas maximus*	4	5	0				2	1	0	1	0	0				2	0	0	3	6	0	I
PERISSODACTYLA																							
Przewalski's Horse	*Equus przewalskii*	0	3	0																0	3	0	I
Grevy's Zebra	*Equus grevyi*	4	0	0	2	0	0													6	0	0	I
Persian Onager	*Equus hemionus onager*	1	5	0				1	0	0				1	2	0				1	3	0	II
South American Tapir	*Tapirus terrestris*	1	1	0				0	1	0										1	2	0	II
Eastern Black Rhinoceros	*Diceros bicornis michaeli*	3	5	0										0	1	0				3	4	0	I
ARTIODACTYLA																							
Babirusa	*Babyrousa babyrussa*	1	1	0																1	1	0	I
Red River Hog	*Potamochoerus porcus pictus*	3	1	0				1	5	0	0	5	0	1	0	0	1	0	0	2	1	0	
Guanaco	*Lama guanicoe*	4	10	0																4	10	0	II
Bactrian Camel	*Camelus bactrianus*	0	3	0				1	0	0										1	3	0	
Chilean Pudu	*Pudu pudu*	1	1	0	1	0	0							1	0	0				1	1	0	I
Philippine Spotted Deer	*Cervus alfredi*	3	1	0	0	2	0	2	0	0	1	0	0	1	0	0				3	3	0	
Barasingha	*Cervus duvaucelii duvaucelii*	0	3	0										0	3	0				0	0	0	I
Burmese Brow-antlered Deer	*Cervus eldi thamin*	4	9	0	1	0	0	1	5	0	1	4	0	2	0	0	1	0	0	2	10	0	I
Père David's Deer	*Elaphurus davidianus*	1	7	0																1	7	0	
Giraffe	*Giraffa camelopardalis*	2	3	0	0	1	0													2	4	0	
Okapi	*Okapia johnstoni*				1	0	0													1	0	0	
Lowland Anoa	*Bubalus depressicornis*	1	1	0				1	0	0										2	1	0	I
Congo Buffalo	*Syncerus caffer nanus*	1	3	0				3	0	0	1	0	0	0	1	0				3	2	0	
Eastern Bongo	*Tragelaphus eurycerus isaaci*	1	2	0	1	1	0	1	0	0							1	0	0	2	3	0	
West African Sitatunga	*Tragelaphus spekei gratus*	2	7	0	1	0	0	3	2	0	0	1	0				2	0	0	4	8	0	
Sable Antelope	*Hippotragus niger*	1	1	0													1	1	0	0	0	0	
Kafue Flats Red Lechwe	*Kobus leche kafuensis*	0	10	0										0	1	0				0	9	0	II
Scimitar-horned Oryx	*Oryx dammah*	0	10	0																0	10	0	I
Gemsbok	*Oryx gazella gazella*	2	6	0				0	2	0	0	1	0				1	0	0	1	7	0	
Blackbuck	*Antilope cervicapra*	1	21	0										0	4	0				1	17	0	
Arabian (Mountain) Gazelle	*Gazella gazella (cora)*	5	8	0										0	2	0	5	6	0	0	0	0	
	SUB-TOTALS	**332**	**443**	**203**	**16**	**15**	**45**	**89**	**80**	**313**	**8**	**13**	**37**	**40**	**54**	**79**	**176**	**120**	**41**	**213**	**351**	**404**	
	TOTAL		**978**			**76**			**482**			**58**			**173**			**337**			**968**		

Number of specimens at year end - 968
Number of species at year end - 62
Number of species held during year - 65

EDUCATION/DOMESTIC																							
Not included in general species/specimens totals																							
Domestic Goat	*Capra hircus (domestic)*	8	9	0										2	0	0				6	9	0	
Gloucester Old Spot Pig	*Sus scrofa (Gloucester old spot)*	0	1	0																0	1	0	
Kune Kune Pig	*Sus scrofa (Kune)*	0	1	0										0	1	0				0	0	0	
Domestic Rat	*Rattus norvegicus (domestic)*	0	7	0	0	3	0							0	1	0	0	3	0	0	6	0	
Domestic Rabbit	*Oryctolagus cuniculus (domestic)*	0	2	0																0	2	0	
Guinea Pig	*Cavia porcellus*	0	6	0										0	5	0				0	1	0	
	SUB-TOTALS	**8**	**26**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**7**	**0**	**0**	**3**	**0**	**6**	**19**	**0**	
	TOTAL		**34**			**3**			**0**			**0**			**9**			**3**			**25**		

KEY: M = Male F = Female Y = Young ? = Indeterminate Sex

Livestock: General Holdings – Birds

Common Name & Scientific Name		STOCK 31/12/03			RECEIVED			BORN/H'CH			DNS 30 DAYS			DEATHS/OTHERS			DISPOSALS			STOCK 31/12/04			CITES
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
STRUTHIONIFORMES																							
Ostrich	*Struthio camelus*	0	2	0																0	2	0	I
RHEIFORMES																							
Common Rhea	*Rhea americana*	1	2	0																1	2	0	II
CASUARIIFORMES																							
Southern Cassowary	*Casuarius casuarius*	0	1	0																0	1	0	
Emu	*Dromaius novaehollandiae*	1	1	0																1	1	0	
SPHENISCIFORMES																							
Humboldt's Penguin	*Spheniscus humboldti*	10	14	10				0	0	12	0	0	2	0	0	4				10	14	16	I
PELECANIFORMES																							
Dalmatian Pelican	*Pelecanus crispus*	5	3	0																5	3	0	I
CICONIIFORMES																							
Little Egret	*Egretta garzetta*	1	2	1																1	2	1	
White Stork	*Ciconia ciconia*	2	2	0																2	2	0	
Black Stork	*Ciconia nigra*	1	1	0	1	0	0										1	0	0	1	1	0	II
Waldrapp Ibis	*Geronticus eremita*	7	9	2				0	0	10	0	0	2	0	1	3				7	8	7	I
Scarlet Ibis	*Eudocimus ruber*	2	2	0																2	2	0	II
Eurasian Spoonbill	*Platalea leucorodia*	3	5	1				0	0	6	0	0	3	0	1	2				3	4	2	II
Chilean Flamingo	*Phoenicopterus chilensis*	17	19	31				0	0	10	0	0	3	0	0	2				17	19	36	II
Caribbean Flamingo	*Phoenicopterus ruber ruber*	17	12	47				0	0	1				0	1	2	0	0	4	17	11	42	II
ANSERIFORMES																							
Black-billed Whistling Duck	*Dendrocygna arborea*	1	4	0				0	0	27	0	0	3	0	1	0	0	0	10	1	3	14	II
Black-necked Swan	*Cygnus melanocoryphus*	1	1	2													0	0	2	1	1	0	
Lesser White-fronted Goose	*Anser erythropus*	1	1	0				0	0	3				1	0	1				0	1	2	
Ross's Snow Goose	*Anser rossi*	3	1	0				0	0	4	0	0	2							3	1	2	
Red-breasted Goose	*Branta ruficollis*	5	4	3										1	0	0				4	4	3	II
Hawaiian Goose	*Branta sandvicensis*	1	1	0																1	1	0	I
Common Shelduck	*Tadorna tadorna*	1	0	0																1	0	0	
Baikal Teal	*Anas formosa*	2	2	0																2	2	0	II
Falcated Teal	*Anas falcata*	5	3	0				0	0	2	0	0	1	1	1	0				4	2	1	
Chilean Pintail	*Anas georgica spinicauda*	1	1	0																1	1	0	
Laysan Teal	*Anas laysanensis*	2	3	0										2	1	0				0	2	0	I
Garganey	*Anas querquedula*	3	3	6										1	0	1	0	0	5	2	3	0	
Marbled Teal	*Marmaronetta angustirostris*	3	4	3				0	0	5	0	0	1	0	1	4				3	3	3	
Common Eider	*Somateria mollissima*	3	3	0				0	0	9				0	1	0				3	2	9	
Baer's Pochard	*Aythya baeri*	3	4	0				0	0	3				0	1	2				3	3	1	
Ferruginous Duck	*Aythya nyroca*	3	3	0				0	0	5	0	0	3							3	3	2	
Tufted Duck	*Aythya fuligula*	4	1	0																4	1	0	
Red-crested Pochard	*Netta rufina*	4	4	0				0	0	10	0	0	5							4	4	5	
Mandarin Duck	*Aix galericulata*	0	0	34				0	0	5				0	0	8				0	0	31	
Smew	*Mergus albellus*	3	3	0				0	0	2	0	0	2							3	3	0	
Hooded Merganser	*Mergus cucullatus*	3	4	5				0	0	16	0	0	5	2	1	1				1	3	15	
White-headed Duck	*Oxyura leucocephala*	6	4	0				0	1	17	0	0	15	1	1	0				5	4	2	II
FALCONIFORMES																							
American Black Vulture	*Coragyps atratus*	0	1	0																0	1	0	II
Andean Condor	*Vultur gryphus*	1	1	0																1	1	0	I
Griffon Vulture	*Gyps fulvus*	0	1	0																0	1	0	II
European Black Vulture	*Aegypius monachus*	1	1	0																1	1	0	II
Mauritius Kestrel	*Falco punctatus*	1	1	0																1	1	0	I
GALLIFORMES																							
Red-billed Curassow	*Crax blumenbachii*	1	1	0				0	0	1										1	1	1	I
Red-legged Partridge	*Alectoris rufa*	1	0	0																1	0	0	
Roulroul Partridge	*Rollulus roulroul*	7	5	0				1	0	1	1	0	1	1	2	0				6	3	0	
Blyth's Tragopan	*Tragopan blythii*	1	1	0													1	1	0	0	0	0	I
Satyr Tragopan	*Tragopan satyra*	1	2	0										1	0	0				0	2	0	
Himalayan Monal	*Lophophorus impeyanus*	1	1	0	0	1	0										0	1	0	1	1	0	I
Golden Pheasant	*Chrysolophus pictus*	1	4	0																1	4	0	
Lady Amherst's Pheasant	*Chrysolophus amherstiae*	0	1	0	1	0	0	1	1	0										2	2	0	
Palawan Peacock Pheasant	*Polyplectron emphanum*	2	3	0										0	1	0				2	2	0	I
Edwards' Pheasant	*Lophura edwardsi*	1	1	0										0	1	0				1	0	0	I
Vietnamese Pheasant	*Lophura hatinhensis*	2	1	0										1	0	0				1	1	0	
Malayan Crestless Fireback	*Lophura erythrophthalma*	1	1	0																1	1	0	
Great Argus Pheasant	*Argusianus argus*	0	1	0																0	1	0	II
Common Peafowl	*Pavo cristatus*	5	4	3				1	1	3	0	0	3	1	0	1	3	3	0	2	2	2	
Green Peafowl	*Pavo muticus*	1	0	1										0	0	1				1	0	0	II
Congo Peafowl	*Afropavo congensis*	3	3	0																3	3	0	
GRUIFORMES																							
Red-crowned Crane	*Grus japonensis*	1	1	0																1	1	0	I
White-naped Crane	*Grus vipio*	2	2	0										0	1	0	1	0	0	1	1	0	I
Wattled Crane	*Grus carunculatus*	1	1	0																1	1	0	II
Blue Crane	*Grus paradisea*	1	2	0													0	1	0	1	1	0	II
West African Crowned Crane	*Balearica pavonina pavonina*	3	2	0				0	0	3				1	0	2				2	2	1	II
CHARADRIIFORMES																							
Stone Curlew	*Burhinus oedicnemus*	0	1	0	1	0	0													1	1	0	
Crowned Plover	*Vanellus coronatus*	1	1	0																1	1	0	
Northern Lapwing	*Vanellus vanellus*	1	1	0										0	1	0				1	0	0	
COLUMBIFORMES																							
Speckled Pigeon	*Columba guinea*	0	0	26				0	0	7				0	0	4	0	0	1	0	0	28	
Rock Dove	*Columba livia*	0	0	12				0	0	1	0	0	1	0	0	5				0	0	7	
Pink Pigeon	*Streptopelia mayeri*	1	0	0																1	0	0	
Laughing Dove	*Streptopelia senegalensis*	0	0	4																0	0	4	
Red Turtle Dove	*Streptopelia tranquebarica*	0	0	4																0	0	4	
Emerald Dove	*Chalcophaps indica*	1	1	0																1	1	0	
Crested Bronzewing Pigeon	*Ocyphaps lophotes*	0	0	13				0	0	4	0	0	1	0	0	2	0	0	1	0	0	13	
Common Bronzewing Pigeon	*Phaps chalcoptera*	1	0	0																1	0	0	
Diamond Dove	*Geopelia cuneata*	1	2	0																1	2	0	
Mountain Witch Dove	*Geotrygon versicolor*	3	1	0										3	0	0				0	1	0	
Mindanao Bleeding-heart	*Gallicolumba criniger*	2	1	0	0	2	0	0	0	1	0	0	1	0	1	0				2	2	0	
Luzon Bleeding-heart	*Gallicolumba luzonica*	2	1	0	0	1	0							0	1	0				2	1	0	II
Golden Heart Pigeon	*Gallicolumba rufigula*	6	1	0										2	0	0	1	0	0	3	1	0	
Jambu Fruit Dove	*Ptilinopus jambu*	1	2	0										1	1	0				0	1	0	
Orange-fronted Fruit Dove	*Ptilinopus aurantifrons*	0	0	1										0	0	1				0	0	0	
Socorro Dove	*Zenaida macroura graysoni*	1	4	0										0	1	0				1	3	0	
Pied Imperial Pigeon	*Ducula bicolor*	0	0	2	4	0	0													4	0	2	
Victoria Crowned Pigeon	*Goura victoria*	2	1	0				0	0	1	0	0	1				1	0	0	1	1	0	II
Blue Crowned Pigeon	*Goura cristata*	1	0	0																1	0	0	II
Nicobar Pigeon	*Caloenas nicobarica*	3	1	0																3	1	0	I
Wonga Pigeon	*Leucosarcia melanoleuca*	0	0	0	0	1	0													0	1	0	
Green-naped Pheasant Pigeon	*Otidiphaps nobilis*	1	1	0				0	0	1	0	0	1							1	1	0	
White-naped Pheasant Pigeon	*Otidiphaps nobilis aruensis*	1	1	0				0	0	1	0	0	1							1	1	0	

KEY: M = Male F = Female Y = Young ? = Indeterminate Sex

Livestock: General Holdings – Birds Continued

Common Name & Scientific Name		STOCK 31/12/03			RECEIVED			BORN/H'CH			DNS 30 DAYS			DEATHS/OTHERS			DISPOSALS			STOCK 31/12/04			CITES
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
PSITTACIFORMES																							
Red and Blue Lory	*Eos histrio*	1	0	0	0	1	0													1	1	0	I
Blue-streaked Lory	*Eos reticulata*	1	0	0																1	0	0	II
Duyvenbode's Lory	*Chalcopsitta duivenbodei*	2	1	0													2	1	0	0	0	0	II
Yellow-backed Chattering Lory	*Lorius garrulus flavopalliatus*	5	4	0										1	0	0	1	2	0	3	2	0	II
Stella's Lorikeet	*Charmosyna papou*	1	1	0				1	1	3	0	0	3							2	2	0	II
Mount Apo Lorikeet	*Trichoglossus johnstoniae*	2	1	0	2	0	0													4	1	0	II
Palm Cockatoo	*Probosciger aterrimus*	1	0	0																1	0	0	I
Carnaby's Black Cockatoo	*Calyptorhynchus latirostris*	1	1	0										1	0	0				0	1	0	II
Blue-eyed Cockatoo	*Cacatua ophthalmica*	5	3	0				0	0	1				2	1	0				3	2	1	II
Red-vented Cockatoo	*Cacatua haematuropygia*	5	4	0																5	4	0	I
Kea	*Nestor notabilis*	1	1	0				0	0	3	0	0	3							1	1	0	II
Greater Vasa Parrot	*Coracopsis vasa*	2	1	0				0	0	2										2	1	2	II
Princess Parrot	*Polytelis alexandrae*	2	1	0				0	0	4				0	0	1				2	1	3	II
Derbyan Parakeet	*Psittacula derbiana*	6	3	0				0	0	3	0	0	1	0	0	1				6	3	1	II
Black-cheeked Lovebird	*Agapornis nigrigensis*	0	1	0																0	1	0	II
Hyacinthine Macaw	*Anodorhynchus hyacinthinus*	2	2	0				0	0	1	0	0	1							2	2	0	I
Blue and Yellow Macaw	*Ara ararauna*	1	1	0																1	1	0	II
Blue-throated Macaw	*Ara glaucogularis*	1	1	0	2	2	0													3	3	0	I
Blue-winged Macaw	*Primolius maracana*	1	3	0				0	0	1	0	0	1	0	1	0				1	2	0	I
Golden-capped Conure	*Aratinga auricapilla*	2	1	0																2	1	0	II
Golden Conure	*Guaruba guarouba*	3	1	0				0	2	0										3	3	0	I
Thick-billed Parrot	*Rhynchopsitta pachyrhyncha*	1	0	0										1	0	0				0	0	0	I
Blue-throated Conure	*Pyrrhura cruentata*	4	1	0	0	1	0	0	0	4	0	0	4							4	2	0	I
Cuban Amazon	*Amazona leucocephala*				0	1	0										0	1	0	0	0	0	II
Ecuadorian Amazon Parrot	*Amazona autumnalis lilacina*	12	11	0										0	1	0	3	3	0	9	7	0	II
Green-cheeked Amazon	*Amazona viridigenalis*	1	1	0																1	1	0	I
Red-tailed Amazon	*Amazona brasiliensis*	5	5	0										1	0	0	2	2	0	2	3	0	I
St Lucia Amazon	*Amazona versicolor*	1	0	0																1	0	0	I
CUCULIFORMES																							
Red-crested Turaco	*Tauraco erythrolophus*	1	0	0	0	1	0													1	1	0	II
Fischer's Turaco	*Tauraco fischeri*	2	3	0										0	1	0				2	2	0	II
Schalow's Turaco	*Tauraco schalowi*	2	5	0										0	2	0	0	1	0	2	2	0	II
White-cheeked Turaco	*Tauraco leucotis*	1	1	0																1	1	0	II
Violet Plantain Eater	*Musophaga violacea*	1	3	0										0	2	0				1	1	0	
STRIGIFORMES																							
Barn Owl	*Tyto alba*	1	1	0																1	1	0	II
White-faced Scops Owl	*Otus leucotis*	3	2	0				0	0	2				2	1	0				1	1	2	II
Milky Eagle Owl	*Bubo lacteus*	2	0	0										1	0	0				1	0	0	II
Snowy Owl	*Nyctea scandiaca*	1	1	0										0	1	0				1	0	0	II
Vermiculated Fishing Owl	*Scotopelia bouvieri*	0	1	0																0	1	0	II
Ferruginous Pygmy Owl	*Glaucidium brasilianum*	0	1	0													0	1	0	0	0	0	II
Great Grey Owl	*Strix nebulosa lapponica*	3	4	0				3	1	0							3	3	0	3	2	0	II
Spectacled Owl	*Pulsatrix perspicillata*	3	4	0				0	0	2				1	2	0				2	2	2	II
CAPRIMULGIFORMES																							
Tawny Frogmouth	*Podargus strigoides*	3	2	0				0	0	1										3	2	1	
CORACIIFORMES																							
Blue-winged Kookaburra	*Dacelo leachii*	2	4	0				0	2	1	0	0	1				1	3	0	1	3	0	
Kookaburra	*Dacelo novaeguineae*	1	1	0																1	1	0	
White-collared Kingfisher	*Halcyon chloris*	2	3	0				0	0	14	0	0	5	0	0	1				2	3	8	
Lilac-breasted Roller	*Coracias caudata*	1	1	0				3	2	4	0	0	3				3	2	1	1	1	0	
Great Hornbill	*Buceros bicornis*	2	3	1										0	1	0	1	0	0	1	2	1	I
Rhinoceros Hornbill	*Buceros rhinoceros*	1	1	0																1	1	0	II
Wrinkled Hornbill	*Aceros corrugatus*	1	1	0																1	1	0	II
Mindanao Writhe-billed Hornbill	*Aceros leucocephalus*	1	1	0																1	1	0	II
Visayan Tarictic Hornbill	*Penelopides panini*	1	1	0																1	1	0	II
PASSERIFORMES																							
Red-eared Bulbul	*Pycnonotus jocosus*	0	0	7										0	0	1				0	0	6	
White-rumped Shama	*Copsychus malabaricus*	5	3	0				3	0	6	0	0	5	1	1	0	3	0	1	4	2	0	
Chestnut Capped Thrush	*Zoothera interpres*	1	2	0	0	0	1							0	1	0	0	0	1	1	1	0	
Yellow-throated Laughing Thrush	*Garrulax galbanus*	2	1	0										0	1	0				2	0	0	
White Crested Laughing Thrush	*Garrulax l. leucolophus*	0	1	0																0	1	0	
Red-tailed Laughing Thrush	*Garrulax milnei*	3	1	0										1	0	0				2	1	0	
Red-winged Laughing Thrush	*Garrulax formosus*	0	1	0										0	1	0				0	0	0	
Omei Shan Liocichla	*Liocichla omeiensis*	2	0	0	1	2	0													3	2	0	II
Red-billed Leiothrix	*Leiothrix lutea*	0	0	23	0	0	12	0	0	18	0	0	5	0	0	9	0	0	4	0	0	35	II
Pope Cardinal	*Paroaria dominicana*	2	1	2				0	0	1				1	0	3				1	1	0	
Red-legged Honeycreeper	*Cyanerpes cyaneus*	1	0	0													1	0	0	0	0	0	
Monserrat Oriole	*Icterus oberi*	1	1	0																1	1	0	
Mexican House Finch	*Carpodacus mexicanus*	2	0	0																2	0	0	
Red-cheeked Cordon-bleu	*Uraeginthus bengalus*	2	1	0										0	1	0				2	0	0	
Gouldian Finch	*Chloebia gouldiae*	1	0	0										1	0	0				0	0	0	
Blue-headed Parrot Finch	*Erythrura trichroa*	0	0	2										0	0	1				0	0	1	
Diamond Sparrow	*Stagonopleura guttata*	1	0	0																1	0	0	
Java Sparrow	*Padda oryzivora*	0	0	31				0	0	56				0	0	5	0	0	36	0	0	46	II
White-headed Buffalo Weaver	*Dinemellia dinemelli*	0	0	1																0	0	1	
Taveta Golden Weaver	*Ploceus castaneiceps*	2	0	0																2	0	0	
Scissor-billed Starling	*Scissirostrum dubium*	0	1	0	0	0	7													0	1	7	
Asian Glossy Starling	*Aplonis panayensis*	0	0	18				0	0	2				0	0	6				0	0	14	
Amethyst Starling	*Cinnyricinclus leucogaster*	4	3	0																4	3	0	
African Pied Starling	*Spreo bicolor*	1	4	1																1	4	1	
Emerald Starling	*Coccycalius iris*	0	0	13				0	0	7				0	0	1				0	0	19	
Superb Starling	*Lamprotornis superbus*	0	1	0	3	3	0													3	4	0	
Royal Starling	*Lamprotornis regius*	2	2	0				0	0	2				1	0	0				1	2	2	
Bali Starling	*Leucopsar rothschildi*	5	2	0																5	2	0	I
White-eared Catbird	*Ailuroedus buccoides*	0	2	0										0	1	0	0	1	0	0	0	0	
Red Bird of Paradise	*Paradisaea rubra*	3	1	0				0	0	2	0	0	2							3	1	0	II
Red-billed Blue Magpie	*Urocissa erythrorhyncha*	1	1	0										1	0	0				0	1	0	
Azure-winged Magpie	*Cyanopica cyana*	2	2	0	1	0	0	0	0	6	0	0	2							3	2	4	
Red-billed Chough	*Pyrrhocorax pyrrhocorax*	1	1	0																1	1	0	
	SUB-TOTALS	**341**	**316**	**310**	**14**	**14**	**20**	**15**	**13**	**317**	**1**	**0**	**93**	**36**	**40**	**75**	**28**	**26**	**66**	**305**	**277**	**413**	
	TOTAL		**967**			**48**			**345**			**94**			**151**			**120**			**995**		

Number of specimens held at year end - 995
Number of species held at year end - 162
Number of species held during year - 172

EDUCATION/DOMESTIC																							
Not included in general species/specimens totals		1	34	0				0	0	24	0	0	2	0	2	0	1	19		0	13	22	
Domestic Chicken		0	0	4																0	0	4	
Domestic Duck		6	7	2										0	1	0	2	2	0	4	4	2	
Java Dove		0	1	0																0	1	0	
Bob White Quail																							
	SUB-TOTALS	**7**	**42**	**6**	**0**	**0**	**0**	**0**	**0**	**24**	**0**	**0**	**2**	**0**	**3**	**0**	**3**	**21**	**0**	**4**	**18**	**28**	
	TOTAL		**55**			**0**			**24**			**2**			**3**			**24**			**50**		

KEY: M = Male F = Female Y = Young ? = Indeterminate Sex

Livestock: General Holdings – Reptiles

Common Name & Scientific Name		STOCK 31/12/03			RECEIVED			BORN/H'CH			DNS 30 DAYS			DEATHS/OTHERS			DISPOSALS			STOCK 31/12/04			CITES
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
Asian Box Turtle	*Cuora amboinensis*	2	2	0										0	1	0				2	1	0	II
Spiny Turtle	*Heosemys spinosa*	2	4	0																2	4	0	II
Black Marsh Turtle	*Siebenrockiella crassicolis*	1	3	0																1	3	0	II
Annam Leaf Turtle	*Annamemys annamensis*				0	0	2													0	0	2	
McCord's Snake-necked Turtle	*Chelodina mccordi*				0	0	4													0	0	4	
Egyptian Tortoise	*Testudo kleinmanni*	3	4	0	0	2	0													3	6	0	I
Greek Tortoise	*Testudo graeca*	4	3	0													4	3	0	0	0	0	I
Hermann's Tortoise	*Testudo hermanni*	1	0	0													1	0	0	0	0	0	I
Red-footed Tortoise	*Geochelone carbonaria*	0	0	10													0	0	10	0	0	0	II
Radiated Tortoise	*Geochelone radiata*	2	0	0	0	1	0													2	1	0	I
Yellow-footed Tortoise	*Geochelone denticulata*	1	1	0																1	1	0	II
Star Tortoise	*Geochelone elegans*				5	9	32							1	0	0	2	6	32	2	3	0	II
Pancake Tortoise	*Malacochersus tornieri*	2	2	0																2	2	0	II
Matamata Turtle	*Chelus fimbriatus*	0	1	0													0	1	0	0	0	0	
CROCODYLIA																							
West African Dwarf Crocodile	*Osteolaemus tetraspis*	1	3	0																1	3	0	I
RHYNCHOCEPHALIA																							
Tuatara	*Sphenodon punctatus*	3	5	0										2	0	0				1	5	0	I
SAURIA																							
Sand Lizard	*Lacerta agilis*	0	0	56				0	0	41							0	0	65	0	0	32	
Standing's Day Gecko	*Phelsuma standingi*	1	1	0				0	0	2										1	1	2	II
Yellow-headed Day Gecko	*Phelsuma klemmeri*	1	1	0				0	0	6	0	0	1							1	1	5	II
Tokay Gecko	*Gekko gecko*	0	0	10										0	0	5				0	0	5	
Common Iguana	*Iguana iguana*	2	0	0													1	0	0	1	0	0	II
Rhinoceros Iguana	*Cyclura cornuta*	6	4	0										1	0	0	2	1	0	3	3	0	I
Plumed Basilisk	*Basiliscus plumifrons*	1	1	0	0	1	0							1	1	0				0	1	0	
Egyptian Spiny-tailed Lizard	*Uromastyx aegyptius*	1	2	0	0	0	1													1	2	1	
Thailand Water Dragon	*Physignathus cocincinus*	1	0	0										1	0	0				0	0	0	
Philippine Sailfin Lizard	*Hydrosaurus pustulatus*	2	4	0	1	0	0	0	0	1							2	2	0	1	2	1	
Shingleback Skink	*Tiliqua rugosus*	1	1	0																1	1	0	
Prehensile-tailed Skink	*Corucia zebrata*	1	1	0				0	0	1										1	1	1	II
Black and White Tegu	*Tupinambis teguixin*	1	2	0																1	2	0	II
Green Tree Monitor	*Varanus prasinus*				1	0	0													1	0	0	II
Mangrove Monitor	*Varanus indicus*	2	1	0																2	1	0	II
Salvador Monitor	*Varanus salvadorii*				1	1	0													1	1	0	I
Spiny-tailed Monitor	*Varanus acanthurus*	5	6	4										0	1	0				5	5	4	II
Lace Monitor	*Varanus varius*	2	0	0																2	0	0	II
Timor Monitor	*Varanus timorensis*	1	1	0																1	1	0	II
Komodo Dragon	*Varanus komodoensis*	1	2	0										1	0	0				0	2	0	I
Veiled Chameleon	*Chamaeleo calyptratus*	5	2	0				0	2	46	0	0	22	0	0	2	0	0	9	5	4	13	II
Bearded Lizard	*Heloderma horridum*	1	1	0	0	0	2													1	1	2	II
Gila Monster	*Heloderma suspectum*	1	1	2	1	0	0													2	1	2	II
SERPENTES																							
Sunbeam Snake	*Xenopeltis unicolor*	7	7	4										1	1	0	6	6	4	0	0	0	
Green Tree Python	*Morelia viridis*	3	2	0										1	0	0				2	2	0	II
Cuban Boa	*Epicrates angulifer*	0	2	0										0	1	0				0	1	0	II
Brazilian Rainbow Boa	*Epicrates cenchria cenchria*	0	2	2													0	2	2	0	0	0	II
Jamaican Boa	*Epicrates subflavus*	2	3	0										1	0	0				1	3	0	I
Haitian Boa	*Epicrates striatus striatus*	1	0	0										1	0	0				0	0	0	II
Madagascan Tree Boa	*Sanzinia madagascariensis*	5	2	0													3	0	0	2	2	0	I
Emerald Tree Boa	*Corallus caninus*				0	0	2													0	0	2	II
Boa Constrictor	*Boa constrictor*	3	1	0													1	1	0	2	0	0	II
Green Anaconda	*Eunectes murinus*	1	1	0																1	1	0	II
Red-tailed Racer	*Gonyosoma oxycephala*	3	3	4				0	0	10	0	0	1	0	0	1	2	0	4	1	3	8	
Indian Cobra	*Naja kaouthia*	1	0	0																1	0	0	II
East African Green Mamba	*Dendroapsis augusticeps*	1	1	0																1	1	0	
Gaboon Viper	*Bitis gabonica rhinoceros*	2	2	0										1	0	0				1	2	0	
Aruba Island Rattlesnake	*Crotalus unicolor*	0	1	0																0	1	0	
	SUB-TOTALS	**87**	**86**	**92**	**9**	**14**	**43**	**0**	**2**	**107**	**0**	**0**	**24**	**12**	**5**	**8**	**24**	**22**	**126**	**60**	**75**	**84**	
	TOTAL		**265**			**66**			**109**			**24**			**25**			**172**			**219**		

Number of specimens at year end - 219
Number of species at year end - 47
Number of species held during year - 54

EDUCATION Not included in general species/specimen totals																							
Corn Snake	*Elaphe guttata*	0	1	1										0	1	0				0	0	1	
Greek Tortoise	*Testudo graeca graeca*	1	0	0																1	0	0	
	SUB-TOTALS	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	
	TOTAL		**3**			**0**			**0**			**0**			**1**			**0**			**2**		

KEY: M = Male F = Female Y = Young ? = Indeterminate Sex

Amur Tiger (*Panthera tigris altaica*).
Photograph: Chester Zoo Archives.

Livestock: General Holdings – Amphibians

Common Name & Scientific Name			STOCK 31/12/03 M	F	Y/?	RECEIVED M	F	Y/?	BORN/H'CH M	F	Y/?	DNS 30 DAYS M	F	Y/?	DEATHS/OTHERS M	F	Y/?	DISPOSALS M	F	Y/?	STOCK 31/12/04 M	F	Y/?	CITES
Smoky Jungle Frogs	*Leptodactylus pentadactylus*		0	0	12																0	0	12	
Axolotl (Black Form)	*Ambystoma mexicanum*	aq	0	0	4				0	0	9							0	0	5	0	0	8	II
Axolotl (White Form)		aq	0	0	5				0	0	624	0	0	415	0	0	96	0	0	100	0	0	18	II
Japanese Fire-bellied Newt	*Cynops pyrrhogaster*	aq	0	0	4	0	0	4										0	0	8	0	0	0	
Red Eyed Tree Frog	*Agalychnis callidryas*		0	0	13										0	0	3				0	0	10	
White's Tree Frog	*Pelodryas caerulea*		0	0	12										0	0	3				0	0	9	
Blue Poison Arrow Frog	*Dendrobates azureus*		1	2	0	3	3	0	0	0	11	0	0	3	0	1	1				4	4	7	II
Black and Green Poison Arrow Frog	*Dendrobates auratus*		0	0	5				0	0	22	0	0	2	0	0	8				0	0	17	II
Yellow Striped Poison Arrow Frog	*Dendrobates leucomelas*		5	2	9				0	0	47				0	0	5	0	0	40	5	2	11	II
Golden Poison Dart Frog	*Phyllobates terribilis*		3	2	6				0	0	34	0	0	5	0	0	5	0	0	3	3	2	27	II
Golfodulcean Poison dart Frog	*Phyllobates vittatus*		0	0	4				0	0	4	0	0	1							0	0	7	
South African Clawed Frog (Albino)	*Xenopus laevis*	aq	0	0	4													0	0	4	0	0	0	
Nigerian Clawed Frog	*Silurana tropicalis*	aq	0	0	2													0	0	2	0	0	0	
Puerto Rican Crested Toad	*Bufo lemur*		7	19	0										0	2	0				7	17	0	
Mallorcan Midwife Toad	*Alytes muletensis*		0	0	80				0	0	240				0	0	1				0	0	319	
Smooth Sided Toad	*Bufo guttatus*		0	0	3										0	0	1	0	0	2	0	0	0	
Sabana Surinam Toad	*Pipa parva*	aq				0	0	14							0	0	7				0	0	7	
Surinam Toad	*Pipa pipa*	aq	0	2	0										0	2	0				0	0	0	
	SUB-TOTALS		**10**	**17**	**150**	**3**	**3**	**18**	**0**	**0**	**991**	**0**	**0**	**426**	**0**	**5**	**130**	**0**	**0**	**164**	**19**	**25**	**452**	
	TOTAL			**177**			**24**			**991**			**426**			**135**			**164**			**496**	
EDUCATION																								
Not included in general species/specimens totals																								
Chacoan Horned Frog	*Ceratophrys cranwelli*		0	0	1													0	0	1	0	0	0	
	SUB-TOTALS		**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	
	TOTAL			**1**			**0**			**0**			**0**			**0**			**1**			**0**	

Number of specimens at year end - 496
Number of species at year end - 13
Number of species held during year - 18

aq indicates species kept by the Aquarium

Livestock: General Holdings – Fishes

Common Name & Scientific Name			STOCK 31/12/04	CITES
POTAMOTRYGONIDAE				
Fresh-water Stingray	*Potamotrygon motoro*	*	12	
OSTEOGLOSSIDAE				
South American Arowana	*Osteoglossum bicirrhosum*		2	
Asiatic Arowana	*Scleropages formosus*		4	I
MORMYRIDAE				
Blunt Jaw Elephant Trunkfish	*Gnathonemus elephas*		3	
Long-nosed Elephant Trunkfish	*Gnathonemus petersi*	*	19	
Down Poker	*Campylomormyrus rhynchophorus*		2	
Short-nosed Elephant Trunkfish	*Marcusenius angolensis*		4	
CHARACIDAE				
Mexican Blind Cave Fish	*Astyanax mexicanus jordani*		38	
Long-finned Characin	*Brycinus longipinnis*		79	
Cardinal Tetra	*Paracheirodon axelrodi*		108	
Congo Tetra	*Phenacogrammus interruptus*		6	
CYPRINIDAE				
Goldfish	*Carassius auratus*		96	
Koi Carp	*Cyprinus carpio*		36	
Omani Blind Cave Fish	*Garra barreimiae*		70	
Giant Danio	*Danio malabaricus*	*	32	
Pla Eesok	*Probarbus jullieni*		6	I
Black Ruby Barb	*Puntius nigrofasciatus*		35	
Cumming's Barb	*Puntius cummingii*		21	
Cherry Barb	*Puntius titteya*		1	
Harlequin Rasbora	*Rasbora heteromorpha*		20	
Golden Rudd	*Scardinius erythrophthalmus*		13	
CYPRINODONTIDAE				
Nosy Be Killifish	*Pachypanchax homalonotus*	*	34	
Killifish	*Pachypanchax sakaramyi*	*	21	
Butterfly Goodeid	*Ameca splendens*	*	273	
Banded Allotoca	*Allotoca goslinei*	*	40	
Bold Characodon	*Characodon audax*		78	
Characodon	*Characodon sp. 'Abraham Gonzales'*	*	100	
Golden Saw-finned Goodeid	*Skiffia francesae*	*	254	
Crescent Zoe	*Zoogoneticus tequila*	*	80	
Green Wagtail Swordfish	*Xiphophorus helleri*		30	
ADRIANICHTYIDAE				
Duck-billed Fish	*Xenopoecilus sarasinorum*	*	23	
COBITIDAE				
Clown Loach	*Botia macracantha*		8	
Dwarf Loach	*Botia sidthimunki*		4	
CICHLIDAE				
Discus	*Symphysodon aequifasciata*	*	13	

Common Name & Scientific Name			STOCK 31/12/04	CITES
Lake Victoria Cichlid	*Yssichromis argens*	*	90	
Lake Victoria Cichlid	*Yssichromis pyrrhocephalus*	*	52	
Lake Malawi Cichlid	*Melanochromis auratus*		20	
Lake Malawi Cichlid	*Pseudotropheus socolofi*		38	
Lake Malawi Cichlid	*Pseudotropheus lombardoi*		10	
Zebra Cichlid (Cobalt Blue)	*Pseudotropheus zebra*		5	
Lake Malawi Cichlid	*Labidochromis caeruleus*		12	
Lake Malawi Cichlid	*Labeotropheus fuelleborni*		18	
Lake Malawi Cichlid	*Nimbochromis livingstoni*		3	
Lake Malawi Cichlid	*Nimbochromis polystigma*		3	
Spotted Damba	*Paretroplus maculatus*		6	
Pin Striped Damba	*Paretroplus menarambo*	*	55	
Pungu Barombi Mbo Cichlid	*Pungu maclareni*		53	
Konye Barombi Mbo Cichlid	*Konia eisentrauti*	*	63	
Unga Barombi Mbo Cichlid	*Sarotherodon linnellii*	*	40	
Leka Keppe Barombi Mbo Cichlid	*Sarotherodon lohbergeri*		50	
Nsess Barombi Mbo Cichlid	*Stomatepia mariae*	*	71	
Pindu Barombi Mbo Cichlid	*Stomatepia pindu*		50	
ANABANTIDAE				
Pearl Gourami	*Trichogaster leeri*		2	
ATHERINIDAE				
Red Rainbow Fish	*Glossolepis incisus*		13	
Lake Kutubu Rainbow Fish	*Melanotaenia lacustris*	*	43	
Dwarf Rainbow Fish	*Melanotaenia praecox*		9	
BAGRIDAE				
Giraffe Catfish	*Auchenoglanis occidentalis*		1	
PIMELODIDAE				
Red-tailed Catfish	*Phractocephalus hemiliopterus*		4	
Catfish	*Leiarus marmoratus*		1	
ICTALURIDAE				
Channel Catfish	*Ictalurus punctatus*		1	
MOCHOKIDAE				
Polka-dot Upside-down Catfish	*Synodontis angelicus*		3	
Upside-down Catfish	*Synodontis nigriventis*		1	
Lake Malawi Upside-down Catfish	*Synodontis nyassae*		4	
CALLICHTHYIDAE				
Burgess's Catfish	*Corydoras burgessi*		6	
Panda Catfish	*Corydoras panda*		28	
Peppered Catfish	*Corydoras paleatus*		15	
LORICARIIDAE				
Bristlenose Plecostomus	*Ancistrus dolichopterus*		50	
Twig Catfish	*Farlowella acus*		1	
Plecostomus Catfish	*Hypostomus plecstomus*		2	
Emperor Peckoltia	*Hypancistrus zebra*		2	
TOXOTIDAE				
Archer Fish	*Toxotes jaculator*		4	

Livestock: General Holdings – Fishes Continued

Common Name & Scientific Name			STOCK 31/12/04	CITES
PROTOPTERIDAE				
African Lung Fish	*Protopterus annectens*		1	
CERATODONTIDAE				
Australian Lungfish	*Neoceratodotus fosteri*		6	II
CENTRISCIDAE				
Shrimpfish	*Aeoliscus strigata*		7	
Spotted Shrimpfish	*Aeoliscus punctulatus*		7	
SYNGNATHIDAE				
Seahorse	*Hippocampus kuda*	*	212	
Knysna Seahorse	*Hippocampus capensis*		6	
Sea Pony	*Hippocampus fuscus*	*	200	
Asian River Pipefish	*Doryichthys boaja*		9	
Worten's River Pipefish	*Doryichthys martensii*		2	
MONODACTYLIDAE				
Finger Fish	*Monodactylus sebae*		4	
SCORPAENIDAE				
White Fin Lionfish	*Pterois radiata*		1	
Fumanchu Lionfish	*Dendrochirus biocellatus*		1	
SCATOPHAGIDAE				
Red Tiger Scat	*Scatophagus argus*		3	
POMACENTRIDAE				
Skunk Clown Fish	*Amphiprion sandaracinos*		2	
Fire Clown Fish	*Amphiprion ephippium*		8	
Tomato Clown Fish	*Amphiprion frenatus*		1	
Common Clownfish	*Amphiprion ocellaris*		4	
Blue Damsel Fish	*Pomacentrus alleni*		3	
Yellow-tailed Blue Damsel Fish	*Chrysiptera hemicyanea*		5	
CHAETODONTIDAE				
Copperband Butterflyfish	*Chelmon rostratus*		2	
POMACANTHIDAE				
Bicolour Angelfish	*Centropyge bicolor*		1	
Koran Angelfish	*Pomacanthus semicirculatus*		1	
ACANTHURIDAE				
Regal Tang	*Paracanthurus hepatus*		3	
Yellow Tang	*Zebrasoma flavescens*		1	
APOGONIDAE				
Emperor/Banggai Cardinal Fish	*Pterapogon kauderni*	*	144	
LABRIDAE				
Cleaner Wrasse	*Labroides dimidiatus*		1	
TOTAL			**3029**	

Number of specimens 3029
Number of species 97

*indicates species bred in the Society's collection in 2004

Livestock: General Holdings – Invertebrates

Common Name & Scientific Name			STOCK 31/12/04	CITES
ARACHNIDS				
Chilean Rose Tarantula	*Phrixotrichus cala*	*	1	
Mexican Redknee Tarantula	*Euatalus smithii*	*	4	II
INSECTS				
Macleay's Spectre	*Extatosoma tiaratum*	*	4	
Fruit Beetle	*Pachnoda sp.*	*	20	
Assassin Bug	*Platymerus biguttata*	*	20	
Madagascan Hissing Cockroach	*Gromphadorhina portentosa*	*	50	
Leaf Cutter Ants	*Acromymex octospinosus*	*	1 colony	
Giant Indian Praying Mantis	*Hierodula membranacea*	*	55	
MOLLUSCS				
African Land Snail	*Achatina fulica*	*	25	
Partula Snail	*Partula varia*	*	619	
Partula Snail	*Partula mirabilis*	*	301	
Partula Snail	*Partula hyalina*	*	115	
Conch	*Fusinus polygonoides*	aq	1	
COELENTERATES				
Beaker Coral	*Acanthophyllia deshayensiana*	aq	3	II
Bubble Coral	*Plerogyra sinuosa*	aq	3	II
Brain Coral	*Trachyphyllia geofroyi*	aq	1	II
Sea Anemone	*Heteractis sp.*	aq*	20	
Leather Coral	*Sarcophyton trocheliophorum*	aq	1	
Zoanthid Colony	*Zoanthid sp.*	aq*	1	
Soft Coral	*Sinularia sp.*	aq*	100	
Mushroom Polyps	*Actinodiscus sp.*	aq*	100	II
Mouse Ear Coral	*Lobophytom crassum*	aq*	2	II
Encrusting Anemone	*Palythoa sp.*	aq*	2	
Yellow Encrusting Anemone	*Parazoanthus sp.*	aq*	6	
Bowl Coral	*Turbinaria pelata*	aq	1	II
Bowl Coral	*Turbinaria mesenterina*	aq	1	II
CRUSTACEANS				
White-clawed Crayfish	*Austropotambius pallipes*		100	
ECHINODERMS				
Long Spined Urchin	*Diadema antillarum*	aq	8	
Red Pencil Urchin	*Hetrocentrotus mammillatus*	aq	1	
Slate Pencil Urchin	*Eucidaris tribuloides*	aq	1	
Green Brittle Starfish	*Ophiarachna incrassata*	aq*	20	
TOTAL			**1586+**	

Number of specimens at year end 1586+
Number of species at year end 31

*indicates species bred in the Society's collection in 2004

aq indicates species kept by the Aquarium

Conservation & Science: Outreach During 2004, Chester Zoo supported 72

Subject	Primary Partner/Researcher	Details
Philippines: Conservation Programme	William Oliver, Fauna and Flora International	Polillo Island, Cebu and West Visayas projects including wildlife wardening, hornbill and Spotted Deer conservation projects
Nigeria: Conservation Programme	Professor Volker Sommer, University College London	Studentships, major primate and botanical research programmes and demarcation of boundaries in Gashaka Gumti National Park
Brazil, Venezuela and Belize: Jaguar Conservation Programme	Wildlife Conservation Society, USA, Alexandra Zimmermann, NEZS	Co-ordination of Jaguar-rancher conflict mitigation projects and research in Brazil and Venezuela, and support for Jaguar surveys in Belize
India: Asian Elephant Conservation Programme, Assam Hoathi Project	Alexandra Zimmermann, NEZS, Nandita Hazarika, Ecosystems India	Working with communities affected by human elephant conflict to increase awareness, monitor and analyse the nature of the conflict, and provide mitigation support
China: Conservation Programme, Yellow-throated Laughing Thrush	Roland Wirth, ZGAP, He-Fen-qi, Beijing	Continuing support of Yellow-throated Laughing Thrush surveys
China: Conservation Programme, Sichuan biodiversity/endemic bird conservation	Dr Simon Dowell, Liverpool John Moores University, Dai Bo, Sichuan Forestry Deptartment	Conservation of endemic birds and forest reserve biodiversity in the Sichuan Province
Kenya: Black Rhino Conservation Programme	Save the Rhino International, Kenya Wildlife Service	Game guard support for security and surveillance of Black Rhino in Tsavo East and Chyulu Hills National Parks.
Tanzania: Black Rhino Conservation Programme	George Adamson Wildlife Preservation Trust, Save the Rhino International	Reintroduction and protection project for Black Rhino in Mkomazi Game Reserve including fence maintenance assistance
Kenya: Black Rhino Conservation Programme	Save the Rhino International, Laikipia Wildlife Forum	Community Liaison Officer Programme providing education and awareness to local communities and schools
UK, Chester: Native Species Programme, Harvest Mice	Sarah Bird, NEZS, Cheshire Wildlife Trust	Conservation breeding, release and monitoring programme
UK: Native species recording	Sarah Bird, NEZS, rECOrd	Support for native species recording calendar project
UK, Deeside: Native Species Programme, biodiversity	Jacinta Williams, Deeside Urban Wildlife Group	Capacity support for the Sustaining Biodiversity Action project
UK, NE Wales: Native Species Programme, Barn Owls	Ian Spence, Wales Raptor Study Group	Research into the status and distribution of Barn Owls in NE Wales
UK, Cheshire: Native Species Programme, biodiversity conference	Cheshire Wildlife Trust	Support for the Cheshire 2004 Countdown Biodiversity Conference
UK, Wrexham: Native Species Programme, pond surveys	Amanda Davies, Wrexham County Borough Council	Pond biodiversity surveys in Wrexham
UK, Cheshire: Native Species Programme, Biodiversity Action Plans	Sarah Bird, NEZS	NEZS staff co-ordination and involvement in various local and national Biodiversity Action Plans
Mascarenes: Conservation Programme, Echo Parakeet	Carl Jones, Mauritius Wildlife Foundation	Continued support for the Echo Parakeet Conservation Programme including support from NEZS keeping staff
Mascarenes: Conservation Programme, Mauritius Fody	Carl Jones, Mauritius Wildlife Foundation	Supporting the establishment of a translocated population of the Mauritius Fody on Ile aux Aigrettes
Mascarenes: Conservation Programme, threatened plants	Carl Jones, Mauritius Wildlife Foundation	Sustainable conservation of the critically endangered plants
Mascarenes: Conservation Programme, Pink Pigeon	Carl Jones, Mauritius Wildlife Foundation	Studies of the blood parasites and their impact upon health, productivity and survival in Pink Pigeons
Mascarenes: Conservation Programme, marine ecosystems	Tom Hooper, Shoals Rodrigues	Rodrigues Island marine reserves and sustainable fisheries project
Mascarenes: Conservation Programme, Rodrigues Fruit Bat	Carl Jones, Mauritius Wildlife Foundation	Ongoing annual surveys and conservation of the Rodrigues Fruit Bat
India: Zoo Outreach Organisation and Wildlife Information Liaison Development Society	Sally Walker, Zoo Outreach Organisation	Supporting core administration and various conservation activities
Uganda: Human-primate conflict	Dr Catherine Hill, Oxford Brookes University	Developing mitigation methods to reduce conflict between farmers and primates
Brazil: Buffy Headed Capuchin	Jean-Marc Lernould, EEP co-ordinator	Buffy Headed Capuchin surveys
Brazil: Atlantic Forest Tapirs	Patricia Medici, Instituto de Pesquisas Ecológicas	Tapir and habitat conservation research in the Atlantic Rainforest
Brazil: Black Lion Tamarins	Cristiana Martins, Instituto de Pesquisas Ecológicas	Sponsorship for the conservation and research of a group of Black Lion Tamarins and their habitat in the Atlantic Rainforest
Colombia: White Handed Tamarins	Eric Ruivo, Lisbon Zoo	White Handed Tamarin conservation breeding programme
Colombia: Pacarana	Karin Osbahr, Bagota University	Conservation project for the endangered Pacarana
UK: Scimitar Horned Oryx	Tania Gilbert, Marwell Zoological Park	Scimitar Horned Oryx conservation genetics research
UK: Zoo Conservation International Conference	Alexandra Zimmermann, NEZS	Organiser and co-host for International symposium on the future of zoos in conservation
Democratic Republic of Congo: Okapi	Bruno Van Puijenbroeck, Okapi EEP/SSP, Gilman International Conservation	Okapi Wildlife Reserve, Breeding and Research Station in Epulu
Indonesia, Sulawesi: Endemic Ungulates	Prof. Alastair Macdonald, University of Edinburgh	Conservation of endemic ungulates in Sulawesi
Malaysia, Sabah: Wildlife wardens	Isabelle Lackman-Ancrenas, Hutan	Wildlife warden project
Asia/Global: EAZA Tiger campaign	EAZA, Zoological Society of London, 21st Century Tiger	Raising funds and awareness for Tiger conservation projects

Outreach Programmes & Projects with 58 Partners

Subject	Primary Partner/Researcher	Details
Asia/Global: EAZA Shellshock campaign	EAZA, NEZS	Co-ordination of a European campaign to raise funds and awareness for turtle and tortoise conservation
UK: Zoological Nomenclature	Dr Richard Fortey, ITZN	Support for the International Commission on Zoological Nomenclature
USA: ZIMS	Nate Flesness, ISIS	Support for the development of ZIMS (species records software)
Namibia: Lions	Lisa Hansen, Predator Conservation Trust	Research into the population ecology of desert adapted Lions
Thailand: Hornbill conservation and research	Dr Pilai Poonswad, Hornbill Research Foundation	Hornbill community based conservation, education centre and research programmes including sponsorship of two hornbill nests
Kazakhstan: Social Lapwing	Dr Nigel Collar, Birdlife International	Social Lapwing Conservation Project
Philippines: Philippine Cockatoo	Peter Widmann, Philippine Cockatoo Conservation Programme, Loro Parque Fundacion	Ongoing support for the Philippines Cockatoo Conservation Programme
Syria: Wetland Birds	Colin Wells, Royal Society for the Protection of Birds	Support for the Syria Wetlands Expedition
Philippines: Visayan Writhe-billed Hornbill	Eberhard Curio, Philippine Endemic Species Conservation Project	In-situ protection scheme for the Visayan Writhe-billed Hornbill
Democratic Republic of Congo: Congo Peafowl	Emile Mulotwa, University of Kisangani	Conservation, biology and ecology research in Salonga, N.P.
South Africa: Wattled Crane	Kerryn Morrison, South African Crane Working Group	Wattled Crane Recovery Project
Costa Rica: Great Green Macaw	Guiselle Monge Arias & Olivier Chassot, Tropical Sciences Centre	Conservation initiative for the endangered Great Green Macaw
Democratic Republic of Congo: Bird Surveys	Stuart Nixon, Dian Fossey Gorilla Fund International	Ornithological survey of the Tayna Gorilla Reserve
USA: Atelopus workshop	Stefan Lötters, Mainz University	Workshop support to establish breeding action plan and network for Atelopus
Polynesia: Partula Snails	Paul Pearce-Kelly, Partula EEP/ZSL	*in situ* conservation support for the Partula Snail through participation in the Partula Field Programme Consortium
Cambodia: Water snakes	Sharon Brookes, University of East Anglia	Project working to integrate local livelihoods with the conservation of water snakes
Malaysia, Sabah: Community fisheries	Dr Elizabeth Wood, Marine Conservation Society	Mari culture and sea ranching project
UK/Canada: Fish reintroductions	Janelle Curtis, University of British Columbia	Support for the publication of a scientific review of fish reintroductions
Nepal: Freshwater eels	Prof. Tej Kumar Shrestha, Tribhuvan University	Ecological surveys of freshwater eels in the Pokhara Valley
Myanmar: Freshwater fish survey	Dr Tyson Roberts, Smithsonian Tropical Research Institute	Surveying and cataloguing of Myanmar's freshwater fish species
Worldwide: IUCN/Conservation Breeding Specialist Group	Dr Robert C. Lacy, CBSG	Support of IUCN and CBSG activities worldwide
Seychelles: Sheath-tailed Bat	Andrew Blyth, University of Aberdeen	NEZS Zoological Studentship supporting conservation of the critically endangered Sheath-tailed Bat
Kazakhstan: Snow Leopards	Michael Riddell, University of Newcastle	NEZS Zoological Studentship supporting Snow Leopard research
Kenya: Chimpanzee	Edward Chi-Hang Yuen, Manchester Metropolitan University	NEZS Zoological Studentship supporting an investigation into the social organisation of Chimpanzees
Philippines: Coral reef awareness	William Vincent, University of Durham	NEZS Zoological Studentship supporting the Durham University Coral Awareness Research Expedition
Bolivia: Bosque-Tucumano Forest Expedition	Cara Lavery, University of Glasgow	NEZS Zoological Studentship supporting an expedition to the Bosque-Tucumano Forest
South Africa: Brown Hyaena	Emma Stone, Manchester Metropolitan University	NEZS Zoological Studentship supporting a study into the density of Brown Hyaena in protected and unprotected areas
Nigeria: Olive Baboons	Anna Weyher, University of Surrey Roehampton	NEZS Veterinary Studentship supporting a study comparing parasite loads between crop raiding and forest dwelling baboons
India: Asian Elephants	Avanti Mallapur, University of Edinburgh	Richard Hughes Scholarship Award supporting a study into the welfare of elephants in India
Mexico: Spider Monkey	Nick Davis, NEZS	Working visit of Chester Zoo staff researching Spider Monkeys
Cameroon: Capacity Building	Jason Boyer, NEZS, Jonathon Kang, Limbe Wildlife Centre	Keeper exchange with Limbe Wildlife Centre
Uganda: Capacity Building	Chris Yarwood & Clare Lightfoot, NEZS	Capacity building working visit of Chester Zoo staff to Ngamba Island Sanctuary
Democratic Republic of Congo: Primate	Steve Unwin, NEZS	Working visit of Chester Zoo veterinary staff to primate veterinary workshop
Panama: Tapirs	Gareth Redston, NEZS	Participation of Chester Zoo Education Department staff to the International Tapir Symposium as part of the Education Committee
Zambia: Lion, Cheetah and Leopard	Mark Jeremy & Sarah Goodchild, NEZS	Working visit of Chester Zoo staff to assist Munda Wanga Zoo with enclosure construction for big cats
Puerto Rico: Puerto Rican Crested Toad	Karen Entwistle, NEZS	Working visit of Chester Zoo staff to assist in a Puerto Rican Crested Toad breeding and release project
Namibia: Desert Elephant	Natalie Boyd NEZS	Staff participation on Desert Elephant Project

On-site Research

This involved 171 researchers (from 40 institutions) and from 181 projects. The majority of researchers were students, including 123 BSc, 16 MSc, 9 PhD, 3 MPhil, 3 BA, 2 BVetMed, 1HND and 1 A Level. Of these students 121 (77%) were based in the North West; 35 students from the rest of the UK (22%) and 2 students from overseas (1%). 107 (59%) studies focussed on applied research (animal welfare, husbandry, vet care and conservation) and 74 (41%) on basic research (pure zoology). Some studies were conducted by Research Associates.

First Name	Last Name	Qualification	Subject	University or College	Zoo Area of Study
Sarah	Andrews	BSc	Biological Anthropology	Liverpool John Moores U	Chimpanzees, displacement behaviour
Jessica	Ashton	BSc	Archaeological Science	Sheffield U	Chimpanzees, Sulawesi Crested Macaques, sexual dimorphism
Filippo	Aureli	N/A	Research Associate	Liverpool John Moores U	Chimpanzees, Colombian Black Spider Monkeys, social dynamics
Andrew	Bagnall	PhD	Conservation Biology	Manchester Metropolitan U	Cockatoos, conservation
Gillian	Bailey	BSc	Conservation Medicine	Liverpool U	Parrots, breeding, sex ratios / Zoo animals, husbandry
Joanna	Bailey	BSc	Psychology	U C Chester	Hornbills, nesting behaviour
Louise	Battery	BSc	Biology	Manchester Metropolitan U	Onagers, Przewalski's Horses, social behaviour
Philippa	Bell	BSc	Biology	Aberdeen U	Slender-tailed Meerkats, social interactions
Neil	Beveridge	BSc	Animal Behaviour and Welfare	U C Chester	Asian Elephants, ethogram
Michael	Bingham	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Sharon	Bonnar	BSc	Biological Anthropology	Liverpool John Moores U	Orang-utans, behaviour
Rana	Bozorgmanesh	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Alice	Brewer	BSc	Zoology	Liverpool U	Conures, Macaws, interspecific interactions
Deborah	Bruce	BSc	Zoology with Evolutionary Psychology	Liverpool U	Parakeets, intraspecific interactions
Julie	Burnard	BSc	Psychology	U C Chester	Parrots, Keas, activity budgets
Kirsty	Burrell	N/A	Research Assistant, Chester Zoo	N/A	Asian Elephants, 24-hour activity, behaviour / Asian Elephants, altruism, birth Asian Elephants, birth behaviour indicators / Asian Elephants, birth, herd dynamics
Tara	Buxton	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Francesca	Byatt	BSc	Biological Anthropology	Liverpool John Moores U	Chimpanzees, food anticipation
Bradley	Cain	PhD	Biology	Manchester Metropolitan U	Black Rhinos, genetics
Alexander	Cerwenka	N/A	Volunteer, Chester Zoo	N/A	Spectacled Bears, behaviour, welfare
Julian	Cheshire	BSc	Zoology	Liverpool U	Chimpanzees, Sulawesi Crested Macaques, social behaviour
Peter	Chevins	BSc	Biology	Keele U	Przewalski's Horses, social behaviour
Lindsay	Clarke	BSc	Biology	Manchester Metropolitan U	Lories, Lorikeets, food preferences
Dorothee	Classen	PhD	Zoology with Ethology	Cologne Zoo	Orang-utans, social relationships
Lisa	Clifforde	BSc	Animal Behaviour and Welfare	U C Chester	Mandrills, visitor effects
Jenny	Clift	BSc	Biological Sciences	Manchester Metropolitan U	Primates, conservation, behaviour
Helen	Clubb	BSc	N/A	Liverpool U	Primates, conservation, behaviour
Georgina	Cook	MSc	Applied Animal Behaviour and Welfare	Edinburgh U	Black Rhinos, visitor effects
Sally	Cowley	BSc	Zoology	Liverpool John Moores U	Western Grey Kangaroos, enrichment
Hayley	Cross	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Clare	Daniel	N/A	Animal Keeper, Chester Zoo	N/A	Hornbills, nesting behaviour
Llinos	Davies	BSc	Zoology	Liverpool U	Babirusa, Red River Hogs, enclosure utilisation
Nick	Davis	PhD	Psychology	U C Chester	Colombian Black Spider Monkeys, endocrinology, behaviour, welfare
Andrew	Dillon	HND	Landscape Technology	Welsh C of Horticulture	Animal exhibits, landscaping
Hannah	Drury	BSc	Zoology	Liverpool U	Jaguars, genetics
Jane	East	BSc	Animal Behaviour	U C Chester	Asian Elephants, behaviour, mother-offspring interactions
Victoria	Edmonds	PhD	Zoology	Cambridge U	Bats, flight aerodynamics
Charlotte	Edwards	BSc	Biological Sciences	Manchester Metropolitan U	Sulawesi Crested Macaques, foraging behaviour
Joanne	Eggo	BSc	Wildlife Conservation	Liverpool John Moores U	Chimpanzees, social behaviour
Gareth	Evans	BSc	Applied Zoology	Liverpool John Moores U	Domestic Chickens, dominance
Rachel	Everatt	BSc	Zoology	U of Wales, Aberystwyth	Asian Elephants, behaviour
Caroline	Farrant	BSc	Zoology	Liverpool U	Bongos, breeding
Rebecca	Fawcett	BSc	Animal Behaviour	U C Chester	Asian Small-clawed Otters, dominance
Joanna	Finch	BSc	Animal Behaviour and Welfare	U C Chester	Onagers, enrichment
Sarah	Fitzgerald	N/A	Research Assistant	Liverpool U	Chimpanzees, Sulawesi Crested Macaques, grooming / Chimpanzees, tool-use
Nadine	Fletcher	BSc	Animal Behaviour	U C Chester	Giraffes, maternal investment, social development
Kate	Flory	BSc	Biology	Keele U	Harvest Mice, behaviour
Nicola	Forshaw	MPhil	Psychology and Biology	U C Chester	Callitrichids, relocations
Emily	Francis	BSc	Animal Behaviour and Welfare	U C Chester	Callitrichids, visitor effects
Orlaith	Fraser	PhD	Biological Anthropology	Liverpool John Moores U	Chimpanzees, Sulawesi Crested Macaques, post-conflict behaviour
Sarah	Friday	BSc	Zoology	U of Wales, Bangor	Visitors, education
Donna	Fry	BSc	Psychology	U C Chester	Western Grey Kangaroos, activity, courtship, enclosure utilisation
Katy	George	BSc	Zoology	U of Wales, Aberystwyth	Red Pandas, visitor effects
Shona	Goulding	MSc	Animal Reproduction	Leahurst Veterinary School, Liverpool	Jaguars, reproduction / Colombian Black Spider Monkeys, fertility
Eleanor	Gower-Johnson	BSc	Animal Science	Hartpury C	Asian Elephants, birth, herd dynamics
Fiona	Gray	BSc	Zoology	Liverpool John Moores U	Lemurs, displacement, dominance
Kelly	Green	BSc	Zoology	U of Wales, Aberystwyth	Stingrays, social behaviour
Elizabeth	Griffin	BSc	Psychology	U C Chester	Colombian Black Spider Monkeys, visitor effects
Elizabeth	Hague	BSc	Biological Sciences	U of Wales, Aberystwyth	Buffy-headed Capuchins, visitor effects
Kerry	Hall	BSc	Zoology	Liverpool U	Buffy-headed Capuchins, visitor effects
Sara	Hamer	BSc	Animal Behaviour	U C Chester	Giraffes, welfare
Sally	Hardie	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Katherine	Hardman	BVetMed	Veterinary Science	Royal Veterinary C, London	Axolotls, interactions, space utilisation, light preferences
Jillian	Hargreaves	BSc	Biological Studies	St Martin's C	Chimpanzees, social interactions
Christy	Harrison	BSc	Zoology	U of Wales, Aberystwyth	Colombian Black Spider Monkeys, behavioural ecology
Kelly	Harrison	BSc	Psychology	U C Chester	Western Grey Kangaroos, activity, courtship, enclosure utilisation
Nicholas	Harrison	BSc	Psychology and Philosophy	Leeds U	Amur Tigers, enclosure utilisation
Tammy	Harrison	N/A	Volunteer, Chester Zoo	N/A	Parrots, activity levels, enrichment
Laura	Helsby	BSc	Psychology and Biology	Liverpool John Moores U	Asian Elephants, adult-juvenile interactions
Diane	Heyder-Bruckner	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Sonya	Hill	N/A	Research Assistant, Chester Zoo	N/A	Hornbills, nesting behaviour / Spectacled Bears, behaviour, welfare
Rebecca	Hogg	BSc	Zoology	Liverpool U	Chimpanzees, grooming
Emma	Holmes	N/A	Volunteer, Chester Zoo	N/A	Spectacled Bears, behaviour, welfare
Chantel	Holmes	BSc	Psychology with Counselling Skills	U C Chester	Chimpanzees, conflict management
Lottie	Hosie	N/A	N/A	U C Chester	Newts, egg-laying behaviour
Stephen	Hübner	PhD	Conservation Genetics	JW Goethe U, Germany	Hornbills, genetics
Emma	Hunt	BSc	Animal behaviour	U C Chester	Chimpanzees, behaviour
Louise	Hursey	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Karen	Hurst	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry / Zoo animals, sex ratios
Gilly	Irving-Lewis	MSc	Applied Animal Behaviour and Welfare	Edinburgh U	Sulawesi Crested Macaques, behaviour, social structure, spatial relationships
Gail	James	BSc	Biology	Keele U	Seahorses, social behaviour
Rebecca	James	BSc	Psychology	U C Chester	Western Grey Kangaroos, activity, courtship, enclosure utilisation
Rebecca	James	BSc	Psychology	U C Chester	Chimpanzees, food sharing, personality

First Name	Last Name	Qualification	Subject	University or College	Zoo Area of Study
Charlotte	Jennings	BSc	Animal Behaviour and Welfare	U C Chester	Babirusa, oestrous, behaviour
Sarah	Jolly	BSc	Zoology	Liverpool U	Lories, feeding behaviour, mouthparts
Katherine	Jones	BSc	Zoology with Evolutionary Psychology	Liverpool U	Grevy's Zebras, Red River Hogs, behaviour, enrichment
Nicola	Jones	BSc	Psychology	U C Chester	Hornbills, nesting behaviour
Kristen	Jule	MSc	Animal Behaviour	Exeter U	Asiatic Lions, Amur Tigers, enclosure utilisation
Fiona	Just	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Eleanor	Kean	BSc	Animal Behaviour	U C Chester	Rodents, Harvest Mice, radio tagging, conservation
Sarah	Kerr	BSc	Zoology	U of Wales, Aberystwyth	Californian Sealions, enrichment
Stephanie	Law	BSc	Zoology	Liverpool U	Axolotls, behaviour
Emma	Lindop	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Marie	Llewellyn	BSc	Animal Behaviour and Welfare	U C Chester	Asian Elephants, ethogram
Daniel	Lockley	BSc	Animal Behaviour and Welfare	U C Chester	Red-necked Wallabies, visitor effects
Jennifer	Low	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Melanie	Lowe	A-Level	Psychology	Bolton School Girls' Division	Chimpanzees, infant behaviour
Richard	Madej	BSc	Animal Behaviour	U C Chester	Jaguars, Asiatic Lions, Servals, Amur Tigers, visitor effects
Joanne	Marsh	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Marven	Mascall	BSc	Psychology	U C Chester	Parrots, Keas, activity budgets
Lynne	McAlley	BSc	Animal Behaviour and Welfare	U C Chester	Mandrills, enrichment, behaviour
Stuart	McCallum	BSc	Zoology with Marine Zoology	U of Wales, Aberystwyth	Bats, flight behaviour
Terri	McGarry	BSc	Psychology	U C Chester	Western Grey Kangaroos, activity, courtship, enclosure utilisation
Niall	McGilchrist	BSc	Zoology	Liverpool U	Californian Sealions, enclosure utilisation, partner preference, welfare
Adrian	McNiven	BSc	Biology	York U	Zoo animals, nitrous oxide in breath
Jackie	Moody	BSc	Animal Studies	Sparsholt C	Asian Elephants, nutrition
Carina	Morris	BSc	Psychology	U C Chester	Colombian Black Spider Monkeys, enclosure utilisation
Kirsty	Morrison	BSc	Zoology	Liverpool John Moores U	Sulawesi Crested Chimpanzees, Macaques, feeding behaviour
Claire	Morrissey	BSc	Psychology	U C Chester	Hornbills, nesting behaviour
Claire	Morrissey	BSc	Psychology	U C Chester	Oriental Small-clawed Otters, enclosure utilisation, visitor effects
Jonathan	Moss	BSc	Zoology	U of Wales, Aberystwyth	Red River Hogs, behaviour
Joanne	Mottershead	BSc	Animal Behaviour and Welfare	U C Chester	Chimpanzees, visitor effects
Victoria	Moulton	BSc	Zoology	Liverpool John Moores U	Scimitar-horned Oryx, Grevy's Zebras, hierarchy, social interaction
Anna	Murray	BSc	Biological Sciences	U C Chester	Chimpanzees, humans, morphological laterality
Kerri	Nicholls	BSc	Biological Sciences	U C Chester	Oriental Small-clawed Otters, behaviour
Tawnia	Norman	BSc	Animal Behaviour	U C Chester	Sulawesi Crested Macaques, social interactions
Karen	Norris	PhD	Biological Sciences	U C Chester	Newts, egg-laying behaviour
Emily	Northover	BSc	Biological Sciences	U C Chester	Buffy-headed Capuchins, enclosure utilisation
Oliver	O'Malley	BSc	Zoology with Evolutionary Psychology	Liverpool U	Slender-tailed Meerkats, Coatis, Oriental Small-clawed Otters, social behaviour
Cecilia	Orme	BSc	Zoology	Leeds U	Sulawesi Crested Macaques, grooming
David	Palmer	BA	Animal Industry Management	Berkshire C of Agriculture	Slender-tailed Meerkats, predator avoidance behaviour
Kelly	Parker	BA	Psychology	U C Chester	Oriental Small-clawed Otters, play behaviour
Louise	Perry	BSc	Biology	Keele U	Przewalski's Horses, social behaviour
Andromeda	Persaud-Richardson	MSc	Behavioural and Evolutionary Ecology	Manchester Metropolitan U	Scimitar-horned Oryx, social structure
Debbie	Phillips	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Stephanie	Pilborough	BSc	Biological Sciences	U C Chester	Cockatoos, diet, social interactions
Claire	Prescott	BSc	Wildlife Conservation	Liverpool John Moores U	Carnivores, Jaguars, enrichment
Rachael	Short	BSc	Behavioural Sciences	Liverpool U	Chimpanzees, play behaviour
Rachel	Miller	BSc	Zoology	Liverpool U	Bats, behaviour, enclosure utilisation, visitor effects
David	Read	MSc	Primate Conservation	Oxford Brookes U	Buffy-headed Capuchins, visitor effects
Anna	Riach	MSc	Zoology	Glasgow U	Birds, sex ratio biases
Lynne	Riley	BSc	Psychology	Bolton Institute	Chimpanzees, morphological laterality
Rebecca	Robinson	BSc	Zoology	Liverpool U	Domestic Horses, Grevy's Zebras, Onager, Prezwalski's Horses, nutrition
Caroline	Robson	BSc	Applied Animal Behaviour and Training	Bishop Burton C	Asian Elephants, visitor and weather effects
Hannah	Rowland	N/A	Volunteer	N/A	Orang-utans, translocation
Elaine	Ray	BSc	Psychology	Liverpool U	Orang-utans, enrichment
Yvan Ilya	Russell	PhD	Biological Sciences	Liverpool U	Chimpanzees, Sulawesi Crested Macaques, reciprocal behaviour
Colleen	Schaffner	N/A	Research Associate	U C Chester	Callitrichids, social relationships, welfare
Colleen	Schaffner	N/A	Research Associate	U C Chester	Colombian Black Spider Monkeys, behaviour, hormones
Emmeline	Scott	BSc	Animal Behaviour and Wildlife Biology	Anglia Polytechnic U	Harvest Mice, radio tagging, conservation
Carly	Seal	BSc	Psychology	U C Chester	Western Grey Kangaroos, activity, courtship, enclosure utilisation
Patrick	Sells	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Tammy	Shadbolt	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Shan	Siah	MPhil	Conservation Medicine	Liverpool U	Zoo animals, disease transmission
Carol	Sloan	BSc	Animal Behaviour	Liverpool John Moores U	Slender-tailed Meerkats, behaviour
Tessa	Smith	N/A	Research Associate	U C Chester	Callitrichids, social relationships, welfare
Kathryn	Smith	BSc	Zoology	Liverpool U	Onagers, visitor effects
Sue	Stamp	BSc	Psychology	U C Chester	Parrots, Keas, activity budgets
Christina	Stanley	N/A	Volunteer	Volunteer	Scimitar-Horned Oryx, Grevy's Zebras, mixed exhibits, dominance
Laura	Starkey	BSc	Equine Science	Hartpury C	Barasingha, Blackbuck, Burmese Brow-antlered Deer, activity, enclosure utilisation, interspecific interaction
Vicky	Stock	BSc	Zoology with Marine Zoology	U of Wales, Aberystwyth	Komodo Dragons, behaviour, enclosure use
Helen	Tasker	BSc	Zoology	Liverpool John Moores U	Spectacled Bears, activity budgets, enclosure utilisation
Jayne	Tennant	N/A	N/A	U C Chester	Chimpanzees, morphological laterality
Janice	Thompson	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Katie	Thomson	BSc	Zoology	Liverpool John Moores U	Californian Sealions, enrichment, welfare
Evelina	Turtenwaldova	BSc	Human Sciences	Durham U	Buffy-headed Capuchins, tool-use
Catherine	Vaughan	BA	Wildlife Photography	Blackpool and The Fylde C	Orang-utans, facial communication
Dr Sarah-Jane	Vick	N/A	Psychology	Portsmouth U	Chimpanzees, Facial Action Coding System
Sarah	Walker	N/A	Research Assistant	Liverpool U	Chimpanzees, Sulawesi Crested Macaques, grooming
Bridget	Waller	MPhil	Psychology	Portsmouth U	Chimpanzees, Facial Action Coding System
Samantha	Ward	BSc	Zoology	Paignton Zoo	Black Rhinos, human interaction
Anne	Westwood	BSc	Animal Behaviour	U C Chester	Sulawesi Crested Macaques, juvenile play behaviour
Simon	Wheeler	BSc	Conservation Medicine	Liverpool U	Chimpanzees, female sexual swelling
James	Wignall	BVetMed	Veterinary Science	Royal Veterinary C, London	Spectacled Bears, behaviour, enrichment
Emma	Wild	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Lisa	Williams	N/A	Volunteer	U C Chester	Asian Elephants, 24-hour activity, behaviour
David	Williams	BSc	Zoology	Liverpool U	Orang-utans, time budgets
Peter	Willis	MSc	Psychology	U C Chester	Sulawesi Crested Macaques, behaviour
Alexandra	Wilson	BSc	Zoology	Liverpool U	Guanacos, social behaviour
Louise	Worth	BSc	Biosciences	Liverpool U	Zoo animals, enrichment
Roz	Wright	BSc	Conservation Medicine	Liverpool U	Zoo animals, husbandry
Joanne	Wriglesworth	N/A	Volunteer	Volunteer	Parrots, Keas, social interactions, enclosure utilisation
Kerrie	Yates	BSc	Applied Zoology	Liverpool John Moores U	Sulawesi Crested Macaques, post-grooming behaviour

On-site Education & Training

We were pleased to offer work experience training to 122 students from 57 separate institutions in 7 different countries, 5 of them European. 60 (49%) of the students were from the North West and another 42 (35%) from the rest of the UK. In addition 22 Vets, Vet Students and Vet Nurses received training in Animal Health Care (see page 14). We thank them for their contribution to the Zoo.

First Name	Last Name	Course and College/University/School	Home Address
Jennifer	Achilles	Post A Levels, Pre Vet Science	Wirral
Craig	Acton	Nat Dip Animal Care, Reaseheath College	Cheshire
Andy	Barcis	Veterinary Science, Liverpool University	Lincolnshire
Peter	Baker	Helsby High School, (Amenity & Gardens)	Runcorn
Sara	Barnett	Nat Dip Animal Care, Wiltshire College	Swindon
Michael	Bennett	Stanney High School, (IT)	Wirral
Linsey	Berryman	Prince's Trust, Warrington, (Amenity & Gardens)	Warrington
Rhianna	Birchall	Holywell High School, (Retail/Catering)	Holywell
Dale	Blackburn	The Grange Comprehensive School, (Catering)	Runcorn
Kim	Block	Animal Care, ROC West Brabant, Netherlands	Netherlands
Elizabeth	Bowen	Animal Science, Aberystwyth University, (One Year Placement)	West Sussex
Lisa	Brewster	Vet Science, Liverpool University, (Work Shadowing)	Runcorn
Holly	Buckard	Botany & Horticulture	Warrington
Elise	Butler	Nat Dip Animal Management, Welsh College of Horticulture	Ruthin
Denise	Caldwell	Nat Dip Animal Care, Reaseheath College	Middlewich
Cassie	Carpenter	Nat Dip Animal Management, Wiltshire College, Lackham	Wiltshire
Tom	Chapman	A Levels, Ridge Danyers College (One Year Placement)	Stockport
Gemma	Clark	Vet Science, Liverpool University, (Work Shadowing)	Lincolnshire
Lucy	Clark	Nat Dip Animal Management, Huddersfield Technical College	Oldham
Christopher	Clowes	Horticulture, Reaseheath College	Chester
Yvonne	Cowen	Work Shadowing	Derbyshire
Tessa	Cole	Biological Sciences, Edinburgh University	Macclesfield
Alexander	Corbishley	Veterinary Medicine, Cambridge University	Northampton
Ray	Cowap	Work Shadowing	Chester
Nicholas	Daniels	Archaeology, Liverpool University	Derbyshire
James	Dawson	'Aim Higher' Scheme, (Work Shadowing)	Manchester
Tamsin	Day	Veterinary Science, Liverpool University	Cheshire
William	DeGranville	Veterinary Science, Liverpool University	Somerset
Philip	Delaney	Nat Dip Animal Care, Reaseheath College	Wirral
Sarah	Dickens	Post A Levels, Yale College, Pre Vet School	Denbighshire
Andrew	Dillon	Landscape Technology, Welsh College of Horticulture,	Flintshire
Jamie	Donoher	Kingsway High School, (Botany & Horticulture)	Chester
Gabby	Drake	Vet Science, Liverpool University	London
James	Duffield	Vet Science, Liverpool University	Devon
Rachael	Eckersley	Nat Dip Animal Care, Reaseheath College	Stockport
Carina	Ellebaek	Animal Care, Danish Centre for Green Vocational Training	Denmark
Holly	Ellingham	A Levels, Sir John Deans Sixth Form College, Pre Vet Science	Cheshire
Lauren	Evans	Nat Dip Animal Management, Merrist Wood College	Surrey
Michelle	Evans	Animal Care, Bicton College	Exeter
Beth	Fletcher-Hunt	Bronze Award, Duke of Edinburgh, (Visitor Services)	Chester
Philippa	Foulkes	A Levels, Ysgol-Y-Berwyn School, Pre Vet Science	Gwynedd
Katie	Frith	Zoology, Durham University	Cheshire
Alicia	Fuller	Vet Science, Liverpool University	Liverpool
Robert	Garton	Nat Dip Animal Care, Brooksby Melton College	Leicester
Duncan	Giles	Vet Science, Liverpool University	Scotland
Jane	Gosling	Applied to RSPCA	Shropshire
Katherine	Green	Nat Dip Animal Management, Guildford College	Aldershot
Jeroen	Greydanus	Work Shadowing	Wales
Rebecca	Griffiths	Bronze Award, Duke of Edinburgh, (Visitor Services)	Chester
Michelle	Hare	Animal Behaviour, Chester College	Leicester
Rachel	Harris	Vet Science, Liverpool University	Wiltshire
Mark	Hayton	Post A Levels, Pre Veterinary Science	Cumbria
Emma	Hind	Animal Behaviour & Welfare, Chester College	Cheshire
Nicola	Hind	Animal Behaviour & Welfare, Chester College,	Cheshire
Victoria	Hoare	Vet Science, Liverpool University	Warwickshire
Liz	Hurst	Psychology & Biology, John Moore's University	Lancashire
James	Hudson	Sutton High School, (Catering)	Cheshire
Charlotte	Hutchinson	Nat Dip Animal Management, Welsh College of Horticulture	Chester
Marina	Jansson	Aniaml Care, Spanga Gymnasium, Sweden	Sweden
Ami	Jennings	Vet Science, Liverpool University	Surrey
Catherine	Jones	A Levels, Llanfyllin High School, Pre Vet Science	Oswestry
Jonathan	Kum	Keeper Exchange	Cameroon
Stephanie	Keen	Animal Science, Aberystwyth University (One Year Placement)	Wirral
Nina	Kjeldsen	Animal Care, Roskilde Technical College, Denmark	Denmark
Elise	Kovac	Keeper, Adalaide Zoo, Australia	Australia
Rebecca	Lang	A Levels, New College, Telford, Pre Vet Science	Shropshire
Martin	Lauridsen	Animal Care, Roskilde Technical College, Denmark	Denmark
Robert	Lawrie	Vet Science, Liverpool University	Glasgow
Michael	Leach	HND Animal Management, Wiltshire College	Wiltshire
Hannah	Leyland	Vet Science, Liverpool University	Wirral
Jenny	Ljung	Animal Care, Spanga Gymnasium, Sweden	Sweden
Daniel	Lockley	Animal Behaviour & Welfare, Chester College	Stafford
Stephanie	Lockwood	Nat Dip Animal Management, Huddersfield Technical College	Huddersfield
Christian	Ludvigsen	HDX Higher Technical College, Denmark, (Botany & Horticulture)	Denmark
Scott	McKenzie	A Levels, Kings School, Pre Zoology	Chester
Claire	Mellor	Vet Science, Liverpool University	Caernarfon
Beverley	Mercer	Animal Behaviour, Chester College	Cambridgshire
Laura	Mockett	Zoology & Marine Zoology, Bangor University	Yorkshire
Darren	Neesam	A Levels, Welshpool High School, Pre Vet Science	Welshpool
Cherie	Nevitt	Work Shadowing, IT, Health & Safety, Security & Facilities	Crewe
Esther	Oerlemans	Animal Care, ROC West Brabant, Netherlands	Netherlands
Claire	Okell	A Levels, Queens School, Pre Vet Science	Chester
Robert	Peace	Nat Dip Animal Management, Welsh College of Horticulture	Cheshire
Lisbeth	Pederson	Animal Care, Roskilde Technical College, Denmark	Denmark
Annette	Petersen	Animal Care, Roskilde Technical College, Denmark	Denmark
Laura	Pennington	A Levels, Grange School, Pre Vet Science	Cheshire
Helen	Petrou	Animal Behaviour & Welfare, Chester College	Yorkshire
Stephanie	Pillborough	Animal Behaviour, Chester College	Middlesex
Emma	Poore	Vet Science, Liverpool University	Cambridge
Becky	Poval	Wirral Hospital School, (IT)	Wirral
Katie	Prescott	Zoology, University of Manchester	Wigan
Anna	Reeves	Zoology, Newcastle-Upon-Tyne University	Cheshire
Sharon	Saunders	Adv Dip Animal Management, St Helen's College	Wirral
Jess	Seaton	Post A Levels, Pre Zoology, (One Year Placement)	Chester
Laura	Sloan	A Levels, West Kirby Grammar School, Pre Vet Science	Wirral
Claire	Smith	A Levels, Helsby High School, Pre Vet Science	Runcorn
Freya	Smith	Vet Science, Liverpool University	Oxford
Gemma	Stephen	Animal Behaviour & Welfare, Chester College	Lincolnshire
Lynn	Stevenson	Nutrition Assistant (10 Month Placement)	Glasgow
Jodie	Stirrup	Equine Studies, Warwickshire College	Lancashire
Ria	Thomas	Animal Management, Kingston Maurward College	Dorset
Philip	Thornton	Animal Care, Wiltshire College	Wiltshire
John	Thorpe	Hawarden High School, (Catering/Retail)	Chester
Ian	Timmis	West Cheshire College, (IT)	Cheshire
Damian	Turner	Upton High School, (Catering/Retail)	Chester
Phil	Tye	Animal Management, Kingston Maurward College	Dorset
George	Vernon	Shrewsbury School, (Animal Supplies)	Flintshire
Pia	Walczok	Keeper Exchange, Tierpark Hagenbeck, Germany	Germany
Hannah	Walker	A Levels, Grange School, Hartford, Pre Vet Science	Cheshire
Anne	Westwood	Animal Behaviour, Chester College	Nottingham
Simon	Wheeler	Vet Science, Liverpool University	Liverpool
James	Wignall	Veterinary Medicine, Royal Veterinary College, London	Chester
Sarah	Wilcock	A Levels, Ashton Sixth Form College, Pre Zoology	Cheshire
Daniel	Williams	Wrexham Education Services, (Work Shadowing)	Wrexham
Debra	Williams	Animal Studies, Welsh College of Horticulture	Gwynedd
Samantha	Wilson	Bishop's High School, (Retail)	Cheshire
Samantha	Woodrow	Animal Care, Reaseheath College, (One Year Placement)	Cheshire
Sarah	Worthington	Work Shadowing	Liverpool
Caroline	Wretfalk	Animal Care, Spanga Gymnasium, Sweden	Sweden
Claire	Wright	A Levels, St Edward's College, Liverpool, Pre Vet Science	Liverpool
Rachael	Wright	Queen's Park High School, (Botany & Horticulture)	Chester
Katherine	Wynn-Owen	Vet Science, Liverpool University	Hertfordshire

Scientific Advisory & Specialist Group Chairs

Conservation & Research

Chester Zoo provides Chairs at a high level of conservation and research management and co-ordination. At international level, staff lead 18 senior advisory groups including for the Species Survival Commission (World Conservation Union, IUCN) and the European Association of Zoos and Aquaria (EAZA). Support is provided for 13 EAZA (EEP) Taxon Advisory Groups (TAGs). Staff also lead six Joint Management of Species Group (JMSG) TAGs for the British and Irish Association of Zoos and Aquariums (BIAZA).

Taxon or Topic	Chair
Global Freshwater Fish SG (World Conservation Union/Wetlands International)	Prof. Gordon McGregor Reid (Chair)
Research Comittee (EAZA)	Prof. Gordon McGregor Reid (Co-chair)
Elephant TAG (BIAZA)	Mark Pilgrim (Vice Chair)
Parrot TAG (EAZA)	Dr Roger Wilkinson (Chair)
Hornbill TAG (EAZA)	Dr Roger Wilkinson (Co-chair)
Parrot TAG (BIAZA)	*Andrew Bagnall (Chair)
Small Mammal TAG (EAZA)	Mike Jordan (Co-chair)
Rodent/Insectivore/Lagomorph SG (IUCN SSC)	Mike Jordan (Chair)
Europe and North Asia Reintroduction SG (IUCN SSC)	Mike Jordan (Chair)
Rodent & Lagomorph TAG (BIAZA)	Mike Jordan (Chair)
Reptile and Amphibian TAG (EAZA)	Kevin Buley (Co-chair)
Herpetology TAG (BIAZA)	Kevin Buley (Co-chair)
Turtle Survival Alliance – Europe (IUCN SSC)	Kevin Buley (Vice-chair)
Captive Breeding Specialist Group Declining Amphibian Populations Task Force (IUCN SSC)	Kevin Buley (Chair)
Herpetology TAG (BIAZA)	Douglas Sherriff (Co-chair)

Breeding Programme Studbook Keepers/Co-ordinators

Chester Zoo is an active participant in 15 national BIAZA Joint Management of Species Programmes (JMSPs); international European Endangered Species Programmes (EEPs) and Studbooks (ESBs) for the co-ordination of breeding programmes within Taxon Advisory Groups plus co-ordinator of two European Union of Aquarium – Curators Fish and Aquatic Invertebrate Taxon Advisory Group (EUAC/FAITAG) Conservation Groups.

Species	Chair
Northern Talapoin Monkey (ESB)	David Brunger
Jaguar (ESB)	Mark Pilgrim
Congo Buffalo (ESB)	David Brunger
Gemsbok (JMSP)	Charles MacKenzie
West African Crowned Crane (JMSP)	Dr Roger Wilkinson
Black-winged Lory (ESB)	* Andrew Bagnall
Yellow-backed Chattering Lory (ESB)	* Andrew Bagnall
Palm Cockatoo (EEP)	Dr Roger Wilkinson & David Brunger
Blue-eyed Cockatoo (ESB)	Dr Roger Wilkinson
Ecuadorian Amazon Parrot (EEP)	Mark Pilgrim
Mindanao Writhe-billed Hornbill (EEP)	Dr Roger Wilkinson
Philippine Sail Finned Lizard (JMSP)	Isolde McGeorge
Madagascan Tree Boa (ESB)	Kevin Buley
Native Crayfish Conservation Group (EUAC/FAITAG)	Ian Hughes
Tadpole Shrimp Conservation Group (EUAC/FAITAG)	Ian Hughes

* Until June 2004

Meetings 2004

More than 23 meetings were held in the Zoo Lecture Theatre to support conservation, education, animal welfare and science. In addition, dozens of talks were delivered by Zoo Staff at national and international conferences.

23 January 2004 Going Wild in South America – Nan Swannie

25 March 2004 Orca: The Sociable Predator – Erich Hoyt

24 September 2004 The Predator Conservation Trust, Namibia – Lise Hanssen

15 October 2004 Sketch Safari – The Orang-utans of Borneo – Jo Lynch

12 November 2004 Polar Bear Encounters – Susan Flood and Doug Allan

Members and Special Meetings 2004

17 January Andrea Fidgett – Catering for Fussy Foragers

24 January Steve Unwin – Primate Perils

14 February Steve Manning – Orchid Weeds

28 February Eleanor O'Hanlon – Tracking the Russian Wolf

6 March Jean Aitchison – Talking Animals

3 April Cyril Rosen – Monkey Missionaries

6 May VIP Visit by Lord Robert Winston

4 June Susan Snell & Polly Tucker – Life through a Lens

11 September Daniel Hahn – Tower Menagerie

25 September Lise Hannsen & Philip Stander – Leopards and Bushmen

8 October Jo Thompson – An evening of Great Apes

23 October Andy Harmer – Brief Exposure

13 November Penny Rudd – The Harvest Mice Release Programme

26 November Simon Marsh, Nick Davies, Belinda Porter and Clare Daniels – Keepers In the Field

11 December Dr Gordon McGregor Reid – It's a matter of Life and Death, Taxonomy and Conservation in Zoos and Aquariums

Special Meetings

The Opening of Minature Monkeys Sir Winston ***Thursday 6 May***

Cheshire Life Birthday Party (via Marketing) ***Monday 10 May***

Dreamnight ***Friday 25 June***

Staff on External Boards: Conservation, Welfare, Research & Education

Staff led or participated in many committees at international, regional and local level. In addition to those boards listed below, several staff are Chairs or members of Taxon Advisory Groups (TAGs) and co-ordinators of European Endangered Species Programmes (EEPs), Joint Management of Species Programmes (JMSPs) or other conservation groups [see previous page].

Professor Gordon McGregor Reid, Director

President, Linnean Society of London

President Elect, World Association of Zoos & Aquariums (WAZA); Chairman WAZA Aquarium Committee; Member, Steering Committee World Zoo and Aquarium Conservation Strategy

Member, World Conservation Union (IUCN), Member, IUCN/SSC Asian Elephant Specialist Group

Member of Council, European Association of Zoos and Aquaria (EAZA); and Co-chair, Research Committee; Member, Ethics & Membership Committee

Trustee Frozen Ark Project (British Museum of Natural History)

Member, WWF Conservation Programmes Committee

Academic Adviser and Member, Organising Committee, The Ocean Project, (IOC/UNESCO)

Member of Advisory Board, International Zoo Yearbook

Government Zoo Inspector, Secretary of States List

Member of Council, Association of Leading Visitor Attractions, UK

Trustee, National Museums & Galleries on Merseyside; Member Establishment Committee; and Member, Education Committee; Member, Human Remains Working Group

Board Member, *Culture Northwest*, and Chair Cheshire Gardens Strategy.

Visiting Professor, Department of Veterinary Clinical Science and Animal Husbandry, University of Liverpool

Rachael Ashton, Public Relations Manager

Member, BIAZA Communications and Development Committee

Richard Barnett, Management Accountant

Treasurer, Association of British Wild Animal Keepers (ABWAK)

Sarah Bird, Biodiversity Officer

Trustee - rECOrd - the Biodiversity Information System for Cheshire, Halton, Warrington and Wirral

Steering group member - Cheshire regional Biodiversity Partnership (CrBP)

Co-ordinator - Cheshire Black Poplar Biodiversity Action Plan

Member - Cheshire Gardens and Allotments Biodiversity Action Plan

Committee member - Cheshire Mammal Group

Member - Wrexham Biodiversity Group

Member - Sustainable Cheshire Forum

Member - various North East Wales Biodiversity groups

Member - Botanic Gardens Education Network (BGEN)

Marc Boardman, Facilities Manager

Member of British Institute of Facility Managers

Kate Brankin, Education Secretary

Regional Co-ordinator for Advanced National Certificate in the Management of Zoo Animals

David Brunger, Records Officer

Member, Zoological Registrars Association (ZRA)

Kevin Buley, Curator of Lower Vertebrates

Executive Board IUCN Turtle Survival Alliance

Executive Board Turtle Conservation Fund

Vice-chair IUCN Turtle Survival Alliance – Europe

Member, IUCN Tortoise & Freshwater Turtle Specialist Group

Member, European Union of Aquarium Curators

Co-chair EAZA Amphibian & Reptile Taxon Advisory Group

Co-chair UK Herpetological Taxon Advisory Group

Chair of IUCN/SSC Declining Amphibian Populations Task Force, Captive Breeding Specialist Group

Member, BIAZA Conservation and Animal Management Committee

Member, BIAZA Joint Management of Species Committee

Chair, EAZA Shellshock Campaign Planning Group

Dr Andrea Fidgett, Nutritionist

Co-Chair, European Association of Zoos & Aquaria (EAZA) Nutrition Group

Member, American Zoo & Aquarium Association (AZA) Nutrition Advisory Group

Member, European Animal Data Information Steering Committee

Reporting Member, Research Group, BIAZA

Visiting Lecturer, MSc Wild Animal Health, Royal Veterinary College, University of London

Visiting Lecturer, BSc Conservation Medicine, Liverpool University

Treasurer, Flora & Fauna International (North West Group)

Dr Sonya Hill, Research Assistant

President, Jane Goodall Institute "Roots and Shoots" Cambridge.

Scientific Adviser, Jane Goodall Institute (UK).

Scientific Adviser, Lisbon Zoo Environmental Enrichment Committee.

Visiting Lecturer, Dept. of Veterinary Medicine, University of Cambridge.

Lecturer, RCVS Certificate in Animal Welfare Science, Ethics and Law, University of Cambridge.

Tutor, Certificate in Animal Welfare, Cambridge E-Learning Institute.

Full Member, Primate Society of Great Britain.

Full Member, Association for the Study of Animal Behaviour.

Full Member, Animal Welfare and Human–Animal Interactions Research Group, Dept. of Veterinary Medicine, University of Cambridge.

Examiner, Examining Board, 3rd Year Students of Zoology at Liverpool University.

Paul Howse, Team Leader

Member of Council, Association of British Wild Animal Keepers (ABWAK)

Steering Group Member - International Congress of Zookeepers (ICZ)

Member, Wildlife Topic Group, Sustainable Cheshire Forum

Member, Cheshire Region Biodiversity Partnership

Member, Cheshire Mammal Group

Lynsey Jones, Assistant Development Manager

Member of Council, Association of British Wild Animal Keepers (ABWAK)

Mike Jordan, Curator of Higher Vertebrates

Chair (Europe & North Asia), World Conservation Union (IUCN) Species Survival Commission (SSC) Reintroduction Specialist Group

Technical adviser, IUCN SSC Conservation Breeding Specialist Group (CBSG) Rodent, Insectivore, Lagomorph & Scandent Conservation & Information network for South Asia (RILSCINSA).

IUCN / Reintroduction representative, International Advisory Group for the Northern Bald Ibis (IAGNBI).

Member, IUCN SSC Rodent Specialist Group.

Member, IUCN SSC Insectivore Specialist Group.

Member, IUCN SSC Lagomorph Specialist Group.

Member, Southern Bald Ibis Working Group (SBIWG) of BirdLife South Africa.

Co-chair, European Association of Zoos and Aquaria (EAZA) Small Mammal TAG

Chair, Zoo Federation British and Irish Rodent & Lagomorph TAG

Member, Zoo Federation Joint Management of Species Committee.

Member, English Nature Dormouse Captive Breeding Group

Member, Environment Agency/Joint Nature Conservation Committee Water Vole technical group

Liz Marrs, Education Presenter

Council member, Botanic Gardens Education Network

Isolde McGeorge, Herpetologist

Member, BIAZA Reptile and Amphibian TAG

Simon Marsh, Keeper

Trustee of the Predator Conservation Trust

Stephen McKeown, Head of Education Services

Member EAZA Education and Exhibit Design Committee

Senior Editor and Acting Secretary, International Zoo Educators Association (IZE) (until September)

President-Elect/Vice President International Zoo Educators Association (IZE) (from September)

Mark Pilgrim, Chief Curator

Member, World Conservation Union (IUCN); Member, UK Committee; and Conservation Council, IUCN Conservation Breeding Specialist Group, Species Survival Commission

Member of Council, The British & Irish Association of Zoos and Aquariums

Member, British Association for the Advancement of Science

Member, BIAZA Conservation and Animal Management Committee (CAMC)

Vice chair, BIAZA Elephant Taxon Advisory Group

Member, BIAZA Joint Management of Species Committee

EAZA Accreditation Inspector

Jayne Quinn, Head of Personnel

Member, Chester Personnel Advisory Group (chaired by ACAS)

Penny Rudd, Registrar

Co-ordinator, Flora and Fauna International (North West Group)

Member, Reaseheath College's Board of Governors, and Animal Care Course Industrial Liaison Group, Chair of Remuneration Committee

Member, Cheshire Wildlife Trust's Council and Personnel Committee

Co-ordinator for Cheshire's Biodiversity Action Plan for Harvest Mice

Member, rECOrd - the Biodiversity Information System for Cheshire, Halton, Warrington and Wirral

Member, Cheshire Mammal Group

Stephanie Sanderson, Veterinary Manager

Council Member, British Veterinary Zoological Society

Member, Veterinary Advisory Group, BIAZA

Member, Board of Studies, BSc Conservation Medicine, Liverpool University

External Examiner, B Vet Med Final Part 3, Royal Veterinary College, University of London

Honorary Lecturer, Dept Vet Pathology, University of Liverpool

Trustee, Zebra Foundation, Veterinary Zoological Education

Member, International Committee of American Association of Zoo Veterinarians

Member, Zoos' Forum Welfare Group

Douglas Sherriff, Reptile Keeper

Co-chair, BIAZA Reptile and Amphibian TAG

Mark Sparrow, Curator Botany & Horticulture

Member, Board of Directors, PlantNet

Member, European Zoo Horticulture Group

Member, Liaison Committee, Association Zoological Horticulturists

Member, Cheshire Gardens Forum

Member, UK and Ireland Zoo Plant Group

Steve Unwin, Veterinary

Veterinary Adviser for Pan Africa Sanctuaries Alliance

Hon Lecturer, Dept Vet Pathology Liverpool University

Dr Stephanie Wehnelt, Research Officer

Co-chair, Research Group, British & Irish Association of Zoos and Aquariums (since Nov 04 BIAZA Research Group)

Member - Research Committee, European Association of Zoos and Aquaria (EAZA)

Examiner, Examining Board, 3rd Year Zoology Degree Course, Liverpool University

Visiting Lecturer, Department of Biological Sciences, University College Chester

Committee Member, Shape of Enrichment

Member, Cheshire Mammal Group

Gill Wells, Education Officer

Regional Co-ordinator for the North West, BIAZA Education Committee

Dr Roger Wilkinson, Head of Conservation & Science

Honorary Research Fellow, Keele University

Trustee, Polillo Island Biodiversity Conservation Foundation

Scientific Adviser, World Parrot Trust

Council Member, Mauritius Wildlife Foundation.

Trustee, Polillo Islands Biodiversity Conservation Foundation

Member, Pheasant Specialist Group (IUCN/Birdlife/WPA)

Vice-President & Member of Council, Avicultural Society

Secretary to Council, West African Ornithological Society

Consultant and Member British Ornithologist's Union Records Committee

Alan Woodward, Team Leader

Member, Flora and Fauna International

Member, Survival International

Member, Jane Goodall Institute

Trustee & Treasurer of Predator Conservation Trust

Alexandra Zimmermann, Conservation Co-ordinator

Member, Social Sciences Working Group, Society for Conservation Biology

Co-ordinator, Zoo Measures Group

Core Group Member, Catalysts for Conservation

Member, Institute of Biology

Scientific Fellow, Zoological Society of London

Research Associate, Wildlife Conservation Society

Member, Conservation International

Member, World Wide Fund for Nature UK

Member, Fauna and Flora International

Member, Durrell Wildlife Conservation Trust

Member, Wildlife Conservation Society of the Philippines

Member, Zoologische Gesellschaft für Arten und Populationsschutz

Scientific Publications & Technical Reports

Below, is a selection from more than 116 publications and reports involving numerous staff and external colleagues in 2004. Six were co-authored by the Zoo's Research Associates. More than 80 student dissertations (on Zoo animals – for first and higher level degrees) and outreach project reports were received for our Zoo library. In addition the Zoo funded various external conservation and research publications; and published in-house 8 editions of *International Zoo News* (Editor Nicholas Gould).

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Boardman, W., Dubuis, E., Fielder, J. and Unwin, S., 2004. *Pan African Sanctuaries Alliance (PASA) Primate Veterinary Healthcare Manual, 1st Edition*. PASA.

Boehm, C., Bowden, C.G.R., and Jordan, M.J.R., 2004. Statement for the conservation priorities for the Northern Bald Ibis. **In** C. Boehm (ed.), *International Advisory Group for Northern Bald Ibis, Newsletter* 3, Innsbruck, Austria. Pp. 5-6.

Britz, R., 2004. *Polypterus teugelsi*, a new species of of bichir from the Upper Cross River System in Cameroon (Actinopterygii: Cladistia: Polypteridae). *Ichthyological Explorations of Freshwaters* 15 (2): 179-186.

Brunger, D., 2004. Dwarf Forest Buffalo *(Syncerus caffer nanus)* ESB Regional Studbook, Edition 2 - Data current to 01/07/2004. North of England Zoological Society, UK.

Buley, K.R. and Lopez, J., 2004. La crisis de las tortugas asiaticas. Construyendo el arca. *Boletin De La Asociación Herpetologica Espanola* **15** (1): 54-56.

Burrell, K. and Wehnelt, S., 2004. The effect of whole carcass feeding and novel scent on jaguars (*Panthera onca*) at Chester Zoo. *Zoo Federation Research Newsletter* **5** (2): 3-4.

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Caws, C., Wehnelt, S. and Aureli, F., 2004. *The effect of a new vertical structure in mitigating aggressive behaviour in a large group of chimpanzees at Chester Zoo*. Poster at the Primate Society of Great Britain Spring Meeting: The Diversity of Zoo Primate Research, Paignton Zoo, 29-30 March 2004.

Chinsamy-Turan, A., Bruton, M., Mahapa, S., Reid, G.McG. and Stavelov, W., 2004. *Report: Creating a comprehensive institutional platform for science advancement and awareness*. Pretoria: National Research Foundation, South African Agency for Science and Technology Advancement.

Condon, E. and Wehnelt, S., 2004. The effect of an enriched environment on behavioural and hormonal indicators of welfare in orang-utans at Chester Zoo. **In** T. Gilbert (ed.), *Proceedings of the Fifth Annual Symposium on Zoo Research*, 7-8 July 2003, Marwell Zoological Park. London: British & Irish Association of Zoos and Aquariums. Pp. 53-58.

Condon, E., Wehnelt, S., Price, C. and Schaffner, C., 2004. An investigation into the effects of olfactory enrichment on Colombian black spider monkeys (*Ateles geoffroyi robustus*). *EAZA Research Committee Newsletter* 9 (September): 70-73.

Cork, S.C., McDonald, J., Sanderson, S., Pilgrim, M., McLeod, W., Langford, D., Laven, K. and Wilkinson, R., 2002. The epidemiology of *Syngamus* spp. and *Capillaria* spp. in selected species of pheasant and starling at Chester Zoo (1998-2001). *Research in Veterinary Science* **72** (1): 33.

Dagleish, M.P., Ashley, F., Marley, C.L., MacKenzie, C., McDonald, J.E., Siah, W.S. and Sanderson, S., 2004. Onagers, a potential pasture parasite management tool in zoological collections. *Vet Record* **154** (2): 118-119.

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Dowell, S.D. and Wilkinson, R., 2004. *Sichuan Forest Conservation Project - Visit Report*, May 2004. Liverpool John Moores University, UK.

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Hill, S.P. and Broom, D.M., 2004. Behavioural and physiological measures of disturbance in captive western lowland gorillas. *Primate Eye* **83** (June): 6-7.

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Giraffe (*Giraffa camelopardalis*).
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Scientific Publications & Technical Reports

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Wilson, S. and Wilkinson, R., 2004. *Chester Zoo's Philippines conservation programme*. Poster Paper at the Second EAZA Forum on *In Situ* Conservation Projects, Angers, France, 23-25 June 2004.

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Research Associates in 2004

- **Dr Filippo Aureli** (Liverpool John Moores University) - 'Regulation of social realtionships in Chimpanzees.'
- **Dr Colleen Schaffner** (University College Chester) - 'The relationship between hormonal states and social environment in Colombian Black-faced Spider Monkeys'
- **Ms Victoria Powell** (PhD Researcher, Manchester Metropolitan University) - ' The distribution, dispersal and conservation of the Rodrigues Fruit Bat.'

Estates Division

Steve O'Brien
Head of Estates

The programme of capital development continued throughout the year with many exciting new developments and exhibits.

A major work completed was the second phase of the Cedar House administration centre. This consists of a further 1,240 square metres of office accommodation, giving a total of 1,718 square metres consisting of:

- **Directorate and Personnel**
- **Finance and IT**
- **Education and Library**
- **Marketing and Development**
- **Visitor Services**
- **Animal and Plant Conservation**
- **Estates and Project Office**
- **Meeting and Conference Facilities**
- **Staff Association Reception, PostRoom, Plant and Server Rooms, Toilets and Kitchen Facilities**

Having all administration staff under one roof is proving a great success. The design includes an internal open quadrangle that offers an opportunity for landscaping and also provides an efficient access route to the different divisions.

An associated new staff car park with lighting incorporating an additional 117 parking bays (including disabled) was completed. This much needed facility will assist with the chronic shortage of staff car parking.

The drainage works for the visitor overflow car park was finally completed after months of frustration due to very bad ground conditions and poor weather.

The first animal project to be completed this year was the *Red River Hogs* located on the moated island on the west side of *Tropical Realm*. Other exciting and important animal developments include *Macaw Forest Aviary*, a Crane and Duck Rearing Facility and Phillipine Spotted Deer Paddock.

The top animal exhibit in the capital programme, was *Bears of the Cloud Forest*, successfully completed in time for the school summer holidays. The *Miniature Monkey* development has also transformed a previously quiet area of the Zoo.

Getting ready for 2005, projects in progress include a Rhino Conservation (*Tsavo Phase II*) facility, re-location of Camels on to the Onager paddock, an off-show Rare Parrot Breeding Facility, a Duck and Crane rearing facility and phase one of the redevelopment of the Animal Supplies Centre.

New exciting developments being prepared ready to commence in 2005 include *Elephants of the Asian Forest*, *Tsavo Café* and *Realm of the Red Ape* (Orang utans).

Marc Boardman
Facilities Manager

Facilities

This new department within Estates has been formed by the amalgamation of the Security Department, the inclusion of the full-time First Aiders and additional responsibilities relating to Facility Management.

The Facilities team will now undertake security, first aid, residential management, office procurement, telephony and management of utilities.

Highlights of the year include the successful relocation of all office based personnel into Cedar House in August, with fantastic support from the IT Department and Pickfords (the removal company).

Maintenance work has continued on the Residential Properties including the purchase and refurbishment of an additional bungalow. To ensure compliance with ever changing and new legislation, all properties were surveyed for in compliance with the Asbestos Regulations and a Water Safety Management exercise was also carried out.

On October 1st new Legislation for the Disabilities Discrimination Act 1995 became effective. All public facilities and services must be made accessible for all. Auditors carried out a full survey of the Zoo, the resulting Access Audit highlighted over 300 'reasonable' improvements, these works will commence in 2005. On a successful note, the Zoo was awarded a Positive Action Award by the Northwest Development Agency for its Disabled Facilities.

Security was stepped up last season with the addition of seasonal staff, working together with our full-time personnel, this proved highly successful in protecting the Zoo's assets. New legislation regarding Fire Extinguishers has come into effect and all 290 now have to be checked and recorded on a monthly basis. A Fire Risk Management Plan is presently being established and all buildings are checked for adequate fire extinguishers and fire fighting equipment. Full staff training is also being undertaken.

The First Aiders have attended over 270 incidents. This is 25% lower than the previous year. Staff awareness, suitable protective equipment and training provided by Health and Safety Manager

Cedar House – The major new administrative centre for Chester Zoo

Year	No.	Visitors Accidents	Staff	RIDDOR Reportable
2004	317	208	109	4
2003	475	359	116	9
2002	432	318	105	11

RIDDOR – Accidents reportable to the Health and Safety Executive under the Reports of Injuries, Disease and Dangerous Occurrences Regulations.

NB: These figures are now compiled from validated accidents and not simply First Aid responses.

Estates Division

John Winward, coupled with further zoo-wide Health and Safety improvements for our visitors have all contributed to the fall in accident rates.

Ray Morrison
Maintenance Manager

Maintenance

The Maintenance Department has continued to deliver on a full range of both reactive and planned activities. 300 formal and approximately 600 informal reactive tasks have been completed during the year. Site development and improvements have reduced the proportion of resources required for reactive works however there has been a growth in planned activities largely related to new exhibits which increasingly have complex engineering services.

A daily schedule of essential services monitoring is now formally in place for nine plant rooms and over 80 remote pieces of equipment.

In addition to core maintenance provisions, the department provides technical support to deliver efficient and legally compliant utilities and site services. Work carried out in this regard to assist the Society in obtaining the International Environmental Management Standard (ISO 14001) has been particularly satisfying. Further energy and water conservation initiatives will be implemented in 2005, in addition to effluent quality control measures.

Two major site surveys have been undertaken in 2004 to ensure our legal obligations are met in respect of asbestos and water management. The department continues to work closely with the Health and Safety Manager on the risk assessment elements of these topics and will lead on the operational requirements during 2005.

Arrangements for statutory engineering inspections are in place for 16 different aspects of the business. This includes an extensive range of site plant, general equipment and for the animal enclosures. The latter is a requirement under the Zoo Licensing Act.

On occasions, tradesmen assist the department in the delivery of capital projects. Of particular note this year was a contribution to the new *Spectacled Bear* and *Miniature Monkey* exhibits.

The department provided contract administration and supervision for numerous minor capital projects on behalf of the Animal Division. One of these saw the installation of animal weighbridges at the *Giraffe* and *Tsavo* exhibits. Similarly, on behalf of the Visitor Services Division, the Oakfield catering facilities were upgraded, including a kitchen refit and store refurbishment.

Training

The CITB Site Supervisor's Certificate and Site Management Certificate have been achieved by the maintenance manager and maintenance foreman respectively and the maintenance manager and the site plumber have achieved a City and Guilds Level 3 certificate in Legionella Risk Awareness. The site painter has achieved a City and Guilds Mobile Access Equipment certificate, while the site plant operator and our bricklayer have been awarded the Intermediate Construction Award in Plant and Machinery Operations. Congratulations to all!

Personnel

To improve service delivery and compliance with equipment maintenance regulations, two highly qualified and experienced tradesmen have joined the department. Steve Nall has a new post dedicated to electrical plant engineering while Keith Horner is dedicated to mechanical engineering and will develop the post beyond that previously occupied by motor mechanics.

Health & Safety

John Winward
Health, Safety and Environment Manager

In line with our five year action plan to ensure compliance with health and safety legislation work has continued on many topics. These include the introduction of an asbestos management plan for all buildings in the Zoo, and a water management regime under the COSHH regulations. We have also improved the public stand-off fencing in several areas and have a programme to make safety signage more aesthetically acceptable without compromising legal requirements. To ensure compliance with the display screen equipment (DSE) regulations, risk assessments have been carried out on all workstations.

The day-to-day conduct of some Health and Safety areas has now been passed to the expanded Facilities department – while the Safety Manager retains the strategic overview and responsibility. These typically include Disability Discrimination Act (DDA) issues, fire risk assessments and first aid provision and statistics. Accident figures for this year have been addressed within the Facilities Manager's report (see page 43).

Environmental Management

This year has seen the culmination of our efforts to attain the International Environmental Management Standard (ISO 14001) standard for environmental management. We have also worked throughout the year to complete the five phases of the British Standard BS8555. This included environmental awareness training for all staff. We had our final external audit at the end of October and were awarded the ISO14001 certification in November. We are very proud because we believe we are the first Zoo in the UK to achieve this recognition. This is in line with our commitment to support and promote conservation and sustainability.

Now we have achieved the standard we have to consolidate and show continual improvement. To this end, we are focusing on such topics as energy use and are commissioning an energy audit of the whole site. We are working with Cheshire County Council on shared travel initiatives for both employees and our visitors (to reduce CO_2 emissions). The Society is also looking at water usage and other recycling issues.

Visitor Services Division

Liz Child
Head of Visitor Services

2004 has been another successful year. We have welcomed in excess of 1,087,000 visitors, and have continued to improve the experience offered to every one of them, in order to meet their needs and surpass their expectations.

Just some of the significant improvements made to enhance the visitors' experience have been the exciting new animal exhibits; improved seating facilities across the Zoo; easier access for disabled guests; improved car parking and coach facilities; and immaculately maintained gardens and grounds. On top of this, we have also continued to invest in our staff training and development to ensure that high standards of customer care are delivered throughout the Zoo.

Retail

Led by Manager Alan Jones, the Retail Department has seen its sales continue to steadily grow throughout the year. Despite the appalling weather in the otherwise extremely busy month of August, sales in the shops still remained strong and instead of the usually popular balloons, rain ponchos became our number one best-seller!

In line with our environmentally friendly ethos, we continued to grow the number of Fair Trade products on offer in our shops. We also introduced a range of fully recycled stationery products, which had once been either car tyres or plastic cups. We aim to further extend this range in the future.

Catering

Once again the Catering Department, led by Manager Sue Clews, has had a successful year and sales in all catering outlets have continued to grow.

This year, a main priority for the Catering Department has been to finalise plans to replace the existing *Oasis Café* with a new, African-themed outlet called *Tsavo Café*. This new café will overlook the rhino paddocks and will offer a wide range of light snacks and meals including more healthy-eating and Fair Trade options. All food will be served on high quality, fully recyclable disposable

The Monorail from the Ark Restaurant lawn

products in line with our environmental objectives. This is a really exciting project and our aim is for it to be the benchmark for which standards across all catering outlets are set.

Events

The Zoo's Events Team, led by Jane Lawson, has continued to go from strength to strength. Yet again, the *Oakfield House* was a hugely popular wedding venue, with almost 40 couples tying the knot in the beautiful oak panelled boardroom. The excellent quality food and high service standards for each event certainly did not go unnoticed as letters of praise and thanks were received from many happy customers.

The 2004 daytime *Santa Magic* event was also extremely popular with our younger visitors and their parents. Throughout December over 8,000 people came to the Zoo to see Father Christmas and enjoy the lights and festivities. This event is certainly something we plan to repeat in coming years.

Amenities and Gardens

As Amenities and Gardens Manager, Chris Williams has continued to successfully lead his large team of staff to ensure that the Zoo's grounds and facilities were immaculately presented, and that all Zoo visitors were parked, welcomed and well looked after.

As well as delivering excellent service standards, the Amenities and Gardens Team also worked hard to ensure the gardens continued to delight the public. This year their efforts were recognised again when they received awards for *Best Tourist Attraction* from *Chester in Bloom* and *Northwest in Bloom*.

Despite the poor weather in August, the waterbus still proved extremely popular with the public this year, as did the monorail, which had another year of record ticket sales.

Customer Enquiries

The total of visitor correspondence received during the year was 2,018 (including letter, email and visitor feedback form). All of these were promptly responded to in the catergories:

- 1,268 General Enquiries
- 431 Compliments (0.04% of total number of visitors)
- 319 Complaints (0.03% of total number of visitors)

Analysis of complaints as %

- Facilities (toilets, catering, retail, monorail, disabled) 0.009%
- Animal-related complaints (visibility, welfare etc.) 0.011%
- Other (weather, staff, prices, queues, closing times) 0.010%

Going forward

2005 is set to be another busy year, with lots of exciting new projects afoot. In January we aim to commence the build of *Tsavo Café*, with a view to its doors opening to the public 12 months later. We also plan to increase the number of toilet facilities available to customers in the west side of the Zoo as this area is now extremely busy due to popular attractions such as the *Twilight Zone, Bears of the Cloud Forest* and *Miniature Monkeys*.

The previously named Wildlife Activity Centre (WAC) will also be adopting a new function in 2005. As from Easter we plan to turn this centre into a multi-functional space that will cater for visitor information, lost children, face-painting and more.

Finally, we aim to continue to grow the commercial aspects of the Zoo by expanding the Ark Shop and its storage facilities, reviewing and improving the catering offer and by increasing sales of weddings and other special events.

Marketing & Development Division

Rowena Allen
Head of Marketing
& Development

This has been an exciting and innovative year for our expanding Marketing and Development Team. The team has introduced a series of initiatives to develop new income streams and consolidate our visitor numbers (see pages 8,9 for statistics).

Market Research

We have continued with our programme of exit surveys, conducted by *Quaestor*. This research is invaluable to ensure that we have a close understanding of the views of our customers and can develop future initiatives tailored to their needs. The primary motivators for visiting the Zoo are a "fun day out" and to "see the animals". Overall, customer satisfaction is extremely high with 89% of visitors satisfied with the animal exhibits and 80% likely to visit the Zoo again (see page 46).

Website

The new website, launched in 2003, continues to be a success with over 559,000 visits in 2004. The majority of web visits come from UK, North America and the rest of Europe and Asia. Feedback on the site is that it is easy to navigate and highly informative with the key messages supporting our charitable status, conservation, animal welfare, excellent standards of customer service and promotion of the Zoo as a great day out.

Advertising

Throughout the key holiday periods, we used a combination of local and regional press, television advertising on Granada, HTV and Yorkshire and local radio to drive visitors to the Zoo. Despite a poor August, our visitor numbers for the year have remained strong and ahead of last year, and our October half-term visitor figures were some of the highest on record. We also experimented with some different targeting, with campaigns in Birmingham, Leeds and also a campaign to the 'Grey Market'. These initiatives will be further developed next year. Customer recall of our advertising remains extremely high.

Public Relations

The animal 'baby boom' across the year provided an array of interesting and favourable publicity: notably the birth of our two elephant calves, *Sundara* and *Tunga*, which generated interest nationwide. The official opening of our *Miniature Monkeys* back in May by Lord Robert Winston was a great PR success and created considerable interest and coverage. PR generated 1000 minutes of radio coverage and and more than 118 minutes of TV coverage throughout 2004. The arrival of Spectacled Bears in March was also very popular. Coverage across the year included features on our 70th birthday, the Elephant appeal, award achievements, tourism updates, birth announcements, corporate sponsorships and a focus on our conservation successes and our valued contribution to managed breeding and outreach programmes. Public Relations also played a crucial role in managing our reputation prior to and post a court case in November.

Tourism

The team have worked hard on the successful development of the tourism market to attract visitors to the Zoo. Coach and group bookings are up 20% on last year.

Members and Adoptions

Our membership base (24,010) and numbers of adopters (4,350) continues to grow. We are extremely grateful for this continued support as the income received is invaluable to our conservation breeding and species support programmes, both in the Zoo and in the field. Christmas saw the launch of an Adoptions Gift Pack in our shops and these ideas will be further developed for next year. In 2005, we will be introducing a new photo ID card for members and will continue to update the benefits received by both our Junior and Adult members to ensure we are meeting the needs of these key customers.

Asian Elephant Appeal

The Asian Elephant Appeal has gone from strength to strength, reaching the £1 million mark in June. Our sincere thanks go to all the volunteers who have worked tirelessly and not least all the members of the public who have donated their extra pound each time they come into the Zoo. The highlights of the year include our *Elephantasia Ball*, held at Eaton Hall in May, which raised over £60,000.

Corporate, Trust and other Fundraising

We are delighted to be working with Asda on a major product promotion, whereby 1p for every *Tiger Bread* product sold over the next 12 months will kindly be donated to Chester Zoo.

The corporate adoption scheme has also been redesigned during 2004 and will be relaunched at the beginning of 2005.

The Legacy Pledge Club has grown by 10% during 2004 and we have received £16,640 from bequests this year.

Honours

Lord Robert Winston was honoured with the Society's Gold Medal for his outstanding achievements in the field of biomedical science on 6th May. He also officially opened the *Miniature Monkeys* exhibit on the same day and gave a special lecture on his work as part of the Society's 70th anniversary celebrations.

Miniature Monkeys exhibit was officially opened by the eminent biologist and physician Professor Lord Robert Winston on 6th May 2004

Personnel Division

Jayne Quinn
Head of Personnel

In addition to assisting other departments with staff absence problems, the Personnel Department had to deal with the long term absence of three of its own four staff in the year, which has made running the department very difficult. We have, however, been ably assisted by an interim Personnel Manager (Agnes Murray), plus staff from other departments in covering our switchboard and reception responsibilities.

Despite these difficulties, the department again handled more than 35 vacancies in the year. Employment in the Zoo varies from permanent posts, to part time, flexible hours contracts or project based contracts, and much work goes into ensuring that staff are contracted appropriately or that the Society benefits from schemes such as the *Modern Apprenticeship*. Seasonal staff recruitment is always challenging (and sometimes very problematic) but we had a good start to the year with the assistance of *JobCentre Plus* – a service provided by the Employment Service whereby an open day is held at the main local jobcentre and publicised by them to attract interested candidates. The exercise was very successful and will be repeated in 2005.

Staff turnover for the year was 5.35% (see staff list, page 49)

The involvement of the Staff Association has played an important part in managing the employer/employee relationship over the year. The Joint Working Party review of staff terms and conditions of employment which commenced in 2003 was continued in 2004, and is nearing completion. Consultation with individual staff to implement changes will be an essential part of the process in 2005. Full pay negotiations took place for the first time in the Autumn and were successfully concluded. Individual staff have also raised sensitive issues which have been fully explored and resolved with the help of counselling, training or improved communication.

Work experience placements continued to be immensely popular, and 122 were provided during the year (see page 38). Personnel staff again attended careers fairs at local schools and assisted with interview skills for local students.

The benefits associated with relocation to Cedar House have already been realised with greatly improved staff communication, cover and job flexibility.

Finance & Administration Division

Alan Sykes
Financial Controller & Company Secretary

The audited accounts of the Society are presented on pages 55 to 63 of this Annual Report, with a formal commentary in the Council Report on pages 51 to 54.

The continuing success and expansion of the Zoo generally; together with its growing complexity and professionalism, essential in an increasingly competitive commercial environment, has meant another busy year for the Division. In addition to maintaining all the routine systems and controls needed to keep the funds flowing throughout the year, the department is analysing the figures more comprehensively to provide information and reports to assist other managers around the Zoo to generate more income, or to control their costs more efficiently.

The arrival of Emma Purdie, in the new position of Finance and Administration Divisional Secretary, is a welcome addition – both to improve communication and operational efficiency and to keep the Financial Controller in order!

The role of the Admissions team is continuing to be developed, with its increased emphasis on customer service. They welcomed over 1,087,000 visitors to the Zoo during the year. This is a real organisational achievement as more than half of our visitors arrive in just a fifth of the year (the school holidays) and are principally concentrated into a hectic quarter of each day (the two hours before lunch). These visitors signed about 130,000 Gift Aid declarations leading to the recovery from the Inland Revenue of a record £1,200,000 of Gift Aid on admissions. They also contributed over £350,000 to the 'Elective Pound' appeal, where all adult visitors are invited to donate £1 to the Asian Elephants Appeal; a 30% increase over 2003 on a 'like for like' basis.

Information Technology

Philip Morris
Information Technology Manager

This has been a very busy year. The big project was the move to Cedar House, our fabulous new building. Over one weekend the IT team installed computers, phones, faxes, printers, scanners and copiers for the 80 or so members of staff who moved into Cedar House.

Ian Timmus joined the team as an IT apprentice and will study for a BTEC National Diploma as part of his position.

2004 was the first year we chose to contract out some of our 'anti-viral' services. The proliferation of email and Internet viruses is now so severe that multiple layers of protection are required to maintain an adequate level of security. We further upgraded the network links across the zoo during the year. We have increased bandwidth massively in recent years. Six years ago the size of the link between major buildings was 64kb, barely adequate for small emails, whereas the present 1gb system will cater for all our present email requirements and is robust enough for intensive systems like video.

Our most impressive purchase was the Cine Mirror and projector systems in Cedar House. These hide the video projector in the roof space and throw the image out of the ceiling and onto the projection screen – and of course it's all done by mirrors!

Staff & Volunteers

There were 280 full-time established staff employed by the Zoo by the end of 31 December 2004, together with 212 seasonal staff, numerous contractors, some consultants and some volunteers. Among FTE staff 18 (6.4 per cent) had higher degrees; 30 (10.7%) has first degrees; 10 (3.6%) had higher educational diplomas; 54 (19.3%) had vocational qualifications and 8 (2.8%) had professional qualifications. Staff turnover was 14 (5.35%).

DIRECTOR'S DEPARTMENT

Director of Chester Zoo and Chief Executive
Professor Gordon McGregor Reid, BSc, PhD, CBiol, FIBiol, PLS
Director's Assistant
Frances Jaques, BA, Assoc CIPD
Directorate Assistant
Susan Lochrie

PERSONNEL DIVISION

Personnel Manager and Head of Division
Jayne Quinn, BA, MA, Dip RSA, MCIPD
Personnel Assistant
Carol Karim+
Telephonists
Carol Karim+
Eunice Manning
Sharon Whitby

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 AMTA, 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 Apprentice
Ian Timmis
Accounts Co-ordinators
Chris Capner
Emma Holding
Angela Powell
Senior Payroll Co-ordinator
Barbara Stewart*
Payroll Co-ordinator
Sylvia Morris*
Janet Carruthers
Cash Office Supervisor
Carmel Pearson
Front of House Manager
Julie Bird
Cash Office and Front of House Staff
Jenny Chadwick*
Katie Davis*
Sylvia Delves*
Darren Hodgeman*
Sarah Lappin*
Joyce Lucas*
John MacKenzie*
Nicola Magee*
Sarah Morris*
Lorraine Richardson
Christopher Shenton*
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
Gill Wells, Cert Ed
Sarah Spruce, B Ed Hons #
Education Administrator
Mark Powleson, BA
Interpretation Officer
Rachel Farr, BSc
Lead Presenter
Sarah Bazley BSc
Presenters
Chloe Aldridge, BA, BHSc
David Fitzsimmons, BSc*
Elizabeth Marrs, BA, PGCE
Carrie Moorcroft, BSc Hons
Gareth Redston, BSc
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
Caroline Davies
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 Co-ordinator
Alexandra Zimmerman, BSc, MSc, CBiol,MIBiol
Conservation Officer
Sarah Bird, BSc, PG Dip Ecology
Conservation Assistant
Scott Wilson, BSc, MSc
Research Officer
Dr Stephanie Wehnelt, PhD, Dipl Biol
Research Assistant
Sonya Hill BA Hons MPhil
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 Co-ordinator
Alan Woodward, Dip Anim Mgt+
Records Administrator
Dave Brunger, Dip Anim Mgt
Team Leaders
Mike Crumpler
Paul Howse. BA, Dip Anim Mgt
Mick Jones
Andrew Lenihan
Chas MacKenzie, Dip Anim Mgt
Isolde McGeorge
Wayne McLeod, Dip Anim Mgt
Tim Rowlands
Alan Woodward, Dip Anim Mgt+
Andrew Woolham, Dip Anim Mgt (Acting)
Keeping Staff
James Andrewes
Jonas Berthe, BTA
Shane Blake
Natalie Boyd, Dip Anim Mgt
Jason Boyer
Mark Cleave, Dip Anim Mgt
Karen Davies, Dip Anim Mgt
Joyce Dodd
Karen Entwistle, BSc
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
Ray Packwood, Dip Anim Mgt
Don Plant
Belinda Porter, Dip Anim Mgt
Mervyn Ranasinghe
Allan Reid, Dip Anim Mgt, SVQ3
Rosemarie Scott, BSc
Douglas Sherrif, Dip Anim Mgt
Katie Sturgess
Lara Thick, MSc, BSc
Craig Williams
Steve Williams, Dip Anim Mgt
Andrew Wolfenden
Helen Wright, Dip Anim Mgt
Chris Yarwood, Dip Anim Mgt
Animal Supplies Manager
Anthony Hutchinson
Animal Supplies Co-ordinator
Kevin Whitehead
Animal Supplies Staff
Paul Bebbington, Dip Anim Mgt
Stephen Burdsall
Graeme Edwards
Ken Newey
Pest Controller
Colin Humphries*
Curator Botany and Horticulture
Mark Sparrow, Kew Dip Hort, CGLI Hort
Team Leaders, Botanical Horticulture
Mark Hargreaves, NVQ2
Paul Shipsides, Kew Dip Hort
Botany and Horticulture Staff
David Burrows
Keith Done
Wesley Evans, RHS General Cert
John Fletcher
Richard Hewitt, CGLI, NCH, NVQ4
Mathew Jenkins
Stephen Kelleher
Paul Leach, NVQ2
Kevin McGinty
Ray Newey

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
Project Assistant Vacant
Maintenance Manager
Ray Morrison, AIMBM, CGLI, NVQ3
Foreman, Building and Civil
Paul Lindop, HNC
Foreman, Mechanical and Electrical
Brian Goss, CGLI
Maintenance
Ian Blythe
Paul Curtis, HNC, NVQ3
Keith Horner
Graham Humphreys
Denis Kinsella, CGLI
Anthony Lennon
Neville Lowndes
Bernard McCone, CGLI
Kevin McDonagh
Craig Murray (Apprentice)
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
Mervyn Garside
Michael Lowe
Michael Nesbitt
Christine Coleman

MARKETING AND DEVELOPMENT DIVISION

Head of Marketing
Amanda Lumley, ACIM
Rowena Allen (Interim) BA, Dip M, MCIM
Public Relations Officer
Rachael Ashton^
Debbie Ledsham (Interim) BA Hons MIPR
Media Co-ordinator
Kristine Beaumont
Tourism Co-ordinator
Ruth O'Hare, BA
Development Manager
Melanie Cowieson, BA
Assistant Development Manager
Lynsey Jones, BA, LCGI
Development Co-ordinator
Sarah McDonnell, BA, LCGI
Development Assistant
Lauren Evans
Development Associate
Sarah Molyneaux (Volunteer)
Membership and Adoptions Officer
Maureen Allsopp
Membership and Adoptions Assistant
Susan Watson
Adoptions and Secretarial Support
Pauline McKee

VISITOR SERVICES DIVISION

Visitor Services Manager and Head of Division
Liz Child, BA Hons
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^
Elaine Hughes, 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
Paul Clayton*^
Claire Davies^
Craig Horley *
Carol Jones
Marina Jones *
Laura Kerr^
Ian Lloyd *
Andrew Mapp^
Claire McEwan *
Pat McRobbie^
Val Owen
Sandra Port^
Robert Salisbury*^
Chas Shakespeare*
Ashley Stocking
Pauline Wainwright^
Diane Williams^
Catering Stores Co-ordinators
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
Eamon Canning
Janet Cullen*
Allan Davies *
Hazel Dean*
Ken Doughty *
John Farey
Tony Fisher
Stephen Gilyeat
John Green
Paul Harrison, NVQ2
Gwyn Hewitt, NVQ2
Richard Haddinott, NVQ3
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 Manger
Susanne Jones
Buyer and Retail Team Leader
Celia Long
Stores Supervisor
Ian Bodsworth
Retail Sales Assistants
Janet Alldis
Rachel Bestwick
Helena Broster
Elaine Bunn
Jason Dagnall*
Daniel Evans
Michelle Harrickie*
Alison Hughes*
Andrew Hughes
Fay Hughes *
Bill Robson
Natalie Stokes
Nick Taylor
Chris Walton *
Stuart Whitehouse

JOB RELATIVITIES COMMITTEE

Chris Capner
Andrew Lenihan
Celia Long
Chas MacKenzie
Darren Poech
Mark Pilgrim
Jayne Quinn
Chris Williams

COMMITTEE OF 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 Finance/Admin/Marketing
Christine Capner
Vice Chairman and Retail
Celia Long
Keepers
Andrew Lenihan
Geoff Harper
Maintenance
Jason Spencer
Amenities and Gardens
Eric Bickley
Catering
Brendan O'Brien
Education
Gareth Redston
Botanics
Richard Hewitt

LEAVERS

Andrew Bagnall
Kirsty Burrell
Chris Connor
Rebecca Duncan
Melanie Griffiths
Carl Laven
Julian Longcake
Amanda Lumley
Claire Morris
Katie Nelson
Ruth O'Hare
Taj Pinder
Tracey Pleavin
Will Riding
Shan Siah
Lorna Thornton

RETIRED 2004

Maureen Allsopp
Ray Head
Sara Ruks

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

President

Vice Presidents

Vice Chair, Celia Long (VS Retail)
Gareth Redston (Education)
Jason Spencer (Maintenance & Estates)
Geoff Harper (Animals & Plants)
Richard Hewitt (Botany & Hort)
Andrew Lenihan (Animals & Plant)
Eric Bickley (VS & A&G)
Brendan O'Brien (VS Catering)*
*Until September

Adopters

Members

Juniors

Fundraising Appeal Board

Chairman

Staff Association Chairman **Christine Capner**

Director's Personal Assistant **Frances Jacques**

Zoo Director & Chief Executive **Prof. Gordon McGregor Reid**

Joint Working Party of Staff and Management

Chris Williams (VS & A&G)
Peter Owens (Estates)
Sue Clews (VS Catering)
Mark Cleave (Animals & Plants)
Mark Powelson (Education)

NW Biological Records Unit

CRES (Health & Safety) Chairman **Suzanne Jones**

Animal & Plant Division

Chief Curator **Mark Pilgrim**

Mammals, Birds, Herpetofauna, Aquarium, Invertebrates, Animal Supplies, Conservation, Research, Animal Health, Nutrition & Veterinary Care, Animal Records, Animal Emergencies, Environmental Enrichment, Botany, Horticulture, Botanical Records, Project Liaison

Head of Conservation & Science **Dr Roger Wilkinson**

Curator of Higher Vertebrates **Mike Jordan**

Curator of Lower Vertebrates & Invertebrates **Kevin Buley**

Curator of Botany & Horticulture **Mark Sparrow**

Veterinary Manager **Stephanie Sanderson**

Nutrionist **Dr Andrea Fidgett**

Research Officer **Dr Stephanie Wehnelt**

Education Division

Head of Education Services **Stephen McKeown**

Education Services, Interpretation and Signs, Library and Archives Presentation, Teaching Volunteers, Presenters

Education Programmes Manager **Maggie Esson**

Estates Division

Head of Estates **Steve O'Brien**

Site Development, Environmental Management, Maintenance, New Works Planning, Site Communications, Security, Health and Safety, Site Services, Utilities, Capital Projects

Maintenance Manager **Ray Morrison**

Facilities Manager **Marc Boardman**

Health & Safety Manager **John Winward**

Capital Projects Team

Finance & Administration Division

Financial Controller & Company Secretary **Alan Sykes**

Accounts, Cash Office, Gates, Information Systems and Technology, Chester Zoo Enterprises, Insurance, Company Matters

Management Accountant **Richard Barnett**

Management Accountant **Jill Barnard-Blom**

IT Systems Manager **Philip Morris**

Marketing & Development Division

Head of Marketing & Development **Rowena Allen**

Advertising, Audio Visual, Promotions, Public Relations, Publications, Website, Tourism, Adoptions, Fundraising and Development, Membership

Public Relations Manager **Rachael Ashton**

Development Manager **Melanie Cowieson**

Personnel Division

Head of Personnel **Jayne Quinn**

Personnel Team, Employee Relations, Reception and Telephones, Work Experience, Programme, Recruitment, Training, Occupational Health

Personnel Officer (Feb 28th 05) **Clare Butler**

Visitor Services Division

Head of Visitor Services **Liz Child**

Customer Care, Amenities and Gardens, Catering, Events and Functions, Gatehouse, Retail, Stores, Visitor Transport (Monorail, Water Bus, Parking)

Catering Manager **Sue Clews**

Retail Sales Manager **Alan Jones**

Events Manager **Jane Lawson**

Amenities & Garden Manager **Chris Williams**

Total number of staff:	**492**
Permanent (FTE)	**280**
Seasonal	**212**

Management Structure

Presidency, Council & Council Committees

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), Neville Chamberlain, John Makinson, Robert Mee, Tony Williams.
Adviser Hamilton Howatt.
Staff Prof. Gordon McGregor Reid (Director), Jill Barnard-Blom, Richard Barnett, Mark Pilgrim, Jayne Quinn, Alan Sykes, Emma Purdie (Secretary), Rowena Allen.

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 associated scientific and educational topics.

Members Judith Skeritt (Chairman), Prof. Malcolm Bennett, John Brown, Dr Caroline Evans.
Advisers Brian Coles, Derek Lyon.
Staff Prof. Gordon McGregor Reid (Director), Stephen McKeown, Mark Pilgrim, Alan Woodward, Kate Brankin (Secretary), Rowena Allen.

Remuneration Committee

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

Members Tony Williams (Chairman), Prof. Peter Wheeler (Vice Chairman), Alan Watson (Chairman of Finance and Personnel Committee).

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, Dr Caroline Evans, Chris Mahon, John Makinson.
Advisers Dr Julian Chantrey, Brian Coles, Derek Lyon.
Staff Prof. Gordon McGregor Reid (Director), Kevin Buley, Andrea Fidgett, Anthony Hutchinson, Steve Unwin, Mike Jordan, Mark Pilgrim, Penny Rudd, Stephanie Sanderson, Mark Sparrow, Dr Stephanie Wehnelt, Dr Roger Wilkinson, John Winward, Alexandra Zimmerman, Karen King-Sharp (Secretary).

Pension Fund Trustees

Ensures the superannuation fund scheme is managed in accordance with its Trust Deed. Advises Council on Pension policy.

Trustees Michael Johnson (Chairman), Robert Mee, John Makinson, Richard Barnett, Jayne Quinn, Alan Sykes.
Mercer Human Resource Consulting Bill Bowman.

Land and Property Management Panel

Liaises between the Society, its Land and Property Agents and Tenants.

Staff Prof. Gordon McGregor Reid (Chairman), Marc Boardman, Steve O'Brien, Jayne Quinn, Alan Sykes, Anthony Hutchinson.
Denton Clark & Co Julian Mellis, Josh Tooth.

Appeal Board – Asian Elephant Fund

Members Neville Chamberlain (Chair), Robert Mee, Rob McLoughlin, Brian Child, Andrew Fletcher.

Staff Prof. Gordon McGregor Reid, Steve O'Brien, Mark Pilgrim, Melanie Cowieson and Development Team.

See also Page 52

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 Algernon 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 zoo.

Chairman Tony Williams
After a long career in financial services with a major Chester based bank, Tony now runs a successful business consultancy with his wife.

Vice Chairman Prof. Peter Wheeler BSc, PhD
Dean of Faculty of Biological & Earth Science at Liverpool John Moores University. Research in animal physiology.

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.

John Brown
Retired senior executive of a major international petrochemical company. Past Vice Chairman NEZS.

Neville Chamberlain MSc, CBE,
Chairman of Urenco Ltd, Chairman of the Manufacturing Institute, of the Cheshire & Warrington Economic Alliance and also of Envirolink 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 interest 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 Cheshire Local Strategic Partnership. Chairman of the Sustainable Cheshire Forum. Chairman of Fauna & Flora International in the North West.

John Makinson TD, MA
Retired solicitor from Chester and a long term supporter of the Society. Past Chairman NEZS.

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 lecturer in mathematics and physics at Marionopolis College, Montreal, and Head of Science Faculty. Major Veterinary Practise Executive in the Northwest.

David Wall
IT specialist with Formal Men's Wear Manufacturer. Elephant enthusiast. Organised successful fundraising through recycling.

Alan Watson FCIB
Agent of Manchester Branch of the Bank of England until retirement.

Council report for the year ended 31 December 2004

Trustees and Advisers for the year ended 31 December 2004

Trustees elected by the Members

Tony Williams	(Chairman from 28 May 2004)
John Makinson	(Chairman until 28 May 2004)
Prof. Peter Wheeler	(Vice Chairman from 30 July 2004)
John Brown	(Vice Chairman until 30 July 2004)
Prof. Malcolm Bennett	
Neville Chamberlain	(Elected 22 May 2004)
Brian Child	(Elected 22 May 2004)
Chris Clifford	(Until 12 August 2004)
Dr Caroline Evans	
Derek Lyon	(Until 22 May 2004)
Chris Mahon	
Robert Mee	(Elected 22 May 2004)
Dr Jeremy Playfer	
Dr Judith Skerritt	
David Wall	
Alan Watson	

Trustees co-opted by Council

Brian Child	(Until 22 May 2004 when elected to Council)
Robert Mee	(Until 22 May 2004 when elected to Council)

Director and Chief Executive
Professor Gordon McGregor Reid

Company Secretary
Alan Sykes

Principal and Registered Office
Cedar House, Zoological Gardens, Caughall Road, Upton by Chester, Chester, CH2 1LH

Auditors
PricewaterhouseCoopers LLP, 101 Barbirolli Square, Lower Mosley Street, Manchester, M2 3PW

Solicitors
Aaron & Partners, Grosvenor Court, Foregate Street, Chester, CH1 1HG
Mace & Jones, Drury House, Liverpool, L2 0RP
Walker Smith & Way, 26 Nicholas Street, Chester, CH1 2PQ

Bankers
Barclays Bank PLC, 7th Floor, 1 Marsden Street, Manchester, M2 1HW
Barclays Global Investors Ireland Ltd., New Century House, International Financial Centres Centre, Mayor Street, Dublin 1, Eire

Actuaries
Mercer Human Resource Consulting, Mercury Court, Tithebarn Street, Liverpool, L2 2QH

Legal and administrative information

The North of England Zoological Society ("the Society") is a registered charity (Number 306077) and a company limited by guarantee (Number 287902), regulated by its Memorandum and Articles of Association. The Society, also known as Chester Zoo, owns a trading subsidiary company, Chester Zoo Enterprises Limited, whose profits are transferred to the Society via Gift Aid.

The Council - Structure

The Council, as a body of charity trustees, and of directors for the purposes of Company Law, has general control and management of the administration of the Society. It determines the strategic direction and policies of the Society, with consultation and discussion with the Director of the Society as Chief Executive and his staff who implement policy. Up to 15 Council members, who must be Members of the Society, are elected by the Members at the Annual General Meeting to serve for a maximum of 6 years. Up to 5 more may also be co-opted by Council to hold office for a period not exceeding 15 months. Council holds at least six formal meetings each year, together with an Annual General Meeting. Council has delegated aspects of its powers to committees consisting of some of its members, relevant staff and other advisers. These Committees report to the full Council on matters that require the knowledge or approval of full Council. Council also receive copies of the full minutes of all committee meetings. The Chairman and Vice Chairman are elected by Council from the current Council membership, for a period not exceeding 3 years before re-election.

Council - Recruitment

Each year, Council prepares a list of names that it recommends for election to Council at the Annual General Meeting. The Chairman and selected members of Council interview nominees wishing to be considered for election. In considering whether a member of the Society is suitable for election to Council, the following characteristics are considered:

1) Does the proposed member support the aims of the Society?

2) They must be selected for what they can do for the Society, not because of their status or position in the community.

3) Do the skills that they possess enhance the overall skills of Council as a whole? Will their presence fill any current gaps in the expertise of Council?

4) Is there a balance in terms of the mix of ethnic, gender and age that reflects the membership?

5) Are they eligible by law to fulfil the role of a trustee of a charity?

Careful consideration in the recruitment of members of Council is vital in ensuring there is a balance of expertise and in particular a balance between the scientific skills on one hand and the commercial and business skills on the other. The first is to ensure the scientific and conservation activities of the Society fall within the scope of its mission; and the second is to ensure the future financial stability and prudent development of the Society.

Council - Training

The Society sees the relationship between the Executive and Council as fundamental to its success. It is vitally important therefore that Council members understand the overall day-to-day operational activities of the Society. To this end, new Council members are encouraged to complete an induction tour of the Zoo's various divisions, to discuss with the Heads of Division, the role and function of each division and the part it plays in the fulfilment of the Society's mission.

The relationship between the Executive and Council is further enhanced by the formation of *ad hoc* joint working parties to consider strategic issues. This is seen to not only develop the member's

Council report for the year ended 31 December 2004

awareness of the activities of the operational arm of the Society, but is also meant to develop the relationship between the member and the Executive management and staff. The combined meeting of Council members and the Executive team at the bimonthly Council meetings further enhances this relationship and awareness of operational issues.

Each Council Member is also issued with an induction pack on becoming a member of Council that covers their roles and responsibilities and the mission, vision, values, strategy and current plan for the Society. In addition, every Council member is encouraged to attend an external training course, run by a suitably qualified body, which covers all aspects of the role and responsibilities of trustees of charities.

Mission

The charity's mission is to save animal and plant species from extinction by operating and developing a zoological garden and by outreach activities. It supports and promotes conservation by breeding threatened species, by excellent animal welfare, high quality public service, recreation, education and science. It collaborates with like-minded organisations on an international basis.

Review of activities

A summary of the activities of the Society; its strategies, developments, achievements in the year and its plans for the future is given on pages 8 to 11.

Financial report and analysis

The financial statements have been produced in the format prescribed by the Charity Commission's Statement of Recommended Practice ('SORP 2000').

Visitor-related activities in furtherance of the charity's objectives produced a surplus of £8,885,000 (2003: £8,192,000). These principally comprise visitor admissions to the zoo, monorail and waterbus rides, and sales of guides. The net income of the trading subsidiary was £137,000 (2003: £254,000) from catering and retail activities. Donations, legacies and similar incoming resources, which includes members' subscriptions and animal adoptions increased to £2,189,000 (2003: £1,351,000). Restricted donations include £365,000 (2003: £239,000) for the Asian Elephant Survival Campaign 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.

After a struggle lasting more than 10 years, the Society has benefited substantially since January 2003 from the acceptance by the Customs & Excise that our admission fees may be treated as exempt from VAT. After a further 18 months, the Society has finally received £7,509,000 (2003: £Nil) from the Customs & Excise in respect of VAT overpaid since 1990, together with arrears of interest, net of the cost of its recovery. However, ongoing discussions with the Customs & Excise might cause this repayment to be adjusted, but this cannot yet be quantified. As a consequence of this partial exemption to VAT, a proportion of the 'Input VAT' (£567,000 (2003; £480,000)) that the Society could previously offset against the VAT paid is now irrecoverable.

Direct charitable expenditure, principally animal and plant conservation, increased to £5,881,000 (2003: £5,370,000). Grants payable in furtherance of the charity's objectives (principally for outreach activities) were a further £395,000 (2003: £232,000). Fund raising and publicity costs, which include the marketing and promotional advertising of the zoo, were £850,000 (2003: £864,000).

Net incoming resources for the year, including the VAT recovery, were £10,097,000 (2003: £2,299,000) which increased the accumulated funds carried forward to £23,197,000 (2003: £13,100,000).

The net cash inflow from net incoming resources was £7,700,000 (2003: £3,565,000). This was utilised to fund net capital expenditure of £3,032,000 (2003: £1,880,000) causing a net increase in cash over the year of £4,919,000 (2003: £1,791,000).

The Government has confirmed its intention to cease the special exemption in the Gift Aid rules that enable the Society to recover Gift Aid on visitor admissions with effect from April 2006. Whilst the exemption will be retained for annual membership subscriptions, and where the visitor makes a donation at least 10% greater than the equivalent cost of admission, the impact on the Society will be substantial, with its income from Gift Aid expected to fall by at least £800,000 per year.

Restricted and designated funds

Restricted income funds derive from the Animal Adoption Scheme and from donations, grants and legacies received. Animal adoption income is all utilised to purchase animal foods, and the remaining restricted funds are put towards a variety of capital projects and outreach activities.

The designated funds relate principally to the Society's capital expenditure programme for the coming year, and to outreach programmes which the Society wishes to support over the next three to five years.

Grant-making policy

The Society supports a wide range of conservation, eudcation and research activities both in the zoo and externally, often in partnership with other organisations. This support may be

The members of Council, and the Council Committee structure at 31 December 2004, are indicated in the table below.

	Finance & Personnel	Remuneration	Education	Animal Welfare, Conservation & Science	Pension Fund (*)
Tony Williams (Chairman)	X	Chair			
Prof. Peter Wheeler (Vice Chairman)		X		Chair	
Prof. Malcolm Bennett			X	X	
John Brown			X		
Neville Chamberlain	X				
Brian Child					
Dr Caroline Evans			X	X	
Chris Mahon				X	
John Makinson	X			X	X
Robert Mee	X				X
Dr Jeremy Playfer					
Dr Judith Skerritt			Chair		
David Wall					
Alan Watson	Chair	X			

(*) Not a committee of Council. Council nominate 4 persons (2 others being nominated by members of the Scheme) to act as Trustees of The North of England Zoological Society Superannuation Fund Scheme, established to provide pension benefits to employees of the Society.

Council report for the year ended 31 December 2004

ongoing as with our major programmes such as that in partnership with Fauna and Flora International in the Philippines and our recently initiated programme focusing on Asian Elephant conservation in Assam or through one-off or annual grants including scholarships.

Criteria for our funding support for projects include conservation significance, feasibility, qualification of project personnel, capacity building, benefits to local communities, relevance to other conservation initiatives of the zoo and opportunities for technical support from zoo staff. Applications are requested to be made on our standard grant application forms and these are formally reviewed by at least two qualified people before a funding decision is made. Where further funding from applicants previously supported is requested then the outcome of earlier support including timely and full reports is especially relevant.

All applications and funding outcomes are held on our conservation database and projects are tracked to ensure that reports are received indicating conservation outcomes and including how the funds awarded were actually spent. Awards made are reported bimonthly in the reports to Council and published each year in the Annual Report.

For all our larger programmes and for some of our ongoing smaller projects then substantial Society staff input and regular site visits ensure that the programmes and projects are effectively monitored. Additionally, partnerships developed with other conservation organisations (including for example FFI Philippines) are such that those organisations have permanent staff on site who are able to determine that funds granted are properly accounted for. A number of programmes and partnerships have formal Memoranda of Agreement and for all the Society always indicates that a condition of funding is that reports with end of term accounts are received.

A small number of grants for our *in situ* support are a condition of our joining international ex *situ* conservation programmes or reflect other international zoo co-operation. A small emergency fund is also available to support immediate welfare needs, as for example when Prague Zoo was flooded, for which funding decisions are based on need and subject to consensus by senior zoo staff in liaison with council.

Reserves

The Society's reserves may be defined as that part of its unrestricted income funds that are freely available for its general purposes. It therefore excludes those funds that could only be realised by disposing of fixed assets held for charitable use. It is the general policy of the Society to apply towards its objectives as much cash as it reasonably can, without accumulating excessive reserves.

Council does not consider it to be necessary to retain income in respect of the Society's designated fund activities. Whilst these funds have been earmarked by Council for particular purposes or uses, they are not committed or restricted legally. The designation may be cancelled by Council if it later decides that the Society should not proceed with the use or project for which the funds were designated.

The Society must have regard to its substantial continuing commitments, in terms of staffing and of its ongoing charitable objectives, and to the difficulty of predicting its precise income in any year. It must have regard to the annual cyclical swings of cash flow and such variable factors as wet weather at peak visitor times, competing attractions in the region, social trends, support for or opposition to zoos in principle, the potential closure of the zoo to visitors due to contagious disease or other disasters, and varying levels of economic prosperity and employment.

Council considers that reserves at the end of any financial year not exceeding 100% of the total resources expended during the year could properly be regarded as both reasonable and justified. Equally it considers that it would not be prudent to allow such reserves to fall below zero. The Society's reserves at 31 December 2004, as defined above, were £10,911,000 (2003: £2,851,000) which represents 72.3% of total resources expended in the year (2003: 19.9%).

Investment policy

Investment powers are limited to those available under the Society's Memorandum of Association and charity legislation.

Council's objective is, in the normal course of events, to maintain the capital value of the Society's investment assets, whilst allowing the Society to withdraw funds as required. Accordingly, the investments are held in sterling cash funds. The performance of the assets is benchmarked against the 7 day and 3 month London Interbank Bid rates. As the assets are held in cash the Society has not set a policy on social, environmental and ethical considerations, or on corporate governance. Council monitors the investment performance and the appropriateness of this policy on an ongoing basis.

Risk management

Council actively reviews the major risks that the Society faces on a regular basis both generally and specifically, and believes that maintaining free reserves within the levels indicated above will provide sufficient resources in the event of most adverse conditions. Council also monitors the key financial and internal control systems and examines other operational and business risks to which the Society is exposed and has established systems to mitigate the significant risks identified.

The Society Health and Safety Policy is reviewed annually by the Scientific Committee and Zoo Council to ensure that the Health, Safety and Environmental Management System remains both current, effective and legally compliant.

Employees

The Society endeavours to ensure that employees are treated fairly and equality of opportunity is afforded to all staff. Applications for employment by disabled persons are always fully considered, bearing in mind the respective aptitudes and abilities of the applicant. In the event of members of staff becoming disabled, every effort is made to ensure that where a role is available for which appropriate training can be offered, their Society employment continues. It is the policy of the Society that the training, career development and promotion of a disabled person should, as far as possible, be identical to that of a person who does not suffer from a disability.

The Society continues to consult and discuss with its employees, both through the Staff Association and directly at *ad hoc*

Council report for the year ended 31 December 2004

meetings, a wide range of matters, including development of the Society's mission and its success. Information is also disseminated by means of a library, staff website, in-house newsletter, Zoo Life Magazine, International Zoo News and the Annual Report. These seek to achieve a common awareness on the part of all employees of the Zoo, of the financial, economic and other factors affecting the Society, as well as its mission.

Council's responsibilities in relation to the financial statements

Members of Council are required by UK company law to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the Society and the group as at the end of the financial year and of the net incoming resources of the group for that period.

In preparing these financial statements, Council is required to:

- select suitable accounting policies and apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the 'going concern' basis unless it is inappropriate to presume that the Society will continue to operate.

Council is responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the Society and the group and enable it to ensure that the financial statements comply with the Companies Act 1985 and applicable accounting standards. Council is also responsible for safeguarding the assets of the Society and the group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Council is responsible for the maintenance and integrity of the Chester Zoo website on which this report is held. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Council hereby confirms that these financial statements comply with current statutory requirements, the requirements of the Society's Memorandum and Articles of Association and the requirements of the Statement of Recommended Practice, "Accounting and Reporting by Charities", October 2000.

A resolution to reappoint PricewaterhouseCoopers LLP as auditors to the Society will be put to members at the Annual General Meeting.

Approved by Council and signed on its behalf:

Alan Sykes,
Company Secretary
1 April 2005

Independent auditors' report

Independent auditors report to the members of the North of England Zoological Society

We have audited the financial statements which comprise the consolidated statement of financial activities, the balance sheets, the consolidated cash flow statement, the accounting policies and the related notes.

Respective responsibilities of directors and auditors

The trustees are also directors of The North of England Zoological Society for the purpose of company law. Their responsibilities for preparing the annual report and the financial statements in accordance with applicable United Kingdom law and accounting standards are set out in the statement of Council's responsibilities.

Our responsibility is to audit the financial statements in accordance with relevant legal and regulatory requirements and United Kingdom Auditing Standards issued by the Auditing Practices Board. This report, including the opinion, has been prepared for and only for the company's members as a body in accordance with Section 235 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 report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

We report to you our opinion as to whether the financial statements give a true and fair view and are properly prepared in accordance with the Companies Act 1985. We also report to you if, in our opinion, the Council report is not consistent with the financial statements, if the charitable company has not kept proper accounting records, if we have not received all the information and explanations we require for our audit, or if information specified by law regarding directors' remuneration and transactions is not disclosed.

We read the other information contained in the annual report and consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the financial statements. The other information comprises only the Council Report.

Basis of audit opinion

We conducted our audit in accordance with auditing standards issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by the directors in the preparation of the financial statements, and of whether the accounting policies are appropriate to the company's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material mis-statement, whether caused by fraud or other irregularity or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion

In our opinion, the financial statements give a true and fair view of the state of the affairs of the charitable company and group at 31 December 2004 and of the incoming resources, including the income and expenditure, and cash flows of the group for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

PricewaterhouseCoopers LLP
Chartered Accountants and
Registered Auditors
101 Barbirolli Square
Lower Mosley Street
Manchester, M2 3PW
1 April 2005

Financial Activities

Consolidated statement of financial activities (incorporating an income and expenditure account) for the year ended 31 December 2004:

	Notes	2004 Unrestricted funds £'000	2004 Restricted funds £'000	2004 Total £'000	2003 Total £'000
Incoming resources					
Incoming resources from operating activities					
- Activities in the furtherance of the charity's objects	2	**10,611**	**-**	**10,611**	9,852
- Activities for generating funds – trading by subsidiary company	3	**5,248**	**-**	**5,248**	5,190
Total incoming resources from operating activities		**15,859**	**-**	**15,859**	15,042
Donations, legacies and similar incoming resources	4	**885**	**1,304**	**2,189**	1,351
Investment income and other incoming resources	5	**338**	**-**	**338**	207
Other incoming resources – VAT repaid		**7,509**	**-**	**7,509**	-
Total incoming resources		**24,591**	**1,304**	**25,895**	16,600
Resources expended					
Charitable expenditure					
- Costs of activities in furtherance of the charity's objects					
- Visitor related expenditure	2	**1,726**	**-**	**1,726**	1,660
- Direct charitable expenditure	6	**5,171**	**710**	**5,881**	5,370
		6,897	**710**	**7,607**	7,030
- Grants payable in furtherance of the charity's objects	7	**395**	**-**	**395**	232
- Support costs		**1,337**	**-**	**1,337**	1,018
- Cost of management and administration of the charity	8	**1,067**	**-**	**1,067**	770
Total Charitable expenditure		**9,696**	**710**	**10,406**	9,050
Costs of activities for generating funds					
- Trading by subsidiary company	3	**3,975**	**-**	**3,975**	3,907
- Fund raising and publicity		**850**	**-**	**850**	864
Total costs of activities for generating funds		**4,825**	**-**	**4,825**	4,771
Irrecoverable VAT		**567**	**-**	**567**	480
Total resources expended		**15,088**	**710**	**15,798**	14,301
Net income for the year/net movement of funds	9	**9,503**	**594**	**10,097**	2,299
Accumulated funds brought forward		**12,455**	**645**	**13,100**	10,801
Accumulated funds carried forward		**21,958**	**1,239**	**23,197**	13,100

All activities are continuing.

There is no material difference between historical cost profit and reported profit.

There are no recognised gains or losses for the year other than reported profit generated in the year.

Balance Sheet as at 31 December 2004

	Notes	Consolidated 2004 £'000	Consolidated 2003 £'000	Society 2004 £'000	Society 2003 £'000
Fixed assets					
Tangible assets	13	**11,047**	9,604	**11,003**	9,559
Investment in subsidiary company	3	-	-	-	-
		11,047	9,604	**11,003**	9,559
Current assets					
Stocks	14	**338**	365	**72**	85
Debtors	15	**4,505**	431	**4,614**	553
Cash at bank and in hand		**9,005**	4,100	**9,005**	4,100
		13,848	4,896	**13,691**	4,738
Creditors: amounts falling due within one year	16	**1,698**	1,400	**1,510**	1,210
Net current assets		**12,150**	3,496	**12,181**	3,528
Total assets less current liabilities		**23,197**	13,100	**23,184**	13,087
Net assets		**23,197**	13,100	**23,184**	13,087
Funds employed					
Income funds – restricted	17	**1,239**	645	**1,239**	645
Income funds – unrestricted					
Designated funds	17	**6,784**	4,338	**6,784**	4,338
Other charitable funds	17	**15,174**	8,117	**15,161**	8,104
		21,958	12,455	**21,945**	12,442
Total funds employed	17	**23,197**	13,100	**23,184**	13,087

The financial statements on pages 56 to 63 were approved by the Council on 1 April 2005 and signed on its behalf by:

Tony Williams
Chairman of Council
1 April 2005

Alan Watson
Chairman of Finance and Personnel Committee
1 April 2005

Cashflow Statement

Consolidated cash flow statement for the year ended 31 December 2004

	2004 £'000	2003 £'000
Net cash inflow from net incoming resources		
Net incoming resources	**10,097**	2,299
Net interest receivable	**(251)**	(106)
Profit on sale of fixed assets	**(8)**	(17)
Depreciation charges	**1,708**	1,402
Decrease/(increase) in stocks	**27**	(94)
Increase in debtors	**(4,074)**	(199)
Increase in creditors due within 1 year	**201**	280
	7,700	3,565
Returns on investment and servicing of finance		
Interest received	**252**	124
Interest paid	**(1)**	(18)
	251	106
Capital expenditure and financial investment		
Receipts from disposal of tangible fixed assets	**8**	17
Payments to acquire tangible fixed assets	**(3,040)**	(1,897)
	(3,032)	(1,880)
Increase in net cash in the year	**4,919**	1,791

Analysis of changes in net funds during the year

	Balance at 1 January 2004 £'000	Cash flow £'000	Balance at 31 December 2004 £'000
Cash			
Bank overdraft	(228)	14	**(214)**
Cash at bank and in hand	4,100	4,905	**9,005**
Total net cash	**3,872**	**4,919**	**8,791**

Accounting Policies

The following accounting policies have been applied in dealing with items that are considered material in relation to the financial statements of The North of England Zoological Society ("the Society") and are consistent with those adopted in the financial statements for the prior year.

Basis of preparation

The financial statements have been prepared in accordance with applicable accounting standards in the United Kingdom under the historical cost convention, the Charity Commission's Statement of Recommended Practice ('SORP 2000') and the Charities Act 1993.

The consolidated statement of financial activities, consolidated balance sheet and consolidated cash flow statement include the financial statements of the Society and its subsidiary undertaking made up to 31 December 2004 and comply with recommended practice for accounting by charities.

The results of the subsidiary are consolidated on a line by line basis. The charity has availed itself of paragraph 3(3) of Schedule 4 of the Companies Act 1985 and adapted the Companies Act formats to reflect the special nature of the charity's activities. No separate SOFA has been presented for the charity alone as permitted by Section 230 of the Companies Act 1985 and paragraph 304 of the SORP.

Funds employed

All funds employed must be expended in furtherance of the objects of the Society. Restricted income funds must be used in furtherance of some specific aspect of those objects.

Designated funds are those which have been set aside by Council, out of unrestricted funds, for identifiable future expenditure but the designation has an administrative purpose only and does not legally restrict Council's discretion to apply the funds.

Fixed assets

Fixed assets, including investments in subsidiary undertakings, are included in the balance sheets at their cost to the Society until fully depreciated, when they are written off.

Freehold properties

Depreciation is provided on freehold properties excluding land at 2% per annum.

Special buildings, enclosures, equipment and monorail system

Depreciation is provided at rates varying between 4% and 25% per annum, estimated to write off each asset over the term of its useful life. The rates and method of depreciation are consistent with those used in previous years.

Animals

No annual assessment is made of the value of the animal collection. It is valued consistently at a nominal sum and not depreciated. Purchases and sales during the year are treated as revenue transactions.

Leases

Where the Society enters into a lease which entails taking substantially all the risks and rewards of ownership of an asset, the lease is treated as a finance lease. The asset is recorded in the balance sheet as a fixed asset and is depreciated over its estimated useful life. Future instalments under such leases, net of finance charges, are included within creditors. Rentals payable are apportioned between the finance element, which is charged to the statement of financial activities as interest, and the capital element, which reduces the outstanding obligation for future instalments. All other leases are operating leases and the rental charges are taken to the statements of financial activities as incurred.

Stocks

Stocks are valued on a basis consistent with that used in previous years at the lower of cost and estimated net realisable value.

Incoming resources

Turnover of charitable trading activities represents cash and invoiced amounts of admission charges, goods sold and services provided (stated net of value added tax). Animal adoptions, donations and legacies are accounted for on a received basis.

Deferred income

Members' annual subscriptions are apportioned over the year of membership.

Pensions

The Society operates a voluntary pension scheme covering the majority of permanent employees providing benefits based on final pensionable pay. The assets of the scheme are held in trustee-administered funds completely independent of the Society's finances. Contributions to the scheme are charged to the statement of financial activities so as to spread the cost of pensions over the employees' working lives with the Society.

In November 2000, the Accounting Standards Board issued Financial Reporting Standard Number 17 (Retirement Benefits). The standard will not be mandatory for the group and Society until the year ended 31 December 2005. The standard has an extended transitional period during which certain disclosure will be required in the notes to the financial statements; these disclosures are shown in note 12.

Property sales

Profit on sales of land and buildings consists of the difference between the net amount realised and the sum of cost and subsequent additions, and is reported within investment income and other incoming resources in the statement of financial activities in any year where a sale has occurred.

Apportionment of costs

The Society's systems analyse expenses departmentally. The SORP calls for expenses to be analysed on the operational basis and accordingly, they have been apportioned on this basis. Different appropriate criteria such as staff numbers, cash revenues and volume of purchases have been used.

Research and development

Research and development expenditure is written off as incurred.

Grants

Liabilities relating to grants are recognised once the Society is irrevocably committed to the provision of the grant.

Notes to the financial statements year-ended 31 December 2004

1 Status

The Society is a company limited by guarantee and has no share capital. Members have guaranteed the liabilities of the Society to the extent of £1 each in the event of the charity being wound up. The Society is registered with the Charity Commission Number 306077. As a registered charity, the Society is entitled to claim exemption from the charge to tax on income and chargeable gains in Section 505 Income and Corporation Tax Act 1988 and Section 256 Taxation of Chargeable Gains Act 1992. Any commercial activity which falls outside the statutory exemption for the purposes of corporation tax is conducted through Chester Zoo Enterprises Limited, which transfers all its taxable profits annually to the Society via Gift Aid. In the opinion of Council, no corporation tax liability arose in respect of the Society's activities in the year.

2 Activities in the furtherance of the charity's objects – Visitor-related

All unrestricted	2004 Total £'000	2003 Total £'000
Turnover		
Visitor admissions	**9,817**	9,136
Monorail and boats	**414**	392
Guides and other	**380**	324
	10,611	9,852
Gross expenditure		
Visitor admissions	**1,566**	1,487
Monorail and boats	**60**	108
Guides and other	**100**	65
	1,726	1,660
Surplus on visitor-related activities in the furtherance of the charity's objects.	**8,885**	8,192

3 Activities for generating funds – Trading by subsidiary company

The Society has a wholly owned trading subsidiary, Chester Zoo Enterprises Limited, incorporated in the UK, (representing an investment of £100 in ordinary £1 shares) which operates the catering and retail activities of the Zoo from outlets rented from the Society. It transfers its taxable profit via Gift Aid to The North of England Zoological Society. A summary of its trading results is shown below. Audited financial statements for the year ended 31 December 2004 will be filed with the Registrar of Companies. Its aggregate assets, liabilities and funds at the year end were £318,641, £305,140 and £13,501 respectively.

	Catering £'000	Shops £'000	2004 Total £'000	2003 Total £'000
Incoming resources				
Turnover	**3,057**	**2,191**	**5,248**	5,190
Resources expended				
Direct costs	**2,425**	**1,480**	**3,905**	3,846
Indirect costs – external overheads	**70**	-	**70**	61
Total external costs	**2,495**	**1,480**	**3,975**	3,907
	562	**711**	**1,273**	1,283
Management charges paid to parent company			**725**	618
Property rents paid to parent company			**411**	411
Amount transferred to the Society via Gift Aid			**135**	246
			1,271	1,275
Amount retained in subsidiary			**2**	8

4 Donations, legacies and similar incoming resources

	Unrestricted funds £'000	Restricted funds £'000	2004 total £'000	2003 total £'000
Members' subscriptions	**855**	-	**855**	704
Animal adoptions	-	**268**	**268**	210
Donations and legacies	**30**	**649**	**679**	437
Grants	-	**387**	**387**	-
	885	**1,304**	**2,189**	1,351

5 Investment income and other incoming resources

All unrestricted	2004 total £'000	2003 total £'000
Investment income		
Interest and investment income received	**252**	124
Property rents received, external	**78**	66
	330	190
Other incoming resources – Profit on sale of fixed assets	**8**	17
	388	207

6 Direct charitable expenditure

	Unrestricted funds £'000	Restricted funds £'000	2004 total £'000	2003 total £'000
Animal and plant conservation	**3,629**	**387**	**4,016**	3,754
Education	**607**	-	**607**	538
Property maintenance	**935**	-	**935**	1,078
Feasibility study	-	**323**	**323**	-
	5,171	**710**	**5,881**	5,370

7 Grants payable in furtherance of the charity's objects

The Society makes institutional grants payable in furtherance of the charity's objects, for conservation outreach, research and animal welfare projects. Details are given in the Society's Annual Report, copies of which may be obtained from the Company Secretary.

8 Cost of management and administration of the charity

All unrestricted	2004 total £'000	2003 total £'000
Interest payable	**1**	18
Bank commissions	**63**	61
Expenses associated with property rents received	**107**	77
Apportionment of management time and overhead cost	**871**	614
Court Fine	**25**	-
	1,067	770

9 Net movement in funds

All unrestricted	2004 total £'000	2003 total £'000
This is after charging/(crediting):		
Auditors' remuneration for:		
Audit (Society £9,000; 2003: £10,000)	**14**	14
Depreciation	**1,708**	1,402
Hire of equipment	**108**	75
Interest payable – bank	**1**	18
Interest receivable	**(252)**	(124)
Operating lease rentals – plant and equipment	**-**	11

As permitted by Section 230 of the Companies Act 1985, the Society's results are included in the consolidated statement of financial activities and no separate statement of financial activities is presented. The Society's surplus for the financial year, determined in accordance with the Companies Act, was £10,096,000 (2003: £2,290,000).

10 Trustees' remuneration

The members of Council, being charity trustees, received no remuneration (2003: £Nil). One trustee (2003: One) was reimbursed during the year for travelling expenses necessarily incurred. The aggregate amount of these expenses was £657 (2003: £646).

Insurance costing £2,415 (2003: £1,838) has been taken out by the Society to protect the Society, its trustees and other officers against the consequences of any neglect or default on their part.

11 Employee costs

	2004 £'000	2003 £'000
Wages and salaries	**5,660**	5,122
Social security costs	**494**	443
Other pension costs	**509**	520
	6,663	6,085

The number of employees, including those employed for only part of the year, whose emoluments for the year (excluding pension contributions) fell within each band of £10,000 from £50,000 upwards is shown below. These employees also had benefits accruing to them under the Society's defined benefit pension scheme.

	2004 Number	2003 Number
From £70,001 to £80,000	**1**	1
From £50,001 to £60,000	**1**	-

The average number of persons (full time equivalents) employed by the Society during the financial year was as follows:

	2004 Permanent Number	2004 Fixed Term Number	2003 Permanent Number	2003 Fixed Term Number
Animals and plants	**90**	**1**	85	1
Education	**15**	**4**	14	5
Property maintenance	**29**	**1**	25	-
Visitor Services	**32**	**14**	29	17
Catering and shops	**55**	**41**	54	39
Fund raising and publicity	**10**	**1**	10	-
Administration	**29**	**15**	21	18
	260	**77**	238	80

12 Pensions

Composition of the plan

The Society operates a pension scheme in the UK, consisting of a defined benefit section and a defined contribution section. A full actuarial valuation was carried out on the defined benefit section as at 31 December 2002 and updated to 31 December 2004 by a qualified independent actuary. The major assumptions used by the actuary were (in nominal terms):

	31.12.04	31.12.03	31.12.02
Rate of increase in salaries	**4.26%**	4.14%	3.83%
Rate of increase of pensions in payment	**2.76%**	2.64%	2.33%
Rate of increase of pensions in deferment	**2.76%**	2.64%	2.33%
Discount rate	**5.29%**	5.36%	5.47%
Inflation assumption	**2.76%**	2.64%	2.33%

The assets in the plan and the expected rate of return were:

	31.12.04		31.12.03		31.12.02	
		£'000		£'000		£'000
Asset class						
Equities	**7.04%**	**4,100**	7.30%	3,796	7.02%	2,773
Bonds	**4.54%**	**1,200**	4.80%	1,125	4.52%	1,098
Cash and net current assets	**4.75%**	**838**	4.00%	281	3.00%	280
Total market value of assets		**6,138**		5,202		4,151
Actuarial value of liabilities		**(8,254)**		(7,053)		(5,680)
Total deficit in the plan		**(2,116)**		(1,851)		(1,529)
Related deferred tax liability		-		-		-
Net pension liability		**(2,116)**		(1,851)		(1,529)

If the above pension liability were recognised in the financial statements at 31 December 2004 the group's net assets and total funds employed would be as follows:

	31.12.04 £'000	31.12.03 £'000
Net assets and total funds employed excluding pension liability	**23,197**	13,100
Pension liability	**2,116**	1,851
Net assets and total funds employed including pension liability	**21,081**	11,249

At the year end £163,856 pension contributions were prepaid (2003: £6,875 prepaid).

12 Pensions continued

The following amounts would have been recognised in the performance statements in the year to 31 December 2003 under the requirements of FRS17:

Consolidated statement of financial activities	**2004**	2003
	£'000	£'000
Current service cost	**414**	356
Past service cost	**-**	-
Total operating charge	**414**	356

Analysis of net return on pension plan	**2004**	2003
	£'000	£'000
Expected return on pension plan assets	**357**	264
Interest on pension liabilities	**(387)**	(317)
Net return	**(30)**	(53)

Statement of total recognised gains and losses (STRGL)	**2004**	2003
	£'000	£'000
Actual return less expected return on assets	**139**	423
Experience gains and losses on liabilities	**(156)**	(274)
Changes in assumptions	**(311)**	(566)
Actual loss recognised in STRGL	**(328)**	(417)

Movement in deficit during the year	**2004**	2003
	£'000	£'000
Deficit in plan at 1 January 2004	**(1,851)**	(1,529)
Current service cost	**(414)**	(356)
Contributions (*)	**507**	504
Other finance costs	**(30)**	(53)
Actuarial loss	**(328)**	(417)
Deficit in plan at 31 December 2004	**(2,116)**	(1,851)

(*) The actuary recommended that the Society should make additional payments of £170,000 per year for a 13 year period starting in 2003 to remove the deficit, this figure to be reviewed on a regular basis. The Society accepted this recommendation and the contributions figures shown for 2004 and 2003 both include this additional payment of £170,000.

Contributions to the defined contribution section during 2004 totalled £250 (£125 from the Employer and £125 from the Employees).

History of experience gains and losses during the year

	2004	2003	2002
Difference between expected and actual return on plan assets			
Amount (£000's)	**139**	423	(1,341)
Percentage of plan assets	**2%**	8%	(32%)
Experience gains and losses on plan liabilities			
Amount (£000's)	**(156)**	(274)	263
Percentage of plan liabilities	**(2%)**	(4%)	5%
Total amount recognised in STRGL			
Amount (£000's)	**(328)**	(417)	(1,372)
Percentage of plan liabilities	**(4%)**	(6%)	(24%)

13 Tangible fixed assets

	Freehold property	**Buildings and enclosures**	**Machinery and equipment**	**Animals**	**Total**
	£'000	**£'000**	**£'000**	**£'000**	**£'000**
Cost					
At 1 January 2004	816	13,518	1,039	1	15,374
Additions	-	2,776	375	-	3,151
Movement between categories	2,286	(2,286)	-	-	-
Disposals and retirements	-	(18)	(73)	-	(91)
At 31 December 2004	**3,102**	**13,990**	**1,341**	**1**	**18,434**
Depreciation					
At 1 January 2004	190	5,028	552	-	5,770
Provided during year	10	1,470	228	-	1,708
Movement between categories	355	(355)	-	-	-
Disposals and retirements	-	(18)	(73)	-	(91)
At 31 December 2004	**555**	**6,125**	**707**	**-**	**7,387**
Net book value					
At 31 December 2004	**2,547**	**7,865**	**634**	**1**	**11,047**
At 31 December 2003	626	8,490	487	1	9,604

The net book value at 31 December 2004 represents fixed assets used for:

Charitable trading activities	-	**3,307**	**113**	-	**3,420**
Direct charitable purposes	**1,931**	**3,904**	**313**	**1**	**6,149**
Other purposes	**616**	**654**	**208**	-	**1,478**
	2,547	**7,865**	**634**	**1**	**11,047**

Council considers that the Society holds no fixed assets for investment purposes. Whilst some of those assets do yield an income, they were not acquired for that purpose but to facilitate the operation of the zoo, which is the primary charitable purpose of the Society.

Assets of the Monorail system, included within Machinery and Equipment, with a cost of £1,174,000 and a net book value of £ nil are held under a peppercorn rent finance lease.

The depreciation charged for the year to 31 December 2004 was allocated:

Charitable trading activities	-	**343**	**13**	-	**356**
Direct charitable purposes	-	**976**	**132**	-	**1,108**
Other purposes	**10**	**151**	**83**	-	**244**
	10	**1,470**	**228**	-	**1,708**

Council considers that it is not meaningful to consider the market value of most of the Society's land and buildings. Such assets are necessary to the operation of the zoo, which is the primary charitable purpose of the Society. Where an assessment can be made, Council considers that the market value exceeds the book value.

Animal purchases of £473 (2003: £6,228) and sales of £ Nil (2003: £ Nil) have been treated as revenue transactions.

All the tangible fixed assets included in the consolidated statement above relate entirely to the Society with the exception of the machinery and equipment where the equivalent figures for the Society alone are:

	Cost	**Depreciation**	**Net Book Value**
At 1 January 2004	741	299	442
Additions	355	-	355
Disposals	(73)	(73)	-
Provided during year	-	207	(207)
At 31 December 2004	**1,023**	**433**	**590**

Notes to the financial statements year-ended 31 December 2004

14 Stocks

	Group		Society	
	2004	2003	**2004**	2003
	£'000	£'000	**£'000**	£'000
Goods for resale	**250**	272	**4**	8
Consumables	**88**	93	**68**	77
	338	365	**72**	85

The replacement cost of the above stocks would not be significantly different from the values stated.

15 Debtors: amounts falling due within one year

	Group		Society	
	2004	2003	**2004**	2003
	£'000	£'000	**£'000**	£'000
Trade debtors	**54**	39	**50**	29
Amount owed by subsidiary undertaking	**-**	-	**117**	146
Other debtors	**3,944**	132	**3,944**	131
Prepayments	**184**	260	**180**	247
Accrued income	**323**	-	**323**	-
	4,505	431	**4,614**	553

16 Creditors: amounts falling due within one year

	Group		Society	
	2004	2003	**2004**	2003
	£'000	£'000	**£'000**	£'000
Bank overdraft (secured)	**214**	228	**176**	187
Trade creditors	**582**	454	**500**	366
Other taxes and social security costs	**144**	140	**119**	115
Other creditors and prepaid income	**31**	172	**19**	169
Accruals	**393**	123	**362**	90
Deferred income	**334**	283	**334**	283
	1,698	1,400	**1,510**	1,210

The bank overdraft is secured by a fixed charge on the freehold property.

17 Movement of funds

	Balance at 1 January 04 £'000	New Funds £'000	Funds utilised £'000	**Balance at 31 December 04 £'000**
Restricted income funds				
Animal adoptions scheme	-	268	268	**-**
Animal welfare projects	637	713	119	**1,231**
Education projects	8	-	-	**8**
Other projects	-	323	323	**-**
	645	1,304	710	**1,239**
Designated funds				
Animal welfare projects	2,632	1,631	386	**3,877**
Education projects	26	-	-	**26**
Other capital projects	1,680	2,881	1,680	**2,881**
	4,338	4,512	2,066	**6,784**
Other charitable funds	8,117	20,079	13,022	**15,174**
Total funds employed	13,100	25,895	15,798	**23,197**

Resources applied for fixed assets for charity use

	Unrestricted funds £'000	Restricted funds £'000	**2004 total £'000**	2003 total £'000
Net movement of funds for the year (see above)	**9,503**	**594**	**10,097**	2,299
Resources used for net acquisitions of fixed assets for charity use (i.e. the increase in the net book value of tangible fixed assets)	**1,443**	**-**	**1,443**	(495)
Net movement of funds available	**10,946**	**594**	**11,540**	1,804

18 Analysis of group net assets between funds

	Tangible Fixed assets £'000	Net current assets £'000	**Total £'000**
Restricted funds	**-**	**1,239**	**1,239**
Unrestricted funds	**11,047**	**10,911**	**21,598**
	11,047	**12,150**	**23,197**

The restricted income funds derive from the Animal Adoption Scheme and certain donations, grants and legacies received. Animal adoption income is all utilised to purchase animal foods, and the remaining restricted funds are put towards a variety of capital projects, equipment or conservation and education outreach activities.

The designated funds relate principally to the Society's capital expenditure programme for the coming year, and to outreach programmes which the Society wishes to support over the next three to five years.

19 Financial commitments

	Group		Society	
	2004	2003	**2004**	2003
	£'000	£'000	**£'000**	£'000
Capital expenditure, contracted for but not provided in the financial statements	**3,987**	1,971	**3,987**	1,971

20 Related party transactions

The Society has taken advantage of the exemptions available under Financial Reporting Standard Number 8, (Related party transactions), not to disclose details of any transactions with entities that are part of The North of England Zoological Society group.

The Society has entered into one related party transaction (2003: One). C. Mahon, a trustee of the Society, is a director of rECOrd Limited (whose mission is the collection and dissemination of all biodiversity information relating to the Cheshire region) which has leased office accommodation within the zoo grounds until 2004 at an annual rental of £3,000.

Founded in 1934, the
North of England Zoological Society
is a registered independent charity.

We need your help and support to
raise funds for the care and conservation
of our rare animals and endangered
species across the world.

CHESTER

Chester Zoo, Upton-by-Chester, Chester CH2 1LH.
Tel: **01244 380280** Fax: **01244 371273** or visit **www.chesterzoo.org**

Registered Charity No. 306077.
Licenced under the Zoo Licensing Act 1981.

Chester Zoo - The North of England Zoological Society - is a Charitable Trust, independent of the Government and Local Authorities. Its main source of income is from paying visitors and it welcomes sponsorship.

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