

ZOOLOGICAL GARDENS



CHESTER



**ZOO
REVIEW
2001**

*Annual Report of the
North of England Zoological Society*



The role of the Zoo is to support and promote conservation by breeding threatened animals, by excellent animal welfare, high quality public service, recreation, education and science.

CHAIRMAN'S FOREWORD



John Makinson, Chairman

I am greatly honoured to have been chosen last May to be your Chairman. Let me briefly introduce myself.

I was born in Lancashire in 1930, moved to Chester in 1956, and for almost 40 years practised as a solicitor in Chester. Our first home was in Upton, and it was natural to push a pram up the bridle path and have a (free!) look at the animals.

I became a Life Member many years ago, and was elected to Council in 1996. My wife Janet, and I have two sons in their late 20's, both wrapped up in IT, with the elder one very interested in birds and mammals.

Being Chairman is quite a job. Your Zoo is a complex organisation, providing permanent jobs for over 200 staff and almost twice that in the summer with the seasonals.

It is fascinating to be involved, and a real thrill to see the progress that has been made, and to oversee plans for the future.

Your Council will seek to continue this progress in 2002, and I hope that you will all continue to support the Zoo, and visit as often as you can to see the excellent achievements.

John Makinson, Chairman

CONTENTS

Chairman's Foreword	2	Health and Safety	18	2001 Livestock Review	
Mission, Affiliations and Awards	2	Personnel	18	Livestock Summary	37
Highlights of 2001	3	Environmental Protection	19	Threatened Species	38
Presidency and Council	4	Animal Environmental Enrichment	19	General Holdings	
Council Committees	4	Education	20	Mammals	41
Director's Review of 2001	5	Visitor Services	21	Birds	42
Summary of the Year	6	Estates	22	Reptiles	44
Management Structure	8	Finance and Administration	23	Amphibians	45
Development Board	8	Information Technology	23	Fishes	45
Fundraising Advisory Board	8	Junior Members	23	Invertebrates	46
Key Performance Indicators	9	Marketing and Public Relations	24		
		Membership and Adoptions	24		
		Development and Fundraising	25		
Divisional and Departmental Reports				Appendices	
Animal and Plant		2001 Accounts		Staff and Volunteers	47
Curators' Overview	10	Highlights of the 2001 Accounts	26	Staff on External Committees	48
Health Review	11	Council Report	27	Scientific Lectures and Conferences	49
Animal Supplies	11	Independent Auditors' Report	28	Conservation Co-ordination	49
Team Reports	12	Financial Activities	29	Conservation Outreach Projects	50
Herpetofauna	14	Balance Sheets	30	Work Experience Career Training	51
Aquarium	14	Cash Flow	31	On-site Degree Projects	52
Botany and Horticulture	15	Accounting Policies	32	Publications and Theses	54
Conservation Outreach Worldwide	16	Notes to the Financial Statements	33	Gold Medalists	56
Zoo Worldwide Activities	17				
Zoo Environment	18				

PARTNERS IN CONSERVATION, EDUCATION AND TOURISM

WORLD ASSOCIATION OF ZOO AND AQUARIUMS

IUCN
The World Conservation Union
International Union for the Conservation of Nature

EAZA
European Association of Zoos and Aquaria

WILDLIFE CONSERVATION SOCIETY

NORTH WEST TOURIST BOARD

North Wales Tourism

YORKSHIRE TOURIST BOARD

ALVA
ASSOCIATION OF LEADING VISITOR ATTRACTIONS

Joint Management of Species Programmes

European Union of Aquarium Curators

Federation of Zoological Gardens of Great Britain and Ireland

Association of International Zoo Educators

European Zoo Educators

International Species Information System

Conservation Breeding Specialist Group
IUCN Species Survival Commission

Chester Zoo's support for the Conservation Breeding Specialist Group (CBSG) of the World Conservation Union (IUCN) has helped to facilitate many important wildlife projects in 2001 including:

Conservation Assessment Management Plans (CAMP) for Indonesian primates, Arabian Gazelles, Cuban plants and Malagasay species.

Population and Habitat Viability Assessment Workshops (PVHA) for Chimpanzees and Gorillas in Cameroon, Wyoming Toads, Cuban Cranes, Mexican Manatees, Korean Asiatic Bears, Malagasay Giant Jumping Rats, Hungarian Meadow Vipers, Atlantic Coast Monk Seals in Spain, and Scarlet Macaws in Mexico and Guatemala.

Additional projects Chimpanzee Sanctuary workshops for the Pan African Sanctuary Alliance (PASA), planning for Seoul Zoo in Korea, and Simon Bolivar Zoo in Costa Rica and workshops for African Lions and Asian Turtles. CBSG worked on re-introduction plans for Grey Wolves in New Mexico and Arizona, for Orang utans and on a three year review for the USA Fish and Wildlife Service.

Annual Meeting, 2001 - Rottneest Island, Perth, Australia.

NATIONAL AND INTERNATIONAL AWARDS 2001



1. HM The Queen's Award for Enterprise 2001 - Sustainable Development Category
2. Daily Post Regional Business of the Year Award
3. Merseyside Tourism Awards—Tourism and the Environment
4. North West Tourist Board—Winner, Tourism and the Environment
5. Cheshire Awards for Tourism Skills (CATS) Liz Child, Most Outstanding Young Tourism Manager
6. Interpret Britain 2001, Commendation for Spirit of the Jaguar Interpretation
7. Chester in Bloom - Highly Commended - Tourist Attraction
8. 3rd International Zoo Marketing Conference - Best Guide Book
9. Chester in Bloom - Special Award for Outstanding Effort
10. North West Britain in Bloom. Part of Chester, Best Small City
11. Manchester Chamber of Commerce and Industry, Shamrock Awards 2001/2, Best Large Business
12. 'Let's Go Recommends' Commendation, Let's Go Publications, Cambridge, Mass. USA
13. Charity Publications Awards-Third Prize - House Magazine

X marks the spot

With a 'soft' opening of the £2 million *Spirit of Jaguar* exhibit at Easter, and the formal opening, delightfully done by Stefanie Powers in September, the three cats and the X Series car have enjoyed great success in their inaugural year! The exhibition planting is now growing rapidly. The interpretation is arguably our best ever - and includes smells for the first time. It was a delight to see the younger male cat - *Salvador* - asserting his territorial rights to the rainforest exterior. Our grateful thanks once again to *Jaguar Cars* for their sterling support and Dr Alan Rabinowitz of the *Wildlife Conservation Society* of New York for his inspirational address in the Lecture Theatre on the evening before the opening.



A great recovery

The gaping hole in revenue after six weeks of voluntary closure because of foot and mouth disease has been largely staunch. The Deputy Prime Minister, The Rt. Hon. John Prescott MP and Chester's MP, Christine Russell both came to wish us well. Year-end figures were only 1% behind visitor budget. We must thank loyal visitors for a record autumn that followed a wonderful August. But the real heroes and heroines were our staff, who not only volunteered pay cuts in April, but also endured the vital but tedious biosecurity measures. Mark Pilgrim and the Animal Division, with Stephanie Sanderson and her veterinary team, did a difficult job superbly. To suppliers and seven top retail groups, *thank you* for the food given to us. To all those who gave donations - from the £15,000 from the play *Dr Doolittle* to the anonymous cheques and children's gifts - our very grateful thanks.



Just first

We are the first wildlife attraction to gain the prestigious *Queen's Award for Enterprise* in the *Sustainable Development* category - a 'corporate knighthood'. The Lord Lieutenant of Cheshire, William Bromley-

Davenport made the formal presentation in the Board Room at the Zoo in November. The Zoo Director, Mick Jones, Team Leader Elephants and Hazel Dean, Amenities and Gardens, will meet HM The Queen at Buckingham Palace at the Awards Reception in 2002.

Wedding bliss

Enterprising Head of Visitor Services, Liz Child (named *Young Tourism Manager of the Year* in the Cheshire Awards for Tourism Skills [CATS]) and Events Manager, Jane Lawson secured a Civil Wedding licence for the Oakfield. Seven weddings have been celebrated in real style. A complete make-over of the Oakfield's ground floor rooms (including the kitchens) with appropriate fittings, and the elegant *Safari Suite* created in the Director's former rooms on the first floor, are rapidly making it a very marketable venue for events.



the elegant *Safari Suite* created in the Director's former rooms on the first floor, are rapidly making it a very marketable venue for events.

Good fellowship

The December award of our first *Honorary Scientific Fellowship* to Sally Walker, charismatic leader of *Zoo Outreach India (ZOO)* and long time Chester Zoo friend, once again emphasises that our activities and influence reach far beyond the perimeter fence! Outreach support has been substantially maintained, with activities in 48 countries in all five continents (see page 17).

Marketing zoos

Our team played a major role in organising and presenting the *World Association of Zoos and Aquarium's* Third International Marketing Conference in the Canary Islands in June, with 70 delegates from 23 countries represented. The Zoo Director went one better, elected to one of three seats on the WAZA Council. With special responsibility for Marketing and Public Relations, he is the only UK representative!

More light

In our third year of offering an evening *Father Christmas* experience, the creativity of Visitor Services Division's Amenities and Gardens Manager, Chris Williams, blossomed once more - with some extra help from Estates and the Botany and Horticulture team. A new 'enhanced capacity' Grotto had animated figures to entertain the queues. We had overhead railway trips through an illuminated Zoo, and thousands of lights. We pre-sold over 10,000 tickets and have established the *Magical Santa Trail* as *the* region's top children's Christmas attraction!



Developing nicely

Our 'vanguard' - the Development Department - have secured £250,000 of funding for the first part of work for the *Regional Biodiversity Centre*. They are also pressing on with the vital work for the *National Elephant Centre* expansion programme. The Director and Chairman of the Development Board, Neville Chamberlain went to Assam on a project to conserve Asian elephants. An imaginative anthology, with a foreword by Sir Arthur C. Clarke, and a series of presentations to the British-Indian business community at the Palace of Westminster will be of material help to save the elephant. The Zoo had a further visit to Chengdu Giant Panda Breeding Base. Departmental contacts helped gain us the impressive five-part *Animal Watch* TV series, already screened twice on Granada TV. The video is selling steadily in our shops. *Gift Aid*, at the entrance, planned by Lynsey Jones, is now fully functioning, and has contributed £149,000 of extra revenue this year, thanks to the team collecting names and signatures.

Building as usual

Now open are *Sealion Beach*, *The Grow Zone* (with first time greenhouse access) the *Arara Picnic Lodge*, and the Macaw Aviary in the *Forest Zone*. *Cedar House*, a modern new office complex now houses the Director's team and the Animal and Plant Division, Estates and Personnel Divisions. We have started to build the *Animal Health Centre* close by. A safe pedestrian entrance for Caughall Road visitors, a new roof for the catering stores, new kiosks, extra picnic seats and tables and a *Noah's Ark* refit have been finished.





President

His Grace,
The Duke of Westminster OBE, TD, DL

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

Vice Presidents

We are delighted to welcome

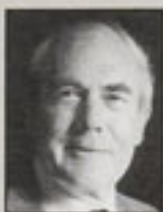
The Right Honourable, Lord Wade of Chorlton

A Life Peer and enthusiastic member of our National Contact Group. Former Cheshire County Councillor, and Past Chairman of the Cheshire Heritage Trust and Rural Economy Group.

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.

COUNCIL



Chairman

John Makinson
TD, MA

Retired solicitor from Chester and a long term supporter of the Society.



Vice Chairman

John Brown

Retired senior executive of a major international petrochemical company.



Brian Coles BVSc, FRCVS, DipECAMS
Consultant avian veterinary surgeon, lecturer, author and government wildlife inspector. Past Vice Chairman NEZS



Keith Maybury MA, DM, FRCS, FLS
Retired Consultant surgeon. Past Chairman NEZS



Karen Davies BDS, MPH
Dental practitioner. Local Upton resident.



Graham Pollard BSc, LLB, MA, CBiol, MIBiol
Biologist and Environmental lawyer, with conservation interests in Guyana.



Kathryn Edwards BSc
Manager with leading London merchant bank. Active Junior Members' Club supporter.



Alan Sharples BA, IPFA
Financial Controller with major Hospital Trust in Merseyside. Local Upton resident.



Professor Brian Gardiner BSc, PhD, DSc, PPLS
Professor of Zoology at King's College, University of London. Past President of the Linnean Society of London.



David Wall
IT specialist with international chemical company. Elephant enthusiast.



Brian Livingstone MB, ChB, FRCS, FLS
Consultant orthopaedic surgeon in Leigh and Wigan.



Alan Watson FCIB
Agent of Manchester Branch of the Bank of England until retirement. Elected 2001.



Derek Lyon BVSc, MRCVS
Consultant veterinary surgeon. Administrative Director, British Veterinary Zoological Society.



Professor Peter Wheeler BSc, PhD
Dean of Science, Education and Health. Director of Biological and Earth Sciences, Liverpool John Moores University.



Chris Mahon MSc
Director and Head of Conservation, The Cheshire Wildlife Trust.



Tony Williams
Retired after a long career in marketing financial services with a major Chester based bank. Former member of Council. Co-opted 2001.

COUNCIL COMMITTEES

Finance Committee

Ensures an appropriate financial policy exists. Reviews the executives' financial plans. Advises Council on major financial issues. Meets the Auditors at least once per year. Reviews the key internal control features of the Society and ensures that its financial integrity is sound.

Members

Alan Sharples (Chairman)
Alan Watson (Vice Chairman)
Brian Coles
John Makinson
David Wall
Tony Williams

Adviser

Hamilton Howatt

Staff

Prof Gordon McGregor Reid (Director)
Richard Barnett
Mark Pilgrim
Alan Sykes
Chris Vere

Membership, Education and Events Committee

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. Acts as a forum for discussion and advancement of education policy in both the formal, academic sector and informal, visitor-directed areas.

Members

Graham Pollard (Chairman)
John Brown
Karen Davies
Kathryn Edwards

Staff

Prof Gordon McGregor Reid (Director)
Lynsey Jones
Stephen McKeown
John Regan
Chris Vere
Alan Woodward
Maureen Allsopp (Secretary)

Pension Fund Trustees

Ensures the superannuation fund scheme is managed in accordance with its deed and Council instructions. Advises Council on Pension policy.

Trustees

Michael Johnson (Chairman)
Derek Lyon
Jayne Quinn (Staff)

Alan Du Cros
John Makinson
Alan Sykes (Staff)

Animal Welfare, Conservation and Science Committee

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

Members

Brian Livingstone (Chairman)
Brian Coles
Derek Lyon
Chris Mahon
Prof Peter Wheeler (Vice Chairman)

Advisers

Prof Malcolm Bennett (Leahurst)
Dr John Charles-Jones
Dr Spenser Madden
Noel Walker
(Gatehouse Veterinary Hospital)
Pat Wisniewski

Staff

Prof Gordon McGregor Reid (Director)
Michael Crumpler
Anthony Hutchinson
Isolde McGeorge
Mark Pilgrim
Penny Rudd
Stephanie Sanderson
Mark Sparrow
Dr Stephanie Wehnelt
Dr Roger Wilkinson
Alexandra Zimmerman
Karen King-Sharp (Secretary)

Remuneration Committee

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

Members

John Makinson (Chairman)
Alan Sharples

John Brown

Zoo Estates Panel

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

Staff

Prof Gordon McGregor Reid (Chairman)
Steve O'Brien
Jayne Quinn
Alan Sykes

Denton Clark & Co.

Michael Scott
Julian Mellis



A year that began with great promise was abruptly changed with the tragic death of Senior Keeper Richard Hughes, on the 17th of February, following an incident nine days earlier with female Asian Elephant *Kumara*. A Coroner's Inquest is scheduled for March 2002. Richard was an exceptionally talented member of staff who

described his post in the elephant section as his 'dream job'. At a Service of Remembrance in the Zoo, his father Brian unveiled a memorial plaque, and planted two trees. We extend our deep sympathy to Richard's family, partner, friends, colleagues at work and the staff at the Countess of Chester Hospital. It is a substantial tribute that there were well over 100 people at the service in the Zoo, which was led by the Reverend Glyn Conway, Vicar of Upton Parish Church. To honour Richard's memory an annual zoo scholarship will bear his name. Subsequent veterinary investigations of *Kumara* revealed that she had a deep-seated and untreatable bone infection and so she was humanely put down.

The nation-wide foot and mouth disease epidemic came as another major blow, with an infected area declared dangerously close to the Zoo. On 26th of February we closed as a precaution, with only key staff remaining on site. As the weeks progressed, concerns grew over the ability of the Society to continue to feed its animals and pay its staff. This tested my leadership and organisational abilities to the full, and those of my colleagues. A Crisis Management Team was formed from the Heads of Division, with Stephanie Sanderson advising on veterinary matters and Pat Cade in charge of public relations. Strict biosecurity measures were adopted and contingency plans were developed to cover the foreseeable future. Our magnificent staff rose to the challenge, coping admirably with the burden of biosecurity - involving disinfecting of vehicles and people and multiple changes of clothes. To conserve Zoo funds, staff also selflessly volunteered a wage cut and worked extra hours unpaid. We engaged in a programme of strict economies, and deferred capital spending to keep the Zoo afloat.

With the FMD epidemic receding, we were able to re-open just before Easter, with some limitations on visitor access. After six weeks of closure, the Zoo had lost £1.2 million, our capital projects were in disarray and public confidence in visiting zoos and other attractions had been severely dented. Local suppliers gave us free food for the animals and, quite spontaneously, individuals and organisations held fund-raising events and sent in cash. This was most heart-warming. With this *Dunkirk spirit*, we gradually overcame the initial losses and, on all counts, turned in an excellent performance by the year end.

The Force was with us
With Cheshire Constabulary, we hosted a special lunch for visiting Police from Lorrach in Germany and Senigallia in Italy. These walled towns are to be twinned with the City of Chester. The Zoo Director made and received presentation gifts.



Our major *Spirit of the Jaguar* building project was put back on track. Penny Rudd and the Curators brought in two Jaguars from Rome Zoo to be the first residents of *Spirit of the Jaguar*. Team Leader, Paul Howse with Senior Keeper Joyce Dodd and Keeper James Andrewes applied their expertise in animal husbandry. This was matched by excellent interpretation and botanical displays providing visitors with a wonderful experience, on a scale not achieved previously. The formal opening in September by actress Stefanie Powers and Jonathan Browning, Chief Executive of Jaguar Cars, was quite outstanding. We were also privileged to have rainforest expert Professor Yolanda Matamoros, from Costa Rica and Jaguar expert Dr Alan Rabinowitz from the *Wildlife Conservation Society* of New York as honoured guests.

Seventy-eight thousand of the visitors lost during the FMD enforced closure were regained by the year end. While not a complete 'clawback', this far exceeded our best projections for recovery. Record visitor numbers in September through to December brought the year-end result for paid-for-visits to 972,000 and the total visitation for 2001, including the under-threes, is a healthy 1,060,000. Contributing to the resilient performance are record retail sales (5.5% above 2000), very successful Christmas events (four times more uptake than last year and £80,000 in ticket sales), plus a lucrative new *Gift Aid* scheme (£163,000 income). Education Presenters in 2001 have reached 414,609 visitors (approximately 43%). We remain the leading wildlife attraction in the UK, outperforming our nearest rival by 65,000 visits (+7%).

Throughout the FMD crisis we were strongly supported and carefully advised by Council. I must thank them for this. Changes after the Annual General Meeting brought John Makinson to the Chair, with John Brown as Deputy. We much appreciate the work of Keith Maybury and Brian Coles for the Society as previous Chairman and Deputy, and their valuable continuing role as trustees. Alan Watson kindly took Dr David Cooke's place as he stood down after six years continuous service. Very sadly, David died in November, aged 84. There is a full tribute in *Zoo Life* (March 2002). It is with great pleasure that we can announce that The Rt. Hon. Lord Wade of Chorlton and Mrs Margaret Heber-Percy (the late Viscount Leverhulme's daughter) have become Vice Presidents of the Society, supporting our President, His Grace, The Duke of Westminster.

A remarkable total of thirteen international, regional and local awards were gained in 2001. William Bromley-Davenport, Lord Lieutenant of Cheshire presented the prestigious *Queen's Award for Enterprise*, in the category of Sustainable Development, on Friday 30th November. Who could have imagined that a year that started so badly would end on such a high point?

Professor Gordon McGregor Reid, Zoo Director

FUNCTIONS	OBJECTIVES	HIGHLIGHTS
<p>ANIMALS AND PLANTS</p> <ul style="list-style-type: none"> ■ To manage and care for the Society's animals and plants to the highest possible standards for the purposes of conservation, education, and benign scientific study. ■ To increase our relevant zoological and botanical knowledge. ■ To work closely with other conservation organisations on programmes of biodiversity support in the UK and overseas, particularly those aimed at saving animals and plants from extinction. 	<ul style="list-style-type: none"> ■ To improve the management, good husbandry, planning, development and welfare of the Zoo's collection. ■ Select the best species balance to support the conservational, educational and scientific objectives of the Society, and balance these with reasonable public expectations. ■ Play an active role in supporting national and international zoo and wildlife programmes. ■ To utilise the scientific experience and skills of staff and other collaborators. 	<ul style="list-style-type: none"> ■ Significant species births; Giraffe, Capybara, Buffy-headed Capuchin, Lion-tailed Macaque, Bactrian Camel, Arabian Gazelle, Vietnamese Pheasant, Tardigrade Hornbill, Red-tailed Amazon Parrot, Blue-winged Kookaburra, Pink Pigeon, Chilean Flamingos, Sand Lizards, Red-footed Tortoise, Banggai Cardinal fish and Freshwater Stingray. ■ Official Opening of the <i>Roman Garden</i> and of the <i>Grow Zone</i>. ■ Completion of <i>Spirit of the Jaguar</i>, <i>Sealion Beach</i> and the Hyacinthine Macaw aviary (<i>Forest Zone</i>). ■ Appointment of full-time Veterinary Resident. ■ Continual development of quality outreach programmes: Philippines, Nigeria, Black Rhinoceros, Jaguars. ■ Successful hosting of 3rd Zoo Federation Symposium on Zoo Research and publication of the Proceedings.
<p>EDUCATION</p> <ul style="list-style-type: none"> ■ To explain the collection to visitors by provision of appropriate signage, presenters and other means. ■ To provide teaching services and materials for schools, colleges, universities and other interest groups. ■ Identify opportunities for educational outreach and organise resources accordingly. 	<ul style="list-style-type: none"> ■ Raise awareness of the role of the Zoo in wildlife conservation. Increase knowledge of and empathy for animals and their environment. ■ Enhance the Zoo's information, interpretation, library and archive services. ■ Develop educational initiatives for conservation in the local community and selected habitat countries. 	<ul style="list-style-type: none"> ■ Interpretation Officer appointed (January 2002). ■ Successful presentations at African Zoo and Reserve Educators' Conference in Kenya. ■ Electronic interpretation database completed. ■ Completed new Elephant interpretation.
<p>ESTATES</p> <ul style="list-style-type: none"> ■ To maintain the Zoo fabric and infrastructure, upgrade facilities and manage capital works. ■ To offer engineering and technical support, ensuring efficiency in the development of the Zoo. ■ To ensure the Zoo is well designed, well maintained and safe for animals, staff and public. ■ Sustainable use of our resources, including the wider estate, within an environmental policy. ■ To manage Security and Health and Safety functions. 	<ul style="list-style-type: none"> ■ Develop services and facilities to the standards of a top attraction. ■ Efficient use of utilities. ■ Optimise best use of buildings and land. ■ Keep abreast of latest designs for animal and plant exhibits. ■ Upgrade infrastructure within a coherent environmental strategy. ■ New capital projects built to highest quality/value mix. ■ Proactive and reactive maintenance system. ■ Develop a <i>Health and Safety Management</i> system and Zoo-wide environmental policy. 	<ul style="list-style-type: none"> ■ Successful completion of major projects despite the foot and mouth epidemic including <i>Spirit of the Jaguar</i> and <i>Cedar House</i> administration building. ■ Development of <i>Sealion Beach</i>. ■ New Hyacinthine Macaw Aviary and <i>Arara Picnic Lodge</i>. ■ Decoration of <i>Oakfield</i> ground floor and upgrade of kitchen. ■ New <i>Grow Zone</i> in the existing greenhouses. ■ Re-furbishment of the Catering Stores building with a new light, insulated roof. ■ Completion of pedestrian access in staff car park. ■ Appointment of John Winward as new Safety and Environmental Manager. ■ Successful relocation of Estates office into new administration building. ■ Help in producing lighting display for Visitor Service's <i>Magical Santa Trail</i>. ■ Implementation of a first-stage environmental review.
<p>VISITOR SERVICES</p> <ul style="list-style-type: none"> ■ To provide year-round, high quality customer facilities with excellent customer care. ■ To achieve and exceed trading targets. ■ To ensure that all facilities are reviewed and improved to meet the standards of a top UK tourist attraction. ■ To ensure that all Zoo staff attain best practice levels through training in customer service. 	<ul style="list-style-type: none"> ■ To develop all services/facilities to top tourist attraction standards. ■ To actively measure and improve visitor satisfaction, encouraging repeat visits and positive feedback to other potential visitors. ■ To optimise trading, using customer feedback and competitor research to assess how this can be best achieved. ■ To provide high quality facilities for events and functions. ■ To encourage trialling of new ideas for events and functions. 	<ul style="list-style-type: none"> ■ Building of the new <i>Arara Picnic Lodge</i>, and the upgrading of visitor facilities in the <i>Forest Zone</i> area. ■ Building <i>rainbuster</i> canopies over station access ramps to protect queues. ■ Starting a clearer Zoo signage system, including pictogram fingerposts. ■ Introduction of a high quality <i>Induction Training Scheme</i> for all new staff, and refresher training for existing staff. ■ Refurbishment of the <i>Oakfield</i> with much improved marketing of special events, thus encouraging excellent sales of wedding functions, delegate room hire and Christmas meals. ■ Excellent Christmas <i>Magical Santa Trail</i> evenings were the most popular winter event ever held at the Zoo. ■ First user trials of a new-style staff uniforms.
<p>MARKETING AND DEVELOPMENT</p> <ul style="list-style-type: none"> ■ To achieve or exceed visitor attendance targets through cost effective marketing. ■ Enhance the stature and awareness of the Society through appropriate communications and publications. ■ To obtain major external funding for capital projects. ■ To sustain growth of membership and adoptions. 	<ul style="list-style-type: none"> ■ To be seen as the UK's leading wildlife conservational and educational facility amongst zoos. ■ To exceed visitor targets, through sampling, increasing awareness and promotion of loyalty. Identification and penetration of new market sectors. ■ Secure external funding support for major schemes and develop further support initiatives. ■ Support the Society's image and position through excellent communications at all levels. 	<ul style="list-style-type: none"> ■ Funding of the project development phase of the <i>Regional Biodiversity Park</i> project. ■ Substantial Development project support - including science fiction anthology with Sir Arthur C. Clarke foreword to support elephant expansion. ■ <i>Noah's Ark</i> promotion programme at shows and exhibitions across the region. ■ Setting up the <i>Gift Aid</i> scheme at the Zoo entrance. ■ Establishing the <i>Tourist Information Centre</i> at Cheshire Oaks. ■ Filming of 13 week series <i>Birthday Zoo</i> for the Discovery Channel's <i>Animal Planet</i>, screened from January 2002.
<p>FINANCE AND ADMINISTRATION</p> <ul style="list-style-type: none"> ■ Financial accounting, budget and management information. ■ Internal control systems. ■ Management of visitor admissions and cash processing. ■ Information technology management. ■ Company secretarial, administration, insurance and pensions. 	<ul style="list-style-type: none"> ■ Financial control. ■ Production of relevant and timely management information. ■ Reliable financial forecasting. ■ Planning and management of cash flows. ■ Provision of a sound financial perspective of all Zoo developments. ■ Provision of a reliable IT infrastructure. 	<ul style="list-style-type: none"> ■ Successful implementation of <i>Gift Aid</i> tax recovery on admissions income with Membership and Adoptions. ■ First indications of a favourable appeal result with European Commission on VAT. ■ Very successful <i>web cams</i> established with Granada TV's <i>Animal Watch</i> series. ■ Successful ISDN conference link to France for Director and Head of Education. ■ Laying of fibre optic <i>backbone</i> provides opportunity to upgrade IT services.
<p>PERSONNEL</p> <ul style="list-style-type: none"> ■ Personnel administration and recruitment. ■ Staff training and development. ■ Zoo visitor reception and communication services. 	<ul style="list-style-type: none"> ■ Operate efficient and legally compliant personnel services. ■ Identify and provide support for staff training and development. ■ Provide Work Experience opportunities to support community involvement. 	<ul style="list-style-type: none"> ■ Interview skills training delivered for managers and supervisors. ■ All seasonal recruitment undertaken by line managers. ■ Security of Employment policy drafted in a Joint Working Party with Staff Association. ■ New pay structure implemented using <i>Job Relativity</i> scheme bandings. ■ Office move to <i>Cedar House</i> successfully completed.

PERFORMANCE

- Two awards for horticulture in *Chester in Bloom*.
- Consolidation of the Physical Masterplan and the Animal Collection plan with new species brought into the collection including Jaguar, Great Argus Pheasant, Malayan Peacock Pheasant, Red-billed Curassow, Green-naped and White-naped Pheasant Pigeons, Victoria Crowned Pigeon, Egyptian Tortoise, Yellow-headed Day Gecko and Mangrove Monitor Lizards.
- Safe transportation and arrival of 40 animals from outside the UK and 50 animals from within the UK.
- Major project plans: Black Rhinoceros, Red Panda, *Dragons in Danger*, and Animal Health Centre.
- Orang utan and Chimpanzee security measures upgraded.
- Planning of *Zoo Nutrition Centre*.
- Implementation of Zoo-wide biosecurity measures against FMD.
- Continued development of staff through training and travel opportunities.

- *Interpret Britain 2001* commendation for *Spirit of the Jaguar* interpretation.
- Saved 25% of allocated revenue budget as our contribution to FMD related economies.
- Approaching half of the visitors listened to Presenters' talks - 411,296 (43% of the total).
- 78,516 educational visits (-9.9%), of which 15,447 were directly taught, generating income of £95,000.
- 10% increase in library usage (when adjusted for FMD closure).
- 17 members of zoo staff trained in Microsoft *PowerPoint* computer presentation techniques.

- Environmental awards from North West Tourist Board and Merseyside Tourism.
- Successful completion of nearly £3m worth of capital projects.
- Over 1,600 general maintenance requests completed.
- Effective maintenance of the Zoo despite foot and mouth restrictions.
- Upgrade of maintenance yard facilities.
- Conversion of monorail motors with new digital format improving performance and efficiency.
- New borehole water distribution pipe work from new West Zoo supply.
- Rationalisation of medium voltage electrical distribution from new 11 Kva high voltage supply.

- Liz Child wins *Cheshire Young Tourism Manager of the Year* award.
- Amenities and Gardens involvement in achieving of two awards in *Britain in Bloom 2001*.
- Highest ever sales figures in retail and events trading.
- Foot and Mouth biosecurity measures rigorously carried out by Amenities and Gardens staff all year since March, including the washing down of all vehicles entering the Zoo.

- *HM The Queen's Award for Enterprise* in the *Sustainable Development Category*.
- Substantial recovery in visitation in the second half year.
- Major revision of *Guide Book* launched in Spring, with extra pages.
- Successful 3rd International Zoo Marketing Conference in the Canary Islands.
- Membership surveys completed.
- Independent research once again confirms our excellent *value for money* in terms of *cost per hour*.
- Membership and Adoptions grow to record levels.
- On-line Membership and Adoptions working smoothly with approaching 1,000 successful transactions in one half-year.

- Efficient and timely budget review when Zoo closed for FMD.
- Responsive financial planning in the second half year, as the Zoo recovered.
- Implementation of new pay structure following *Job Relativities* review.
- IT provisions for *Cedar House*.

- New pay structure communicated and implemented.
- Zoo staff housing review completed and communicated to tenants.
- Recruitment of key posts including Safety and Environment Manager.
- Work Experience student placements successfully administered.
- Excellent communications with staff during FMD crisis.

DIRECTIONS FOR 2002

- Revise Physical Masterplan and the Animal Collection Plan and phased implementation of outcomes.
- Completion of major projects: Black Rhinoceros Phase I, Animal Health Centre, *Marmot Mania*, Red Panda, Buffy-headed Capuchins and *Dragons in Danger*.
- Open *Zoo Nutrition Centre* and appoint Zoo Nutritionist.
- Plan *Realm of the Red Ape* (Orang utan) and *Water Zone* Phase 1.
- Consolidation of major outreach programmes, secondment of NEZS staff member to WCS Jaguar programme.
- Development of research activities/opportunities.
- Horticultural projects including: *Andean Mountain Garden*, Plant/Animal interactive display, and appropriate planting near Animal Health Centre as Veterinary Garden.
- Computerised plant records and labelling system.
- Support of Black Poplar Conservation Action Plan.

- Complete *Interpretation Policy and Procedures*.
- Develop self-guided seasonally/event themed visitor trails, (with special relevance to Commonwealth links for 2002).
- Complete and install new Black Rhino interpretation suite.
- Complete *Education Development Plan*.
- Design definitive evaluation process for application to all interpretation.

- Finishing the *Forest Zone* area with Buffy-headed Capuchins, landscaping and through access from *Tropical Realm*.
- New *Tsavo Rhino Experience* for summer 2002.
- Rationalisation of mains water and well water.
- Strategic planning for five year capital development programme including consolidation of Physical Master Plan.
- Start of planning for new *Realm of the Red Ape* (Orang utan) development.
- To start work towards ISO 4001 environmental management accreditation.
- Developing strategic plan for Damage Farm area including off show facilities and greenhouses.
- Helping all divisions in preparing strategic plans for capital development.

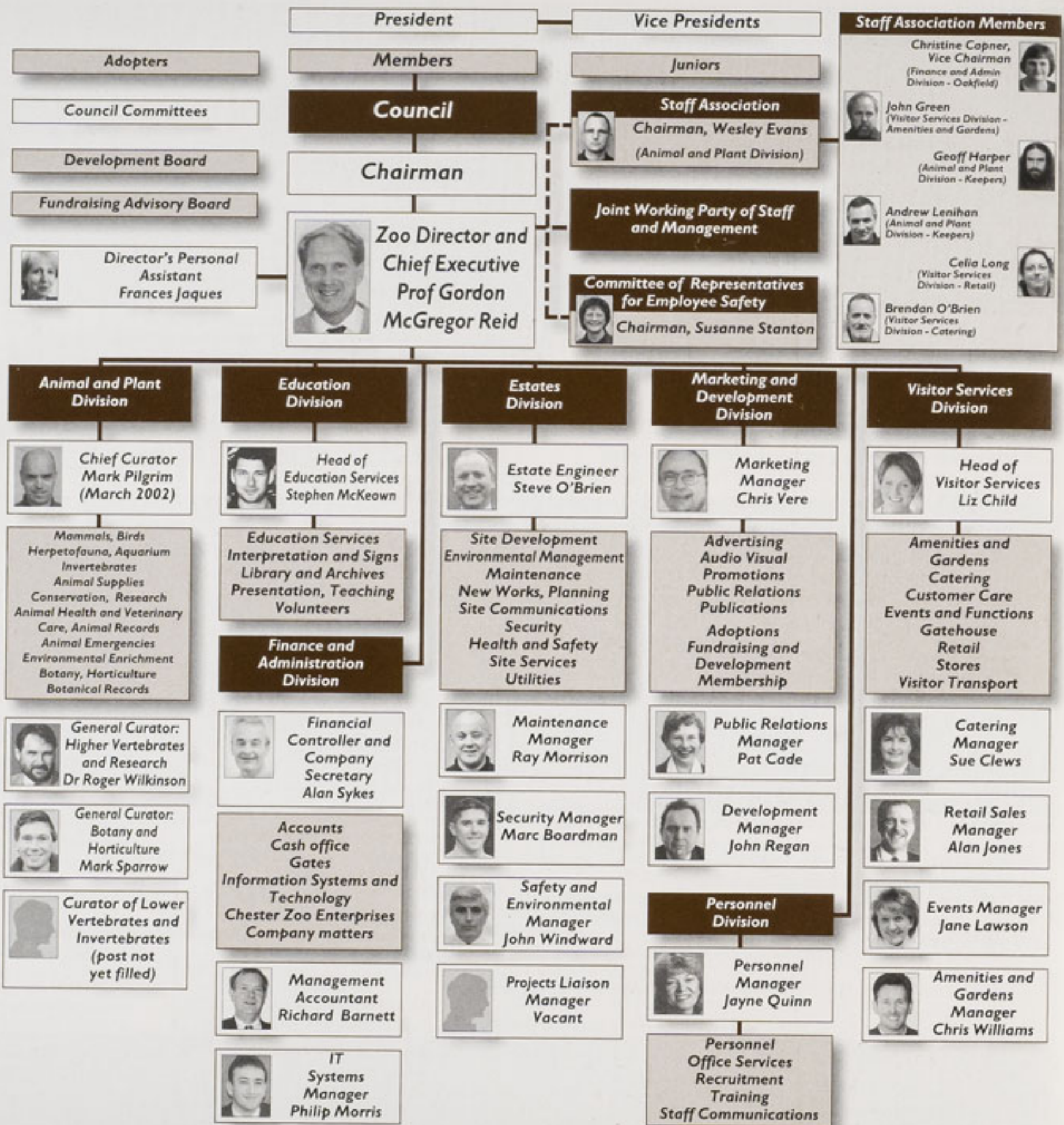
- Continued focus on improving customer facilities, including the rebuilding of the Canal toilet block.
- Redesigning of the new café complex and visitor service provisions at main entrance.
- Adding more all-weather parking facilities.
- Extending the *rainbuster routes*.
- Even better marketing of special events and functions, including specialist local *wedding fayres*.

- Publicity campaign to re-establish paid-for visitors at the one million plus level.
- Staffing and planning phase for *Regional Biodiversity Centre*.
- Completion of *Asian Elephants in Crisis* fundraising campaign.
- Develop and refine our *legacy planning* so as to reach the largest source of charitable income (estimated to be five times that of corporate donations).
- Recruiting new staff on retirement of present Marketing and PR Managers.

- Continued refinement and development of information for management.
- More responsive capital project planning and control.
- Further refinement of Zoo-wide pay structure.
- Enhanced site-wide IT services through the fibre optic backbone.

- Develop Staff Appraisal Scheme in a Joint Working Party (JWP) with Staff Association.
- Deliver training in staff appraisal and additional people management skills to all managers and supervisors.
- Review staff representation issues with all staff.
- Recruit senior managers to Heads of Division team.

MANAGEMENT STRUCTURE



DEVELOPMENT BOARD



Neville Chamberlain CBE

The Development Board is leading our *Asian Elephant in Crisis Campaign*, with the Society's President, The Duke of Westminster as Campaign President. Neville Chamberlain CBE chairs the project, and with the Zoo Director, Prof Gordon McGregor Reid, visited Assam in June/July to see how we could aid *in situ* conservation. We are very grateful indeed to Neville and his colleagues on the Board: John Billington CBE, Peter Foden CBE, Nick Pochin, Peter Rickitt, and Robert Mee.

National Contact Group Members

The Rt. Hon. Lord Wade of Chorlton; The Rt. Hon. John Prescott MP, Deputy Prime Minister; The Rt. Hon. Stephen Byers MP, Secretary of State for Transport and the Regions; The Rt. Hon. Ian McCartney MP; Christine M Russell, MP for Chester; Dr Ashok Kumar MP; Ben Chapman MP; Hazel A Blears MP; Charles Allen, Chief Executive *Granada Group*; Sir Alan Cockshaw; Sir Brian Wolfson; Sir William McAlpine and Jeremy Newsum.

Asian Elephant in Crisis Campaign Patrons Elizabeth Hurley, Ray Mears, Dr Stephen Baxter.

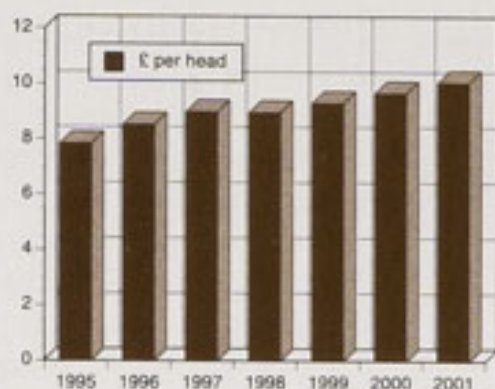
FUNDRAISING ADVISORY BOARD

The Board is Steve Brauner (Deputy Editor *Daily Post*); Chris Clifford (Director, North West, CBI); Peter Foden CBE; Neil Kemsley (formerly of the Bank of England); Geoffrey Piper (Chief Executive of the

North West Business Leadership Team); Anthony Strachan (Regional Representative of the Bank of England); and Alan Watson (Council Member and former Agent of the Bank of England in Manchester).

1. Visitor related income

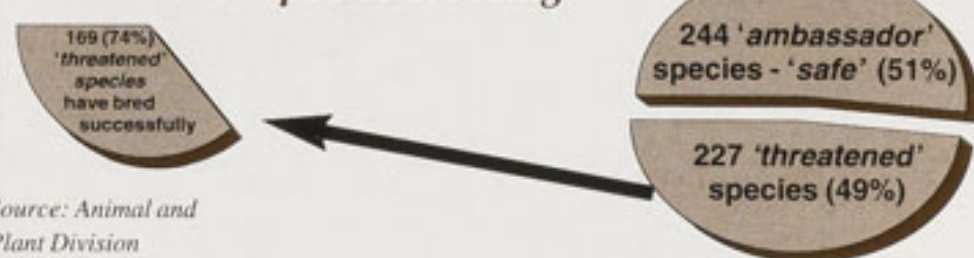
Visitor numbers - at excellent levels - are reported page 26. Our ability to maintain income levels is crucial. This indicator relates visitor related income (ie, admission, and trading, but not membership, adoption or development income) to visitor numbers, and shows we have improved on a very successful 2000.



2. Peer group visitor benchmarking

We now have four complete years of visitor related performance benchmarking from research by the Association of Leading Visitor Attractions (ALVA) - the 'million and over' group of UK tourist attractions. The details remain confidential. There are three surveys each year: Spring, High Summer and Autumn, and these are consolidated for an annual rating. We retained our excellent dwell time position, having one of the longest in the survey. In the annual overall value for money rating, we were again in the middle of the rankings, but understandably performed better in the summer survey, see Indicator 7 - top right.

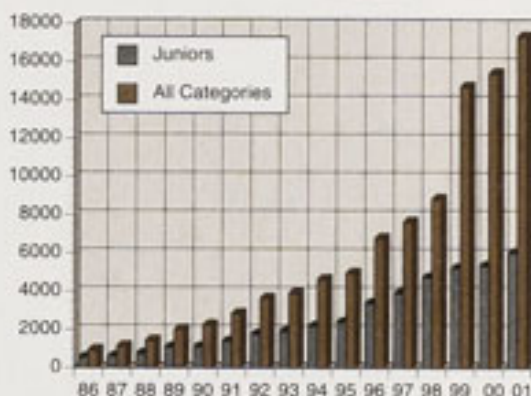
3. Threatened species breeding



Source: Animal and Plant Division

4. Membership growth

Year over year total membership has grown by 12.4% to 17,365, which is the highest in our history. It is most encouraging that over a third of all members now pay by direct debit.



5. Adoptions growth

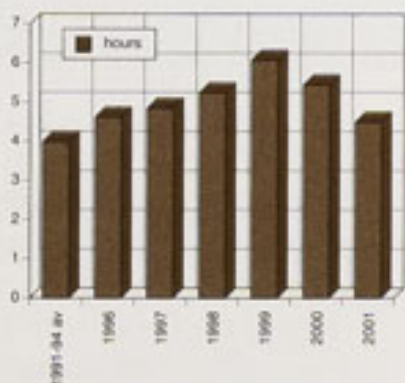
Adoptions grew by 16.3% on 2000, taking us to a record of 5147 individual adopters. This represents £150,000, which is over three quarters of the cost of the annual animal food bill. We are very grateful to all of our generous adopters for this very practical support.



Source: Development Department

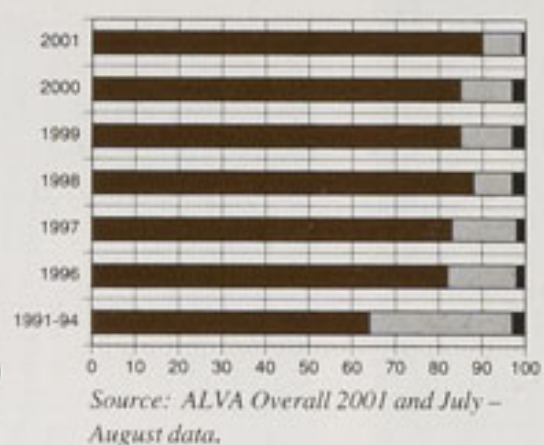
6. High season 'dwell time'

As expected, there has been a fall in high season dwell time, with the average stay in the zoo falling from 5 hours 30 minutes to 4 hours 17 minutes. This is due to our biosecurity precautions against Foot and Mouth disease. We closed the elephant, rhinoceros, camel and giraffe quarters and the pathways around the hoof stock areas for nine months. We expect this to increase in 2002, and it is still longer than the three year average, 1991- 94!



7. Ratings for value for money

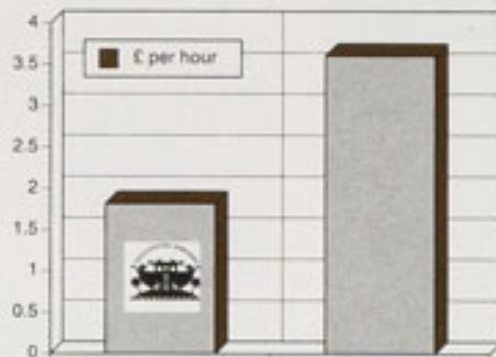
We have improved our already excellent value for money ratings for the whole year, with five out of every six visitors (89%) giving ratings in the two highest categories - (Quintiles 1 and 2) excellent and very good. This was 4% points better than 2000. The summer ratings were 1% point higher at 90%.



Source: ALVA Overall 2001 and July - August data.

8. Value for money comparison with other top UK tourist sites

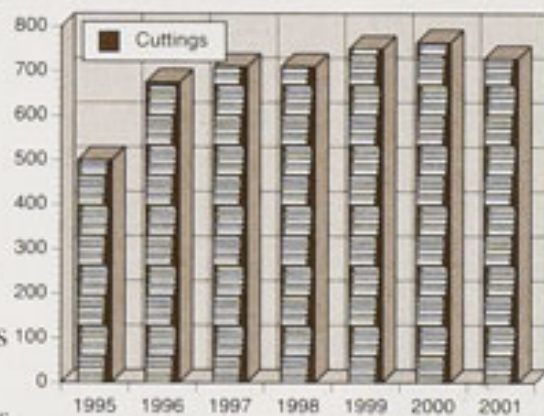
Independent research of the top twenty four paid-for tourist sites in the English Tourism Council list confirms our strength. We had the second lowest adult cost per hour for family attractions, and were fifth overall behind the Victoria and Albert Museum, Canterbury Cathedral, St Paul's Cathedral and the Science Museum.



Source: John Adern Associates 2001 data

9. Recorded publicity - press cuttings

There were 728 identified cuttings, excluding duplicate publications and passing references, equivalent to two per day across the entire year. This is very similar to 2000, and shows the continuing press interest in the Zoo. We are grateful to help from The Press Association (PA) for their syndication, and to our regional and local papers for their excellent coverage.



Source: Zoo log of press cuttings

10. Editorial television and radio air time

Our TV airtime log fell below the two previous years because of six weeks of closure. In 2001 there was a superb, but shorter Granada series, *Animal Watch*. This generated over 300,000 'hits' on a dedicated web site with special live 'web cameras' showing elephants and chimpanzees.

Radio was below previous levels, mainly because long outside broadcasts we had previously enjoyed in the high summer had been curtailed because of the Foot and Mouth Disease. Nevertheless, over four and a half hours coverage is no small achievement. We continue to enjoy an excellent rapport with the ILR and BBC radio stations of the region, and have had many opportunities to get on air. The proposed installation of extra ISDN telephone lines will make on-site outside broadcasts much easier.



Source: Zoo Airtime logs

11. Web site 'hits' 2001

We had over 200,000 'hits' or enquiries. We will expand this for 2002.

12. Position in 'UK Top Twenty' paid-for tourist attractions

We were 15th in the listings for paid-for attractions (17th in 2000).

Source: English Tourism Council and Association of Leading Visitor Attractions

Notes: Percentages are rounded throughout. Press cuttings are unduplicated and exclude technical and specialist media and passing references. There is no attempt to weight by readership or to assess space value. TV and Radio is a simple time count across all stations. Advertisements are not included in any count.

It is essential that the Animal and Plant Conservation Division is continually evolving and adapting to meet its animal welfare and conservation goals. These changes require careful planning and the two most important planning documents are the *Animal Collection Plan* and the *Physical Master Plan*.

The *Animal Collection Plan* is under constant revision to ensure that the collection of animals we hold achieves the optimum balance of visitor attraction and educational interest within an overriding conservation theme. It is usually easier to move and accommodate the smaller species within the Zoo than large mammals and this is reflected in the new species coming into the collection in 2001. One large and charismatic animal that did enter the collection in 2001, however, was the Jaguar. Following the completion of the 'state of the art' *Spirit of the Jaguar* exhibit - built thanks to a very generous donation from Jaguar Cars - we brought in three magnificent Jaguars, two from Rome Zoo and one from Poznan Zoo in Poland. These animals and the tremendous exhibit have become the 'Jewels in the Crown' of our collection.

We were also delighted to bring the highly endangered Red-billed Curassow to Chester after many years of planning. Other threatened species that came into the collection in 2001 included Malayan Peacock Pheasant, Great Argos Pheasant, Victoria Crowned Pigeon and the Egyptian Tortoise. These species are managed as part of National, European or International breeding programmes. Chester Zoo staff play an increasingly important role in these co-ordinated efforts to establish and maintain healthy genetically viable populations for the future. The most significant births of managed threatened species included: Rodrigues Fruit Bat, Buffy-headed Capuchin, Lion-tailed Macaque, Yellow-throated Laughing Thrush, Yellow-backed Chattering Lory, Tropic Hornbill, Mountain Peacock Pheasant, Waldrapp Ibis, Vietnamese Pheasant, Bali Starling, Red-tailed Amazon Parrot, Mount Apo Lorikeet, Congo Peafowl, Pink Pigeon, Sand Lizard, Banggai Cardinal Fish.

The *Physical Master Plan* guides the Zoo's building projects. Gradually the Zoo will be divided up into *Zones*, i.e. groups of exhibits and facilities that have more impact for the visitor and a stronger educational message. An example is the *South American Forest Zone* which incorporates the *Spirit of the Jaguar* exhibit and within the same area of the Zoo, showcases other species that share the Jaguars' range - Hyacinthine Macaws and Buffy-headed Capuchin Monkeys. By naming the nearby Picnic Lodge after a tribe of

Buffy-headed Capuchins

South American people, the *Arara*, the whole zone has greater context. The theme of the Zoo continues - with every new project - like a piece of a jigsaw. It will be some years until there are enough pieces of the jigsaw in place to see the full picture of the new Zoo.

Team work

We need to co-ordinate the efforts of many skilled people to care for a collection of animals that is as large and diverse as Chester. The role of vets and keepers is obvious, but there are many other unsung heroes and heroines in the Division, whose role may not be as obvious or clear. However, their input is just as important, in allowing us to maintain the collection and develop for the future.

Mark Pilgrim, Chief Curator

Conservation Outreach Activities

Our major activities in overseas conservation are detailed on page 16 and tabulated on page 50. Chester Zoo staff involvement in overseas conservation and research was continued in 2001, strengthening the programmes developed in previous years. For example, Alexandra Zimmermann participated in a workshop on Jaguar/Rancher conflict in Brazil. Many of our staff had the opportunity for travel funded through the *Day With A Keeper* scheme to gain first-hand experience of overseas projects. These include visits of staff to assist Orang utan conservation in Borneo, to work at breeding and rescue centres in the Philippines, to work with *Africat* in Namibia and with the Black Rhinoceros project in Kenya.

Closer to home the Harvest Mouse breeding and release programme was further developed by Penny Rudd with assistance from other staff members. It is intended that our first releases will be made on Zoo land in 2002. Sand Lizards bred at Chester Zoo were again released at sites in Wales and Merseyside. Outreach activities have not been limited to animals and Sarah Bird is now leading the local Grassland and Black Poplar Bio-diversity Action Plans.



Photograph: Cheshire Wildlife Trust

Black Poplar

Research, Environmental Enrichment and Conservation Advocacy

Dr Stephanie Wehnelt continued to develop in-zoo research activities at Chester with the assistance of Carys Hudson. Over 120 undergraduate students were guided through projects in the Zoo. The Zoo's *Welfare and Enrichment Forum* continued to develop under the chairmanship of Simon Marsh and Belinda Porter (see page 19). Dr Wehnelt organised a *Zoo Federation Research Symposium* hosted at Chester and gave a presentation on Chester Zoo's enrichment programmes at the *International Environmental Enrichment Conference* in Australia. Other conservation participation included presentations by the Director at the EAZA meeting in Prague and the WAZA meeting in Perth, Australia. Dr Roger Wilkinson at The International Hornbill Meeting in Thailand, Michael Crumpler at the First International Elasmobranch Conference in Florida and Mark Sparrow at the American Zoo Horticulturists meeting also in Florida. The Director visited Assam to develop the *Asian Elephant In Crisis* programme and John Regan travelled to China to continue the important Chengdu relationship to conserve biodiversity. Our *Conservation Prospectus, Supporting Conservation Worldwide* published early in 2001 was invaluable in demonstrating and encouraging further practical support.

Dr Roger Wilkinson, General Curator:
Higher Vertebrates and Research.

During 2001 the veterinary care at Chester Zoo has been provided by the Vet Team -Stephanie Sanderson (Veterinary Manager), Jane McDonald (Veterinary Nurse), and Shan Siah (the newly appointed Clinical Scholar in Conservation Medicine - a post held in conjunction with Liverpool University). The clinicians and pathologists at *Liverpool University Veterinary School* at Leahurst have, as always, provided us with invaluable support. Unfortunately, due to our self imposed biosecurity measures during the national FMD crisis, our consultant vet Noel Walker (who also works as a general practitioner in a mixed veterinary practice) was unable to attend.

Quarterly audits of the health and welfare of the collection are undertaken by the Scientific and Veterinary Committee of the Society. This Committee provides a forum for the discussion of challenging cases and to highlight potential problems.

Preventative health care programmes

Our biggest preventative health care challenge this year was protecting our animals from the national Foot and Mouth Disease epidemic (Feb 2001-Jan 2002). Clinical cases were confirmed within 10 miles of the Zoo. Infection of any of our animals would almost certainly have led to the compulsory slaughter of 35% of our mammal stock (including the Elephant herd). The vet team were involved in briefing management and Council on the progress of the epidemic and the design and implementation of our biosecurity measures. Staff from all departments have shown great perseverance, dedication and adaptability during this period. It is thanks to their supreme efforts that our animals have escaped this dreadful disease.

Another notable feature of our preventative health care plan is our parasite monitoring programme led by veterinary nurse, Jane McDonald. During 2001 Jane has processed over 1000 faecal samples. Her work has allowed us to build up a picture of the seasonal variation in parasite load in the collection and, as a result, refine our control programme.



Rhinoceros examination under anaesthesia by Veterinary team

Photograph: John Frost

Healthcare Summary Statistics (including preventative health care)						
	Individuals Treated		Visits undertaken		Post mortem examinations	
	2001	2000	2001	2000	2001	2000
Mammals	354	193	881	680	99	93
Birds	207	136	506	435	195	181
Reptiles	81	33	286	222	25	34
Other	68	51	152	190	36	12
Total	710	413	1825	1527	355	320

Daily clinical care and Pathology.

The clinical and pathology case load for 2001 is summarised above. Notable achievements include the 26% drop in reptile mortality due to implementation of husbandry improvements highlighted as priorities in the *Reptile Health Review* - a report commissioned by the veterinary department and undertaken in 2000 by Matt Hartley and Isolde McGeorge. Significantly, female elephant *Kumara* was euthanised when it was found that she had an incurable bone infection.

In November 2000, we started groundworks for Phase I of the new *Animal Health Centre* (right), situated between *Spirit of the Jaguar* and *Cedar House*. Completion is projected for Spring 2002. We expect this new facility to further improve the range and sophistication of clinical care we can provide on site.



Research / Education

We continue to use MedARKS as our primary clinical data recording system and to contribute to veterinary knowledge of endangered species by submitting our records to a centralised international database run by ISIS.

The Veterinary Department takes part in a wide range of collaborative research projects principally in the areas of parasitology, genetics and reproductive endocrinology. The department has also hosted a number of veterinary clinical and postgraduate students and provides teaching for the new BSc in Conservation Medicine at Liverpool University.

In order to keep up with developments and exchange ideas with other zoo and wildlife vets, our staff have attended meetings of the British Veterinary Zoological Society, American Association of Zoo Veterinarians, Association of Amphibian and Reptilian Veterinarians, World Association of Wildlife Veterinarians and Australian Association of Veterinary Conservation Biologists. I also sit on the Veterinary Advisory Group of the Federation of Zoos of Great Britain and Ireland.

Stephanie Sanderson, Veterinary Manager

ANIMAL SUPPLIES DEPARTMENT

Strategically, the department continued to broaden the range of equipment and consumables supplied to the Animal Division. Unfortunately, we had to postpone our plans to upgrade the building and to expand the range of general support services we provide.

Due to the Foot and Mouth Disease crisis, we experienced extreme difficulty in sourcing uncontaminated (animal food grade) meat for the carnivores. However, generous donations of meat from supermarkets and private individuals, various unexpected windfalls and a carefully adjusted feeding strategy helped us to overcome this.

More vehicles increased the efficiency of food distribution and the opportunity for cost effective purchase of bulk items. We continued to put increasing emphasis on the acquisition and efficient utilisation of the food industry's surpluses. We appreciate the efforts made by our trade friends. The overall result was a 7% reduction in the cost of feeding the collection.

We look forward to 2002 as the year of expansion and diversification of our services to the Zoo.

Anthony Hutchinson, Animal Supplies Manager

Animal Team Reviews 2001

This proved to be a most challenging year. The tragic elephant incident that led to Richard Hughes' death, followed by the outbreak of foot and mouth disease in the UK, cast a dark shadow across the Zoo. It is during these exceedingly difficult times that you learn a great deal about the quality of your staff. I have been overwhelmed by the professionalism and dedication of our animal team.

Despite the difficulties we still achieved a tremendous amount of progress, which the Team Leaders will outline.

As we bounce back from 2001, we look forward to a brighter 2002.

Mark Pilgrim, Chief Curator

**Birds Team**

Breeding started early in 2001 with both pairs of Giant Hornbill females being mudded into their nest boxes and sitting on eggs. Unfortunately they failed to hatch but, using infra-red cameras, we observed that the females were not sitting on the eggs

properly. With this information, we have modified the nest boxes in the hope for successful breeding next year.

Notable breeding successes this year include White Stork, Chilean and Caribbean Flamingo, Waldrapp Ibis, Roulroul Partridge and Satyr Tragopan. For the first time we bred Great Grey Owl, Blue-



Mountain Peacock Pheasant

Photograph: Dr R Wilkinson

winged Kookaburra and Tarric Hornbill. Sustained breeding of the rare Mountain Peacock Pheasant resulted in a Chester bred bird being sent back to Malaysia's Wildlife Department Pheasant Breeding Station.

Wayne McLeod, Team Leader, Birds

**Elephants Team**

Though suffering a difficult and traumatic year, with the tragic death of our good friend, Richard Hughes, the Elephant team looks forward to the future with determination. We aim to have a well-trained, highly social breeding group of elephants managed by handlers who are fully conversant with both free and protected contact techniques. This is a huge task but one we feel fully capable of achieving. A protected contact wall has recently been completed within the building. With help from our consultant Alan Rookcroft, an evolving management protocol has been produced and is now an integral part of everyday life.

Despite the sad loss of *Kumara*, one of the adult females, the herd continues to flourish. Our young elephants continually show progress crucial in developing well-adjusted behaviours typical of animals in the wild. *Sithami's* dedicated mothering of her brother *Assam* bodes well for the future, as does young bull *Upali's* amorous behaviour (written by Alan Littlehales).

Mick Jones, Team Leader, Elephants

**Giraffes Team***

Photograph: View Finder, Andrew Price

Tim Rowlands feeds Rigsby

This has been a roller coaster of a year, starting with the birth of *Neo*, a male giraffe, and continued well with the arrival of a female Babirusa, and the births of a Zebra (*Holly*) and Camel (*Caspar*). We then had our first Philippine Spotted Deer born, but he failed to survive - a real disappointment.

During July, our gazelle *baby boom* started, with seven out of our ten born in the month! However the lowest point of the year followed when, despite the efforts of all involved, we lost our female Giraffe, *Geraldine*, after sedating her to trim her hoofs

The year ended as it began with a giraffe birth. *Rigsby* is our fourth giraffe in two years. Four youngsters running around the paddock has never been seen before at Chester!

Tim Rowlands, Team Leader, Giraffes

**Primates Team**

The year started sadly with the death of our oldest Chimpanzee, *Meg*. We estimate that she was around 54 years old and she had been at Chester since 1950. She was a great, great-grandmother and was almost certainly the oldest Chimpanzee in Europe. Both Chimpanzees and keepers alike miss her.

Breeding successes included Ring-tailed Lemurs, Mandrills and Lion-tailed Macaques. Some animals left the collection to add to or establish new breeding groups around the world, notably Orang utan *Bella*. Most members of the team travelled abroad this year; to help with conservation work, funded by the Zoo's wonderful *Keeper for a Day* scheme. Chris Yarwood, Geoff Harper and Blacksmith Richard Read travelled to Borneo to help construct facilities for an Orang utan rehabilitation centre. Others travelled closer to home to check the suitability of enclosures for animals before we moved them.

The Primate Team were also asked to become 'Cover Keepers' for the Bird Team and this diversity of roles has worked well, adding to our experience.

In the coming year we hope to design new housing for our Orang utans, and develop additional facilities for smaller primates.

Andrew Lenihan, Team Leader, Primates



Rhinos Team*

It has been a fine year on the breeding front, with births including Capybara, Burmese Brow-antlered deer, Blackbuck, Scimitar-horned Oryx, Gemsbok and Sitatunga. There has also been some stock movements, both internally and externally. The Brow-antlered Deer were moved to the *Asian Plains*, a new breeding male Gemsbok was brought in and the Bison were moved on to make space for our important new Rhino developments. It is exciting news that we are bringing a young male Black Rhino *Sammy*, from Japan in 2002. We hope he will mix in well with our young females, *Kitani* and *Manyara*.

John Frost and I visited *Sweetwaters Game Reserve* in Kenya for three weeks. We saw lots of Rhino, learned much about their ecology, and came back a lot fitter after going out with the local wildlife patrol!



Chas. Mackenzie, Team Leader, Rhinos

Twilight Team

Famous actress and conservationist, Stefanie Powers and the Managing Director of *Jaguar Cars*, Jonathan Browning,



officially opened *Spirit of the Jaguar* in September. The wealth of interpretation in this exhibit certainly stimulates the mind. It addresses some of the problems these magnificent cats face and highlights their importance in ethnic folklore. The foresight and generosity of *Jaguar Cars* made all this possible. We are very grateful indeed. The first two cats came from Rome Zoo in April, the

third from Poznan Zoo (Poland) in June. They have all settled into their new home really well and have become a firm favourite with our visitors.

The *Twilight Zone* is as popular as ever and still helping to dispel the fears and misconceptions about bats held by some. Reports of sightings of British bats by the public keep coming in and are gratefully received and entered on a scientific register.



Paul Howse, Team Leader, Twilight Team

Carnivores Team*

Blocks of ice frozen from fishy water, essential oils, and pumpkins were all used for Lion and Tiger environmental enrichment programmes! The Sealions continue to receive their daily medical training programme to enrich their lives. We planned behavioural enrichment programmes for almost all our species during the year.

The Kangaroos have again produced another 'joey'. All three Bongo cows have now been mated, and we hope for calves next year. We were sad to lose our male Cheetah *Shamba*, when old age caught up with him. Our last elderly Eurasian Small-clawed Otter died. We have since been able to upgrade the paddock, prior to a young breeding pair arriving in 2002. We have improved several enclosure habitats in the year. I would like to thank all my team for their hard work and dedication at all times.

Sealion Beach

Alan Woodward, Team Leader, Carnivores

Parrots Team*

In January we acquired a second pair of Red-tailed Amazon parrots. Shortly after installing these in their new aviary, they produced three chicks, two of which fledged successfully. With the a wild population in the low thousands this is a very significant breeding. Other parrots bred include Mount Apo



Photograph: Dr Roger Wilkinson

Lorikeets, Duyvenbode's Lories and Yellow-backed Chattering Lories.

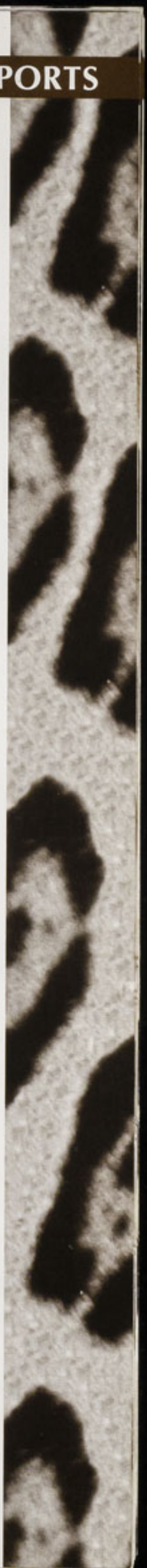
Hyacinthine Macaw

The rearing room raised a large number of waterfowl including Falcated Teal, Northern Shoveller, Gargany, Smew, Hooded Merganser, Laysan Teal, White-headed and Ferruginous Duck. A single Vietnamese Pheasant was foster reared - a first for Chester. The Humboldt's Penguins provided us with the year's biggest baby boom. In total, 23 chicks were reared - 17 by the keepers and six by the parents. The majority of these have been transferred to Emmen Zoo in the Netherlands to start a new breeding colony. This international conservation support is vital.



Andrew Bagnall, Team Leader, Parrots

*Team names have been chosen for simplicity, those with asterisks cover a substantially greater number of species.



Photograph: View Finder, Andrew Price

By the start of 2001 we were halfway through the refurbishments to the Herpetological Department. Now with many new species to cater for (such as the Lace, Mangrove and Pygmy Monitor Lizards) we were going to be very busy throughout the year creating their ideal, enriching environments. This would include a simulated termite-mound for the Lace Monitors to nest in.

In April I attended the Herpetology Taxon Advisory Group (TAG) at Jersey Zoo where we were told of the extent of the Asian Turtle conservation crisis. Due to the exploitation of all Asian Turtle species, the status of the Asian Box Turtle has now risen to *vulnerable in the wild*. This is a species that we have been breeding for many years.



Photograph: Isolde McGeorge

In view of their increased conservational value we will certainly continue to do so in order to establish crucial reserve populations.

With the arrival of four young Egyptian Tortoises, four Sail-Fin Lizards and five Pygmy Monitors, we now have the 'new blood' needed to continue with these breeding programmes.

After the successful hatching of 20 Sand Lizards, we went ahead with the release of these and the remainder of the young from last year. A total of 26 animals were re-introduced to the wild at two different sites on the North Wales coast. We achieved good results with two species of Poison Arrow Frog, Sunbeam Snake and Red-legged Tortoise. The Mallorcan Midwife Toad tadpoles successfully metamorphosed.

The Komodo Dragons continue to do well. We are particularly excited at the prospect of moving the young females, *Poppy*, *Flora* and *Nessie* to new accommodation in 2002. With this to look forward to and future plans for the development of the Department, we are on the brink of another exciting year.

Lace
Monitor
Lizards



Isolde McGeorge, Herpetologist

AQUARIUM

We have bred large numbers of fish, invertebrates and amphibians in the Aquarium and we sent over 1100 Seahorses (*Hippocampus kuda*) and 300 Knysna Seahorses (*H. capensis*) to other collections. This is an important conservation effort, given the global decline of Seahorses.

Our young group of Fresh-water Stingrays produced

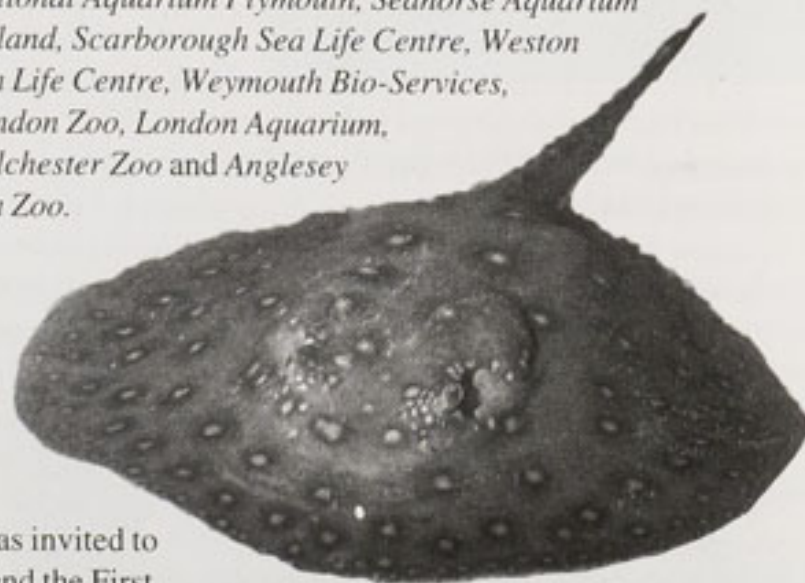
Fresh-water Stingrays

seven young in July. Unfortunately this was from a brother/sister mating and we have since rectified this problem by exchanging males with another collection.

Our Lake Victoria Cichlids and Lake Barombi Mbo Cichlids continue to do well, as do our Banggai Cardinal fish with many young going to other collections, including: Bournemouth Oceanarium, Blue Planet Aquarium,



National Aquarium Plymouth, Seahorse Aquarium Ireland, Scarborough Sea Life Centre, Weston Sea Life Centre, Weymouth Bio-Services, London Zoo, London Aquarium, Colchester Zoo and Anglesey Sea Zoo.



I was invited to attend the First International Elasmobranch Symposium which was held in Orlando, Florida. I presented a poster paper on the History of breeding Fresh-water Stingrays at Chester Zoo. I also attended the European Union of Aquarium Curators (EUAC) meeting, held this year at Rotterdam in the Netherlands.



Michael Crumpler, Aquarist

Early in the year we focused on the landscaping and planting of the new *Spirit of the Jaguar* exhibit. We wanted our visitors to experience the Jaguars' different habitats, and for the cats to feel at ease with their surroundings. We created both savannah and rainforest habitats for the animals' internal areas, and an adjoining rainforest immersion area for the public. We planted the two outside enclosures to be sympathetic to savannah and rainforest habitats. The displays in the borders and beds surrounding the exhibit highlight some economically important South American plants including vanilla, rubber, guava, chewing gum tree, paw-paw, passion fruit, (inside the building). There are tomatoes, peppers, tobacco, maize and potatoes outside (see above right for an example of the interpretation).



Maturing planting in the Rainforest, *Spirit of the Jaguar*

Roman Garden

In July, David Rudkin, Director of the *Fishbourne Roman Palace* in Sussex, officially opened the *Roman Garden*. The garden is maturing nicely with well over a year's growth.

We opened up two of our nursery greenhouses to the visitors as *The Grow Zone* so they can see what goes on 'behind the scenes'. *The Grow Zone* displays and gives information on a wide selection of the plants we grow for zoo use, and lets us display our National Collection of rare orchids of the family Pleurothallidae.

We supplied plants and helped to establish these in a number of animal enclosures throughout the year including, *Chimpanzee Forest*, Philippine Spotted Deer, Red-crowned Cranes, Hyacinthine Macaws, Californian Sealions, and various aviaries.

Mark Sparrow and Sarah Bird gave lectures to outside organisations including: Neston Horticultural Society,

Ness Botanic Gardens, Thornton and Crosby Gardeners' Club, Argoed Gardening Club, Greasby Gardening Club and the Burton Society. Together with Mark Hargreaves, they conducted garden tours to groups from: Ness Botanic Gardens, Bodnant Garden, Willaston Gardening Club, Tarporley Rotary Club, Ormskirk National Trust Group and Drayton Manor Park and Zoo.

Staff participated in important national and international conferences including: PlantNet/BGEN (Botanic Gardens Education Network) at Oxford Botanic Gardens, *Wood Recycling, Composting and Endangered Trees*

at Westonbirt Arboretum, the Fifth Annual Zoo Plant Group Meeting in Dublin, the AZH (Association of Zoological Horticulture) meeting at Disney's *Animal Kingdom* in Orlando, Florida, and the European Association of Zoos and Aquaria (EAZA) Zoo Horticulture meeting in The Netherlands.

Mark Sparrow and Sarah Bird began a regular column *Growing Concerns* in *Zoo Life*, our Members' Magazine. This includes a general news feature, *Plant of the Month*, and a Conservation Corner.

Threatened Plants

We are gradually increasing the scientific value of the plant collections and acquiring plants that are threatened in the wild. For the first time, we report part of our stock list (page 39). Sarah Bird chairs the local Biodiversity Action Plan (BAP) for the Black Poplar, Britain's most endangered native timber tree (see page 10). In the nursery we continue to look for ways to be more environmentally friendly in our day-to-day operations. We are composting green waste, recycling plastic pots, using fewer chemicals for pest control, and growing most of our nursery plants in peat free composts. There are more details in *Environmental Protection* on page 19.

In September we received an unusual request from a group of Barclays Bank staff. They were looking for somewhere to work for a day, as part of an *Employee Volunteer Scheme*, to improve their working relationships and help team bonding. One of them was a Chester Zoo member, so they decided that the Zoo would be an excellent place. Six staff came, helping strip out some of this year's summer bedding plants and replace them with the spring mixture. As well as their hard work and time, they gave £400 towards the tools and equipment they used on the day. We are very grateful for their imaginative use of the scheme.

Mark Sparrow, General Curator: Botany and Horticulture



Part of our Orchid collection

The new *Grow Zone* has proved popular to visitors in East Zoo

North of England Zoological Society
Supporting Conservation
Worldwide



www.chesterzoo.org.uk



Conservation Prospectus

Chester Zoo continued its support for major conservation and research programmes and projects in 2001 (tabulated on page 50). Financial support, that was of necessity suspended following the Zoo's precautionary closure at the start of the Foot and Mouth Disease (FMD) epidemic, was reinstated with the recovery of the Zoo's visitor numbers in late summer. As a result of this recovery, Chester was able to make very significant contributions - both through financial support and staff involvement - to the development of many important conservation and research programmes.

Keepers' working visit

Our long-term commitment to the Philippines was strengthened by the working

visit of two Chester keepers, Belinda Porter and Leanne Lowton to the Philippines early in the year. Chester continues to assist Fauna and Flora International's (FFI) *Philippines Biodiversity Conservation Programme* as one of the main international partner organisations. In 2001 we helped with the development of the Philippines Hornbills Conservation Programme; the operational costs of the threatened species rescue and breeding centres on Negros and Panay Islands and supported a faunal survey of the last remaining forest patches on Siquijor Island. Chester gave full support to two critically important forest protection and wardening schemes on Cebu and in the Polillo Islands.

Our new *Philippine Conservation Biology Scholarship Scheme* was extended in 2001 to enable completion of a Cave Fauna Survey in south-west Negros conducted by Cynthia Dolino of Silliman University. It was also used to facilitate important new studies by two Masters degree students from the University of the Philippines. These comprise of field and taxonomic research on three threatened (but as yet scientifically undescribed)

Philippine Sail-fin Lizards in the West Visayas, by Mimie Ledesma, and field studies of the ecological dynamics of forest fragments on Cebu, by Orlyn Orlanes.

Photograph: Dr William Oliver



Jointly financed boat in the Philippines

Additionally, Chester Zoo's *UK Studentship Scheme* supported the University of Oxford / University of Los Banos, Philippines joint expedition to the Polillo Islands, further strengthening Chester's connections in the area.

Amur Tiger relocation

Some small emergency payments were agreed towards Tiger crates required immediately by the Amur Tiger project to assist relocations. All larger grant assistance was suspended during zoo closure and immediately following reopening.

After the Zoo started normal trading, several projects that needed immediate assistance received funds. These included the Philippines Polillo project; an exploratory visit to Chengdu Giant Panda Breeding Base, China, by Liverpool University geneticist Phil Watts; the behavioural element of Mark Pilgrim's PhD project on *Amazona* parrots at Loro Parque, Tenerife and printing the *Conservation Prospectus* (top left).

Photo: A Zimmerman



Link with Wildlife Conservation Society

Conservation Officer, Alexandra Zimmerman participated in a Wildlife Conservation Society (WCS) Jaguar/Rancher Conflict workshop in Brazil. Links with WCS were enhanced by the development of a formal Memorandum of Understanding that NEZS and WCS will work together on a Jaguar conservation and research programme effective until 2004. For 2002 it has been agreed that Alexandra will be seconded from NEZS during the year to work together with WCS and lead in the very significant Jaguar/Rancher conservation programme (above).

At the beginning of the year financial support was granted to the Gashaka Gumti Primate and Hunting Dog research programmes

Photograph: Alan Woodward



Africat support programme in Namibia

(the latter funded privately and facilitated through Chester), Tsavo Black Rhino protection, Senegal Black Crowned Crane conservation research and New Guinea Forest Birds (Palm Cockatoo, Crowned Pigeons, Birds of Paradise) research.

Later in the year further support was granted for the *Zoo Outreach Organisation* India activities; for the China biodiversity programme including fieldwork on Yellow-throated Laughing Thrushes and for field research in South America on Buffy-headed Capuchins. Additional project support was made possible through Team Leader Alan Woodward who donated some of his lecture fees to assist the *Africat*, Congo Katanga Parks and Munda Wanga projects that would otherwise not have received support in 2001 because of financial constraints. Various aquatic conservation projects are funded including Mexican livebearing fish, Himalayan Mahseer and for sharks and rays.



Buffy-headed Capuchin

An important new development was the *Asian Elephant in Crisis* campaign which has already begun to establish a fund that will be available to assist elephant conservation and research in the wild.

Dr Roger Wilkinson,
General Curator: Higher Vertebrates and Research



This shows Chester Zoo's global involvement in conservation, animal welfare, scientific study, zoo marketing and education in 48 countries across all five continents.

North and South America

1. **Belize**
 - Jaguar surveys at Cockscomb Basin Nature Reserve
2. **Bolivia**
 - Chester Zoo Studentship support for Yungas 2001 expedition
3. **Brazil**
 - Conservation Officer participation in WCS Jaguar/Rancher Workshop
 - Buffy-headed Capuchin (Monkey), census and distribution survey
4. **Canada**
 - Work with Toronto Zoo in the Puerto Rican Crested Toad Conservation Programme
5. **Costa Rica**
 - Support for Conservation Breeding Specialist Group (CBSG) work with Simon Bolivar Zoo
 - Visit from Director, National Zoo, San José
6. **Cuba**
 - Support for Conservation Breeding Specialist Group (CBSG) Crane project.
7. **Guatemala**
 - Support for Conservation Breeding Specialist Group (CBSG) Scarlet Macaw project
8. **Mexico**
 - Support for conservation of endangered freshwater fishes, especially livebearers
 - Support for Conservation Breeding Specialist Group (CBSG) Manatee and Scarlet Macaw projects
9. **USA**
 - Support for Conservation Breeding Specialist Group (CBSG) Wyoming Toad and Grey Wolf re-introduction projects
 - Visit and presentations by Dr Alan Rabinowitz, Wildlife Conservation Society of New York (WCS)
 - Memorandum of Understanding with WCS for five year Jaguar Research programme
 - Visit from San Diego Elephant Consultant
 - Aquarist's participation at First International Elasmobranch Symposium sponsored by NEZS
 - Curatorial participation at Association of Zoological Horticulture (AZH) Meeting at Orlando, Florida.
 - Veterinary Officer's participation in American Association of Zoos and Aquaria Veterinarians meeting
 - Director's and Curatorial contributions to *Encyclopaedia of Zoos*, published in Chicago

Europe

10. **Belgium**
 - Transfer of Red-billed Curassows
11. **Canary Islands (Spain)**
 - Staff organise 3rd International Zoo Marketing Conference
 - Amazon Parrot research
12. **Czech Republic**
 - Director, Curators and staff participation at EAZA Conference
13. **Denmark**
 - Keeper exchange with Aalborg staff
14. **Eire**
 - Visits from Dublin Zoo staff
 - Work experience student
 - Research student
 - Staff participation at Annual Zoo Plant Group meeting, Dublin
15. **Greece**
 - Research students
16. **Hungary**
 - Support for Conservation Breeding Specialist Group (CBSG) Meadow Viper project
17. **Italy**
 - Transfer of Jaguars from Rome Zoo
18. **Netherlands**
 - Transfer of Penguins to Emmen Zoo
 - Work experience students
 - Aquarist's attendance at European Union of Aquarium Curators' Conference (EUAC) at Rotterdam
 - Staff participation at European Association of Zoos and Aquaria (EAZA) Zoo Horticulture meeting
 - Transfer of Hornbills and Pheasants
19. **Norway**
 - Research student
20. **Poland**
 - Transfer of Jaguar from Poznan Zoo
21. **Russia**
 - Amur Tiger relocation project help (with London Zoo)
22. **Spain**
 - Staff Visits
 - Support for Conservation Breeding Specialist Group (CBSG) Atlantic Coast Monk seal project
23. **UK**
 - Participation in Black Poplar conservation project
 - Harvest Mouse conservation and re-introduction programme
 - Sand Lizard conservation and re-introduction programme
 - Support for Chimpanzee studies
 - Organisation of WAZA/EAZA Third International Marketing Conference
 - Curatorial and staff attendance at annual Zoo Plant Group conference
 - Support for British Veterinary Zoological Society conference
 - Support for veterinary studies at Bristol Zoo on marmosets
 - Herpetologist attended Turtle Taxon Advisory Group Conference at Jersey Zoo

- Hosting of 3rd Zoo Federation Research Symposium at Chester
- Director assisted in degree course evaluation, Liverpool JMU

Africa

24. **Cameroon**
 - Support for Conservation Breeding Specialist Group (CBSG)
 - Chimpanzee and Gorilla projects
25. **Democratic Republic of the Congo**
 - Support for National Park staff
26. **Egypt**
 - Tortoise field research by Keeper
27. **Gabon**
 - Director's support for Upper Guinea biodiversity exercise, Conservation International
28. **Kenya**
 - Substantial funding in partnership with Save the Rhino International for Kenya Wildlife Service's Black Rhino surveillance and protection in Tsavo East National Park
 - Members' Tour to see Rhino progress
 - Keepers working visit to Sweetwaters Reserve
 - Staff participation in African Zoo and Reserve Educators' Conference
 - Support for William Holden Wildlife Foundation
29. **Madagascar**
 - Lemur conservation fund raising
 - Support for Conservation Breeding Specialist Group (CBSG) Giant Jumping Rat and other projects
30. **Mascarenes**
 - Rodrigues Island Fruit Bat research
31. **Mauritius**
 - Support for Echo Parakeet breeding project
32. **Namibia**
 - Support for African big cat conservation
 - Keeper secondment
33. **Nigeria**
 - Primate Research support, Gashaka Gumti National Park
 - Hunting Dog survey, Gashaka Gumti National Park
34. **Senegal**
 - Support for Black Crowned Crane status survey
35. **Zambia**
 - Animal and Education staff working visit to support Munda Wanga Zoo

Asia

36. **Borneo**
 - Staff working visit to help Orang utan rehabilitation
37. **China**
 - Exchange visits with Chengdu, and veterinary co-operation together with Liverpool University

- Support for research study on Laughing Thrushes
- Forestry training programme for Sichuan Biodiversity project including endemic birds conservation

38. **Korea**
 - Support for Conservation Breeding Specialist Group (CBSG) Asiatic Bear projects and planning for Seoul Zoo
39. **India**
 - Support for Zoo Outreach India and Bats Conservation network
 - Visit from Zoo Outreach India founder to receive Honorary Scientific Fellowship of Zoo.
 - Director and Chairman of the Development Board visit Assam on elephant conservation project
40. **Indonesia**
 - Support for Conservation Breeding Specialist Group (CBSG) Primate projects
41. **Malaysia**
 - Staff working visit to help Orang utan rehabilitation
 - Support for Semporna Islands Coral Reef project
 - Transfer of Peacock Pheasant to Pheasant breeding station
42. **Nepal**
 - Support for survey on conservation status of Himalayan Mahseer
43. **Papua New Guinea**
 - Palm Cockatoo research
 - Curatorial visit
44. **The Philippines**
 - Support for Fauna and Flora International Philippines: West Visayas and Polillo Island projects including Philippine Hornbills and Spotted Deer
 - Conservation Biology Scholarships
 - Student Expedition Support - Polillo 2001
 - Sail-fin Lizard and Cebu forest plants studies
 - Keepers' working visits
45. **Saudi Arabia**
 - Support for Conservation Breeding Specialist Group (CBSG) Gazelle project
46. **Thailand**
 - Curatorial participation at International Hornbill Research Conference
47. **United Arab Emirates**
 - Director's support for Breeding Centre for endangered Arabian wildlife

Australasia

48. **Australia**
 - Director's participation at WAZA Conference, Perth Zoo
 - Staff participation and presentations at International Environmental Enrichment conference
 - Veterinary Officer participation at Australian Association of Veterinary Conservation Biologists

The Zoo continues to meet its full legal obligations for public safety and animal welfare under the *Zoo Licensing Act 1981* and the *Dangerous Wild Animals Act, 1976*. We await the Coroner's Inquest on the tragic death of Senior Keeper, Richard Hughes in February, following an incident with the cow Asian Elephant *Kumara*.

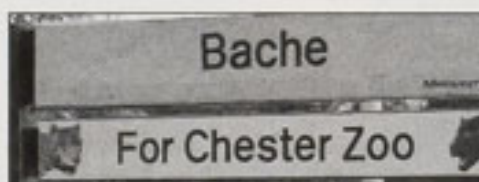
Following the full inspection under the *Zoo Licensing Act* on 12th October 2000, the inspectors advised that a license be issued conditional on construction and completion of full (initial) veterinary facilities by the end of 2001, and completion of second phase of veterinary facilities by the end of 2002, including animal holding areas. Work on this important project began in November 2001, with completion of both phases planned by Easter 2002.

UK Zoo Forum

As active members of the Federation of Zoological Gardens of Great Britain and Ireland we have been in continued discussion with members of the profession and the Government in the establishment of improved zoo standards across the European Union through the *UK Zoo Forum*.

There are on-going discussions with Cheshire County Council and Chester City Council about our position in the *Cheshire Structure Plan* and the *Chester District Local Plan*. The decisions of the City Council are expected in 2002. The Zoo has been represented at Steering Group meetings on environmental matters organised by the Cheshire County Council Environmental Forum.

Our leaflets feature three green ways to reach the Zoo: the Millennium Cycleway, the Shropshire Union Canal main line and our joint rail/bus through-ticketing scheme available from *Arriva Trains Merseyside* manned stations. They sold over 5000 tickets in the year. The Bache railway station now has prominent platform signs



Bache Station

for the Zoo.

We continue to enjoy close links with Cheshire Wildlife Trust (CWT). We have been able to offer office space within the Zoo to a unit which records and audits regional biodiversity ('rECORD') thus leading to much closer liaison. There has been steady progress with our local re-introduction programmes for Harvest Mice and Sand Lizards and support for a Dormouse reintroduction project. *Twilight Zone* keeping staff and presenters continue to obtain local bat survey information.

Endangered Flora

We have included details of some of our endangered flora in the stock lists (page 39) and plan to extend this as we continue to catalogue the biodiversity supported by the Zoo. The teams from Botany and Horticulture and Amenities and Gardens have once again been able to create valuable visitor amenities by making furniture and benches for the gardens and for the new *Arara Picnic Lodge* using material from fallen trees. This adds so much to the natural green feel of the Zoo

There is a separate report (page 19) on the *Environmental Policy Advisory Committee* (ENPOC) who are looking at accreditation for good environmental practise at the international standard of ISO 14001.

Provision for compliance for the Disabilities Discrimination Act becomes more and more important. Once again, we have been grateful for the help of Michael Elkerton as our Volunteer Disability Adviser. We have a new portable lift for the special access toilets. We plan four signing weekends in 2002, following their great success this year. We have reviewed

provisions for the visually impaired. We have new *Zoo Access* leaflets, and the *Disabilities Provision* pages of the web site have been updated.

Professor Gordon McGregor Reid, Zoo Director
John Winward, Safety and Environment Manager

ZOO HEALTH AND SAFETY

As part of the Society's continued commitment to the health, safety and welfare of both its employees and visitors. I was appointed Safety and Environment Manager towards the end of the year. Two of my first objectives will be to create an enhanced Health and Safety 'culture' within the Zoo and to set up management systems to enable the Zoo to comply with all current Health and Safety legislation.

The Committee for Representatives of Employee Safety (CRES) meets regularly with the Zoo Director and Divisional Heads to address staff safety matters.

Provision of first aid was carried out as in previous years. The slightly

Accident and First Aid Requests compared with previous year

Year (visitation change)	Total First Aid Requests	From Visitors	From Staff	Referred for treatment in hospital	RIDDOR* Reports
2001 (-9.5%)	1,396 (-9.2%)	990 (-9.0%)	386 (-6.0%)	41 (-8.2%)	19
2000	1,507	1,096	411	50	20

*Reports of Injury, Disease, and Dangerous Occurrence Regulations

lower figures reflect the lower visitor level compared with 2000. We welcome the reduction in staff requirements for first aid. The *St John Ambulance* volunteers continue to help us in the high season. As always, we are grateful for their contribution.

John Winward, Safety and Environment Manager

PERSONNEL

The six week period of precautionary closure in the Spring, to combat the risk of Foot and Mouth Disease, came just as we were starting to recruit seasonal staff. Thanks to the seasonal staff who were recruited and with invaluable help from the permanent staff, the Zoo managed 'business as usual' at Easter. Our permanent staff were quite magnificent, with over 90% volunteering to take a 10% wage cut, (or an equivalent gift of time) in April to reduce the risk of job losses.

As a precaution, we restricted permanent staff recruitment to replacing key posts, so that many departments, to their great credit, worked below establishment for considerable periods. We established a Joint Working Party with the Staff Association to review the Society's policy for handling potential job reductions but with an emphasis on securing employment.

We continued to have staff involvement in Job Relativity and Health and Safety matters through the established committees. The Staff Association was most active in representing staff interests to management on new pay structure proposals.

Staff development was understandably restricted because of the job uncertainties, but important *Customer Care* and *Interview Skills* training were successfully delivered. The new *Staff Appraisal* scheme planned for 2001 has been postponed to 2002.

Staff turnover in this difficult year was a healthy 8%.

Jayne Quinn, Head of Personnel

The Estates Division took the initiative to creating this zoo-wide, multi-disciplinary committee to look at environmental issues. The committee had its first meeting in November 1999, addressing six key areas:

- Energy efficiency.
- Waste reduction.
- Waste water management.
- Transport.
- Social and cultural development.
- Environmentally sensitive purchasing policy.

Progress to date includes a completed audit of cleaning materials, recycling schemes around the Zoo, introduction of energy efficient equipment, use of peat-free composts in the gardens, and the publication of a regular staff newsletter *Environmental News*.

The group has recognised a need for an Environmental Management System (EMS) to control activities which can cause environmental impacts. The benefits can be legal, moral and financial:

- Compliance with the increased level of environmental legislation.
- Environmental protection is an integral part of species survival.
- Good environmental practices can save money.

The committee selected the internationally recognised accreditation ISO 14001 as the most suitable standard to aim for. To get this we need:

- An initial *Environmental Review* – an examination of existing environmental procedures and a register of our activities, impacts and relevant legislation.
- The implementation of an *Environmental Management System (EMS)* - the setting of targets and objectives with time scales and assigned responsibility.
- A review procedure – the ongoing process of evaluation.

Climate change and energy consumption

There is growing concern about the impact of greenhouse gases on climate change. Carbon Dioxide (CO₂) emissions associated with energy use are of particular concern.

Energy use shows how the Zoo impacts on the environment and possible measures that we can take to lessen this.

Human activity accounts for 22% of CO₂ in our atmosphere.

From this:

- Zoo consumption of electricity is 3,000,000kw/hr per year.
- Each kw/hr of electricity (from fossil fuel sources) outputs 1kg of CO₂ to atmosphere.



Our new 'green' administrative building (Cedar House) built with the environment in mind incorporates the following:

- Our mains gas consumption is 442,000 cubic metres (m³) per year with each 1000 cubic metres of gas emitting 194 kg of CO₂ into the atmosphere.
- Thus the electricity, gas and additional oil consumption on site results in the emission of more than 5000 metric tonnes of CO₂ to our atmosphere:

- High insulation to higher specification than required for building regulations, made from recyclable materials.
- Low energy lighting with kinetic movement sensitive lighting control
- Condensing boilers.
- Central hot water storage.
- Roof and walls timber-clad from sustainable sources.
- Designed for first floor extension maximising building envelope.
- Movement sensitive external lighting.

Zoo Energy Spend

Electricity and gas cost the Zoo £140,000 per year. The Government's climate change levy could increase this by 15%.

What can we do to reduce this level of consumption? We can:

- Educate staff to the environmental and financial costs.
- Improve our monitoring and audits of energy use.
- Improve the environmental performance of our buildings using best current practice in controls and insulation.

Future considerations

We must *think green* when considering new projects, assessing the likely energy implications and seeking to reduce energy demand by 10 – 20% at the concept stage. Council have approved the strategic process of working towards ISO 14001 accreditation. The support and participation of all zoo staff will be required for us to gain this important accreditation, which is held by only one zoo in Europe.

*Andrew Bagnall, Team Leader,
Animal and Plant Division*

Ray Morrison, Maintenance Manager, Estates Division

*Mark Sparrow, General Curator: Botany and Horticulture,
Animal and Plant Division*

ANIMAL ENVIRONMENTAL ENRICHMENT

The Zoo enthusiastically supports environmental enrichment as a major principle in the provision of excellent animal welfare standards. By using our

knowledge of their behaviour and ecology, we aim to provide the animals with an environment that satisfies their biological, social and individual needs. This encourages them to display a wide range of natural behaviour which is one of the *Five Freedoms*, recognised by the *UK Zoo Forum* and the *RSPCA*. Our keeper driven group, *The Zoo Welfare and Enrichment Forum* has representatives from each of the Animal teams. They meet regularly, with scientific support from the Research

ENRICHMENT GOALS

- **Enhanced animal welfare** (Natural time budget, minimal stress, high levels of support, cognitive stimulation)
- **Support conservation efforts** (increased breeding success)
- **Improved health**
- **Increased re-introduction success**
- **Visitor education**

Officer. There is a six monthly rotating period of chairmanship. Staff from other Divisions are encouraged to attend the meetings and contribute ideas. We have regular information in *Chester Zoo Life* about our successful environmental enrichment ideas.

Feeding devices add stimulation to the Giraffe and Anoa environments. The 135,000 litre swimming pool provides valuable enrichment. The four young elephants use it frequently.

*Dr Stephanie Wehnelt, Research Officer,
Animal and Plant Division*



Photos:
L. Hughes
Dr Stephanie Wehnelt



The year threw up a number of big challenges for us, not least the loss of six weeks of school bookings during our precautionary FMD closure. Nevertheless, we turned adversity to advantage and operated as a 'Division in exile' for a few weeks, holding daily meetings at each other's houses and using the time to engage in some forward planning for the remainder of the year. We also took the opportunity to visit various local museums and science centres. This was most beneficial in generating new ideas for interpretative devices in the Zoo.

Our big interpretation project for 2001 was, of course, *Spirit of the Jaguar*. This was our most ambitious undertaking yet. It introduced a new element to our interpretation, that of *smelly boards* (top right) where visitors are invited to sample a range of synthetic scents from the rainforest, including Jaguar urine! This along with the rest of the *Spirit of the Jaguar* interpretation, examples of which are shown on this page, proved enormously popular with the visitors. Our efforts were recognised by a commendation in the *Interpret Britain 2001 Awards*. Our life-size bronze baby elephant was also delivered and installed as part of the new Elephant interpretation. This competed strongly with the bronze Komodo as the Zoo's most popular photo-point throughout the year. The higher polish on the elephant's back proved it to be the winner! In the rest of the Zoo we continued to upgrade interpretation generally, with virtually none of the older style signage now left.

Interpretation Officer

We decided that the interpretation work had grown in size and complexity such that it really needed an individual dedicated to its co-ordination. So, at the end of the year we appointed our first Interpretation Officer, Rachel White, who will liaise closely with other Divisions in helping to maintain our standards of excellence in this area.

The Presenters continued to expand their role with a new range of public talks, reaching an estimated 411,426 visitors (43% of the total visitation). We recruited two new Presenters, Jane Fodor and Sarah Bazely to help

cope with the extra workload and the increasing audiences. New sound systems were installed and used to great effect at the Lions and Elephants.

We did lose some staff during the year – Teachers, Dominic Briffa and Jason Sheridan, both left for jobs in mainstream teaching. Myfanwy Griffiths, one of our Presenters, took up a post as a Lecturer in an agricultural college. We wish them all well in their new positions.



Kenyan Conference

Lead Presenter Matt Lewis and myself attended the African Zoo and Reserve Educators' Conference in Kenya. We both gave very well-received papers on how to build up an education/presentation programme using local resources, however meagre these might be. I also took part in the 3rd International Zoo Marketing Conference in Tenerife, offering an educational perspective.

Francis Maina, International Zoo Educators (IZE) Africa Representative, was our guest here for a week. During this time he researched ways in which he could diversify and improve his education programmes at the *William Holden Wildlife Foundation* in Kenya. This, we hope, is the start of an ongoing relationship with this leading conservation organisation.

Teaching figures bore up well against the previous year, particularly after losing so many bookings during the FMD closure. There were 15,447 directly taught pupils, (9.9% lower than 2000), with 78,516 educational visits overall. Members of education staff are experienced in using the Microsoft PowerPoint computer presentation software so we ran a series of classes for other staff in the Zoo so they could build their own presentations. This kind of internal training is a new direction for us and one upon which we would like to build.



Stephen McKeown, Head of Education

Jaguar



As Sir William Lyons toiled in the back streets of Blackpool in the 1930s designing his fabulous new motor car, he could not know he was also about to bring forth one of the most famous brand names ever and an enduring piece of British Heritage.

He wanted his sleek new invention to become a byword for speed, grace and power, but was rather too busy with the actual engineering to dream up a name himself. He did, however, suggest something borrowed from the animal kingdom.

A list was duly drawn up; perhaps the new automobile might be the *Leopard* or *Gazelle* or even the *Panther*...?

But one word leaped from the page. "I immediately pounced on that particular name," explained Sir William. It was an animal to instantly summon up an impression of controlled strength, and well bred poise. Only this creature's image precisely balanced a feeling of subdued fury with a rare and exotic elegance. The decision was made: fates were sealed.

The most famous British sports car of all time would be... the Jaguar.

Almost as celebrated as the name is the distinctive 'leaping jaguar' mascot.

Sir William dismissed the first version, designed by an accessory firm in 1937, as looking like a 'scalded cat'.

The celebrated automobile artist, F Gordon Crosby, developed a remodelled 'leaper' a little later.

The Leaper has now, of course, become a familiar and well-loved icon outside dealerships throughout the world.



Sir William's motor car company based in Blackpool, was originally called Swallow Sidecars.

At first, it was only the one particular model, the SS Jaguar, that was named after the big cat.



However, in the following decades, the intensity and style of this most British of cars seemed to be so effectively underlined by its feline namesake, that the name was eagerly adopted by the company as a whole.

As Britain emerged victorious from World War II, the Jaguar Motor Car Company was finally born.



JAGUAR

THE ART of PERFORMANCE



Following a particularly difficult start to 2001, it is very gratifying indeed to be able to report many success stories from the Visitor Services Division. As well as having achieved an excellent year in terms of trading, we also managed to improve and upgrade existing visitor facilities. We created and fitted out the new rustic-style *Arara Picnic Lodge* in the *Forest Zone*, and began our important *Rainbuster Route* plan with a thatched canopy over *Monkey Islands* railway station, proving very successful.

This was certainly a year for endorsing new ideas and bringing exciting new ventures to the Zoo. At Easter we ran a very successful *Easter Egg Hunt* with a special visit from the Easter Bunny, in the shape of our Zoo Director! Christmas 2001 saw the introduction of the new *Magical Santa Trail*, which attracted over 10,000 pre-booked and pre-paid visitors in thirteen evenings.

We began staff training schemes, including a day-long induction course for all new seasonal staff, and on-job skills training courses for all Amenities and Gardens staff members. Staff across the division also enjoyed learning new customer care skills, which we plan to develop further in 2002. All of these initiatives were strongly supported by new 'reader friendly' documentation and training aids.

Retail Shops

The six weeks of closure in February and March did not dent our retail sales figures. It was our best ever year, with total sales 5.5% higher than in 2000. This really is an excellent achievement by Alan Jones and the team. Staff will have to work hard to exceed it in the future! Our new lines in baby wear were popular best sellers of 2001, almost equalling the range of Jaguar merchandise. We hope to extend these lines as well as launching new ranges of Red Panda and Rhino toys to match the Zoo's developments. Stockroom stalwart, Wendy Locker left us just before Christmas after 15 years on the permanent staff. We wish her well with her fishing venture!

Catering

Sue Clews' Catering team beat their sales budget, and were only slightly behind the record 2000. The new *Ark Restaurant* continued to be a big success with the visitors - particularly the burger bar, which took £335,000 over the year.

Events

Jane Lawson's Events Office had another busy year with wedding bookings proving popular since we became licensed for *Civil Weddings* at the end of 2000. We had six wedding ceremonies and receptions in the Oakfield House, and received extremely positive feedback. There is no doubt at all that this has generated excellent publicity and has increased interest from other brides-to-be. Once again, we had record bookings for



Civil Wedding Ceremony in the Oakfield Boardroom

Safari Barbecues and *Picnic Evenings* in the summer. The new *Midsummer Cycle Ride*, offering the chance to bike around the Zoo on June 21st proved very popular in its first year, and we will be repeating it. Our new *Safari Suite* meeting room, and the redecoration of the Oakfield House have helped encourage new business bookings for interesting meeting venues.

Amenities and Gardens

For ten months of the year, the team were responsible for running our vital biosecurity precautions at the Gatehouse, cheerfully power-hosing every vehicle that entered, no matter what the weather. At the main entrance, they made sure that cars and visitors crossed the disinfectant soaked matting, helping the process along with immense good humour.

With two successful years under its belt, the Amenities and Gardens Department is now operating

confidently, having found the correct balance between gardening and facility management. Led by Chris Williams, the team upgraded car parks, toilet facilities and all-important visitor information signage. We have improved our access facilities with a portable lift for toilets and adult changing mats. We have moved the delivery point for the four-wheel electric scooters to the main entrance. The special *signing weekends* were a great success. Working closely with the Botany and Horticulture team, the Department won two *Chester in Bloom* awards as well as being part of the City of Chester's success in *Britain in Bloom*. Railway and boat operations added much to visitor enjoyment, and the illuminated evening trains provided their own special magic, delivering excited young guests to Santa's amazing Grotto close to Jubilee Square Station.

The Visitor Services Division has now established itself as a key player in the Zoo's successful operations. Moving forward into 2002, we aim to continue to deliver excellent customer care and to remain focussed on improving the standards for all visitor facilities and special events. Many thanks to all the staff who have helped make this challenging year so successful.

Liz Child, Head of Visitor Services



Retail Sales Manager, Alan Jones with giant jaguar soft toy in the Ark Shop



New display to sell Civil weddings



Christmas lights



Night time magic on the Zoofari Railway



The baby elephant statue gives great photo opportunities



Not even the snow fall stopped the important progress on *Spirit of the Jaguar*

The ongoing redevelopment of the Zoo continued in 2001 despite the *stop-go* situation caused by the outbreak of Foot and Mouth disease in the early Spring. We rescheduled our capital programme because of the uncertainty of funding for the rest of the year. We kept going with contracts that had already started and continued with new project planning. The first phase of the major Rhinoceros redevelopment and *Dragons in Danger* were the major casualties. Both have been deferred to 2002.

Spirit of the Jaguar



The wooden *Arara Picnic Lodge*

Happily, we finished the magnificent *Spirit of the Jaguar*. This is a huge credit to the design team, comprising the external consultants, led by McCormick Architecture of Chester, and our in-house team. We also finished *Sealion Beach*, the *Arara Picnic Lodge* to take the place of the old and tired *Indoor Picnic Area* and started the large Hyacinthine Macaw aviary, which incorporates its own trees. Other substantial projects completed were the *Grow Zone*, giving our first public

access to the greenhouses, a new roof for the catering stores and safe pedestrian access through the staff car park

Forest Zone

We began the transformation of the old *Indoor Picnic Area* into a home for the Buffy-headed Capuchin monkeys, with a new canal-side outdoor paddock. This uses the existing structure and will form part of the new *Forest Zone*. We started work on the long awaited *Animal Health Centre*, the new base for our veterinary team in East Zoo. This is being built on part of the former car park – between *Spirit of the Jaguar* and the Cedar House building.

In 2002 we will start the Rhino development, *Marmot Mania*, *Dragons in Danger* and the new *Red Panda* exhibit in East Zoo, close to the Lodge and back to back with the crane aviary.

We said goodbye to three core members of the Division – Neil Spooner, our Projects Liaison Manager; Barbara Williams, Estates Division Secretary and Keith Wood, our Architectural Technician. We wish them all well.



Neat gabion work saved the foundations of the important bridge over the canal

As the Zoo gets bigger, there are increasing demands to ensure that everything works and is efficiently maintained. Ray Morrison, the indefatigable Maintenance Manager and his team have done an excellent job this year. As well as completing 1680 general maintenance requests in 2001, their achievements include:

- Finishing all the statutory and planned preventative maintenance programmes.
- Starting an improved enclosure inspection regime.
- Making and fitting new doors and decking throughout *Monkey Islands*.
- Fabricating and fitting new slides in the Chimpanzee and Orang utan quarters.
- Redecorating and fitting new lights on the ground floor of the Oakfield
- Fitting an extensive lighting scheme for the *Magical Santa Trail* Christmas promotion.
- Pedestrian access lighting in the staff car park.



The large *Forest Zone* aviary for Hyacinthine Macaws incorporates trees inside

As part of a recent restructuring, health and safety management is now an Estates responsibility. John Winward has been appointed Safety and Environmental Manager and he has provided a brief update in his own report on page 18.

First Cash Dispenser

Security has had a productive year. In May 2001 we installed our first secure cash dispenser in the *Oasis Cafeteria*. Visitors withdrew over £115,000, to our great benefit! We have continued with fitting new alarms and locks in new and existing buildings, giving us more complete protection combined with smooth, efficient access to all authorised users. Security has taken on the management of the maintenance of the Zoo's residential houses and flats and monitoring tenant movements.



It has been both a demanding and disruptive year for the Division. We have, as a team, made real progress with new and exciting projects and continue to upgrade and maintain the Zoo to the benefit of staff, visitors and animals.

Steve O'Brien, Estate Engineer

The audited accounts of the Society are presented on pages 29 – 36 of this Annual Report. The accounts are explained on page 26, with a more formal commentary in the *Council Report* on pages 27 – 8.

The Division has had another busy year, with Foot and Mouth Disease increasing our workload (as in all other departments of the zoo) due to the general disruption and to preparing special contingency plans. We are moving towards the future with our technology. We installed a cash machine in the *Oasis Cafeteria* (which dispensed over £115,000 in the year), New tills at the entrance, *Ark Shop* and *Ark Restaurant* allowed a second currency, so we benefited from a well publicised decision to accept the new *Euro* currency as soon as it was issued.

The Admissions team has grown substantially in the second half of the year with the introduction of our *Gift Aiders*. Their role is to get visitors to complete the *Gift Aid* tax declaration. This has the effect of diverting some income tax/capital gains tax paid by

our visitors from the Inland Revenue to the Zoo. This scheme is at no cost whatsoever to the donor and is proving very popular indeed.

We welcomed Sylvia Morris to our payroll team after Elaine Mulreay left us to look after her growing family. She and Barbara Stewart have dealt very capably with the extra demands placed on the department, both in implementing the Society's pay restructuring exercise and the ever-increasing complexity of employment legislation

We extend our very best wishes to Sue Davies, who retired in October after 25 years in Wages and Accounts office. *Thanks Sue for all your hard work over the years.* A very warm welcome to Jo Dudley, newly appointed as Accounts Co-ordinator in Sue's place

Alan Sykes, *Financial Controller and Company Secretary*



Julie Bird with our first Euro note!

INFORMATION TECHNOLOGY

Information Technology (IT) in the Zoo has grown steadily in the last year. The computer count has increased from 52 to 83 with over 90 e-mail users. The membership database has collected over £300,000 from the direct debit scheme. Richard De Riso joined the Zoo as Network Technician and has been responsible for installation of most of the new computers. There were over 1000 requests for maintenance and support last year.

The centralised-computing model has been well received. This provides access to *Microsoft Office 2000* from non-cabled zoo sites via the telephone system, and at staff homes via a simple installation on a PC. The majority of zoo users are now working to the central server in the *Oakfield*. DSL modem links have proved to be robust, with only one brief failure due to an electrical storm. The new colour laser printer is used frequently and has proved useful in developing the zoo business. We have bought a portable PC projector to enable presentations to be given by guests and staff using *Microsoft PowerPoint*, or similar software.

The virus shield has proved very effective in preventing virus outbreaks. The staff are advised that our software licence covers any staff member's home PC and are encouraged to keep their virus shield up to date at all times.

Some members of staff have already benefited from computer training. We plan to extend this. We will use the new staff training appraisal system to assess requirements.

Cabling links at 100Mb per second bandwidth have been planned for the new Cedar House administration building, linking it to the principal sites in East Zoo. This will bring even faster and better IT services.

Philip Morris, *Information Technology Manager*



Video Conference link to France for Zoo Director and Head of Education

JUNIOR MEMBERS

Junior Membership continues to go from strength to strength with numbers now over 5,000 - around a third of total Society Membership. Broadly split into two categories, the *under eights* and *over eights*, Junior



Photograph: Colin Baxter

Owl encounter at the Chestnut Centre Otter, Owl and Wildlife Park, Chapel-en-le-Frith, Derbyshire

Membership offers something for all ages. The free entry option is widely enjoyed by the younger group at a time which suits them best. The enthusiastic group of over eights are offered the additional opportunity to join in with monthly events, usually held on Saturdays.

During 2001, we went to Farm World, Cholmondeley Castle, Hilbre Island, Hawkstone Park and Follies, Manchester Museum and Martin Mere, as well as completing a 12 km nature walk on the Sandstone Trail. Events within the Zoo included regulars such as the Contact Session, Tracks and Signs, Summer barbecue incorporating a *Rainforest Roadshow*, the Christmas Party and the ever popular *Day with a Keeper*. I offer a big thank you to all those who helped with these monthly events!

An ever-increasing number of 'graduating' Juniors are continuing their interest into adult Membership. This shows the value of encouraging our youngsters.

Penny Rudd, *Junior Club Organiser*



The impact of closure meant dramatic cost cutting. Recovery required visitors! We slimmed advertising schedules, but pushed vigorously ahead with promotions (where the costs were labour alone or where our money had been already spent). Paul Lindop, our talented Building and Civil Engineering Foreman spent three weeks off-site rebuilding *Noah's Ark*, lovingly cladding her in cedar. We took the *Ark* wherever we could to fill the gaps from the Cheshire and Nantwich Shows, and worked the Bache *Safeway* and *Cheshire Oaks* car parks. We had weekend leafleting trips to Lancashire, Yorkshire, the Potteries and the Welsh Coast. Supermarkets, libraries and cinemas helped greatly with poster and leaflet distribution. Volunteer Disability Adviser, Mike Elkerton was a tower of strength on these promotional days. The 14th edition of the profit-making *Chester Zoo News* - bottom left - was a great success, with print and make up by *The Chester Chronicle*.



Jaguars

We used Jaguars as the advertising theme as soon as we could photograph *Carlos* and *Ebony*. The strong and simple advertising message, backed by enthusiastic recommendations and the return visit incentive brought third quarter figures back to expectations. All literature now has *Gift Aid* details and the *Queen's Award* logo. The new Guide Book, (next bottom left) bigger than ever, was well timed, and won its category at the 3rd *International Marketing Conference*. It sells well on the web.



We now use digital imaging techniques and digital cameras as part of daily routine. The web site moves steadily onwards with 200,000 unique visitors in the year. We get up to 50 *feedback* e-mails daily. Web cameras boosted the appeal of the *Granada Animal Watch* thanks to IT Manager, Phil Morris. The long awaited Tourist Information Centre at Cheshire Oaks opened. Its close neighbour, the *Roadchef* Chester Motorway Service Area at Hapsford on the M 56,



We have developed a new database with invaluable support from IT Manager, Philip Morris and consultant Roy Jones. Membership now stands at an all time record of 17,365 across all the categories. The Membership team of Maureen Allsopp and Susan Watson have made a huge success of introducing the *Direct Debit* system, with half of renewing members using this option. This helps reduce turnover in membership, and avoids the huge administrative burden of getting new Standing Order instructions signed when subscriptions change.

We have redesigned the layout of the Membership Form, with help from Lynsey Jones, to improve the *Gift Aid* take up. This has worked very well indeed. On-line Membership is now available via our web site, with a secure credit card facility. Maureen Allsopp has worked hard through the year to secure an even more exciting programme of talks for 2002. We conducted a Members' Survey through a self

now stocks our Jaguar soft toys as well as Guide Books. We continue to support the *Association of Leading Visitor Attractions (ALVA)* and helped the *North West Tourist Board* allocate promotional recovery funds after Foot and Mouth disease. We have added Ellesmere Port and Neston and Shropshire to the important local tourist consortia we gratefully support.



Photograph: Granada TV

Gemma Gofton was the main presenter for Granada TV's *Animal Watch* series

Media relations is not all cuddly baby animals. The tragic death of Richard Hughes, the Foot and Mouth Disease related closure, management changes and Elephant *Kumara's* eventual fate, all meant that the Press Office did not always have pleasant news to tell. We coped with the floods of calls - over 250 in one day - to the best of our efforts.

Happy and Readable

Pat Cade's *Zoo Life* (see left in sideband) gets bigger and better, with a happy and readable style - the envy of many organisations who use agencies. We will miss Pat's outstanding contributions to the Zoo's public image when she retires in Spring 2002. We contributed to the first edition of *ZOOstoday* from the *Independent Zoo Enthusiasts Society* which sold well. We helped in the production of a CD ROM compilation for the World Association of Zoos and Aquariums (WAZA)

called *Marketing Zoos in the 21st Century* (right).



We have had more TV cameras than ever covering Zoo stories. Granada's *Animal Watch* was first, but Tigress Production's *The Birthday Zoo*, being screened on *Animal Planet* via satellite as you read this, will have been worth waiting for. The staff loved the preview. We are pleased that a second series is being considered! This is probably the best TV coverage to-date on the Zoo.

Chris Vere, Marketing Manager

MEMBERSHIP AND ADOPTIONS

completion questionnaire in *Chester Zoo Life*, and backed it by a telephone sample. We achieved useful dialogue with members and received many valuable ideas. The recommendations will be incorporated in the 2002 programme and will be reported in the March 2002 edition of *Chester Zoo Life*. The Members' *Bats and Birds* expedition to Mauritius and Rodrigues Island in the Spring of 2002 has been fully subscribed. Keeper James Andrewes will be the leader.

Adoptions

On-line Adoption is now also available on our web site. Thanks to this and a special promotion with *Boots the Chemist*, pre-Christmas adoptions levels grew by approximately 40% and stand at record levels. Pauline McKee in the Adoptions Office responded to the extra administrative demands in her usual magnificent and tireless fashion!

John Regan, Development Manager

Asian Elephant in Crisis Project

Our current fundraising campaign stands in the region of £400,000 (funds banked and securely pledged). We must make particular mention of the Bank of Scotland's enormously generous pledge of £38,000 pa for a period of three years. Robert Mee (Divisional Chief Executive) has also agreed to join our Development Board. There are too many other kind supporters to name every one, but in particular we would like to mention Baroness Rendell and David McLean. A calendar of events in London, mainly in the Palace of Westminster, have allowed us to meet and talk to a large number of influential and prominent figures based in the capital.

One particularly exciting development is an *Anthology of Elephant Writings*. The profits will support the conservation campaign. This has attracted free contributions from a host of major names in the literary world. We are delighted that Sir Arthur C. Clarke CBE has already submitted an introduction. Other contributions include Stefanie Powers, Sir Anthony Sher KBE and Sir Ranulph Fiennes OBE. We are especially grateful to our group of 'author/editors' of the compilation: Dr Stephen Baxter, Garry Kilworth and Ian Watson

Dr Ashok Kumar MP has tabled an *Early Day Motion* in support of the campaign and has also offered to sponsor an adjournment debate in the House of Commons.

Thanks to businessman Anil Ruia, who is a good friend of the Society, our Director, Professor Gordon McGregor Reid and Development Board Chairman, Neville Chamberlain, made an investigative trip to Assam with a view to setting up an outreach project in support of our elephant welfare and conservation goals.

Gift Aid on admissions

We have gained £149,000 through this initiative which was jointly developed by Finance and Administration, Visitor Services, and the Development Office. Development Officer, Lynsey Jones, who joined us in February, took the lead in this.

Chinese Biodiversity Project

John Regan, Development Manager visited Chengdu in October with the support of the Manchester Chamber of Commerce and Industry (MCCI) and the Department of Trade and Industry (DTI). Our relationship with the Chengdu Research Base for Giant Panda Breeding developed significantly as a result. He subsequently consulted the Chinese Consul General in Manchester and the business community and received positive indications for increased collaboration. Deputy Prime Minister, The Rt. Hon. John Prescott MP, paid a private visit to the Zoo over the Christmas period and confirmed his personal support for this initiative.

Legacies

Several bequests were received during the year, including a £10,000 sum designated to the Elephant project.

There are now 34 members of the *Legacy Pledge Club*, run by Hazel Russell. Pledgers were invited to a number of events throughout the year, including the official opening of *Spirit of the Jaguar* and the *Roman Garden*. We have produced a comprehensive brochure outlining the benefits joining the *Legacy Pledge Club*. This will be mailed out to prospective members during 2002.

Please note that all a supporter has to do to receive all the benefits of the club, is simply to let us know in writing that they have mentioned the Society in their will. It is not necessary to tell us anything further.

Donations, Grants, Sponsorships and Bequests

	£
Bank of Scotland	38,461
David McLean Ltd	20,000
Apollo Leisure (<i>Doctor Dolittle</i> stage production)	15,000
<i>Animal Magic</i> Web Site	11,000
Animal Health Centre Appeal	10,981
BNFL	10,000
Chester Race Company	10,000
MBNA	10,000
Ronald and Kathleen Pryor Charity	10,000
Baroness Rendell	10,000
Annie Miller (deceased)	8,600
Boddy Estate	6,000
Brian Livingstone - Wild Dogs	5,128
Birchall Estate	5,000
Marks & Spencer Financial Services	4,837
Capital Bank	3,205
Photo Competition Raffle	1,333
Rylance Estate	1,000
Peter Rickitt	3,212
Lord Grantchester	1,000
Simon Chantler	500
Joe Dwek	500
James Herbert	500
Donations over the period of Foot and Mouth	11,643
Sundry	20,899
TOTAL	£218,799

Regional Biodiversity Centre

We have secured a £250,000 project development grant from the *North West Development Agency* to take this exciting and imaginative project forward to a full design stage in 2002. As indicated in *2020 Vision*, it will involve extensive use of our wider estate.



Project Development Manager, Lindsay Sharples tours the wider estate with Estate Engineer Steve O'Brien



Chairman John Makinson thanks Dr Alan Rabinowitz

Jaguar Cars

The official opening of *Spirit of the Jaguar* by Stefanie Powers was a great success. Dr Alan Rabinowitz, Director of Conservation at the *Wildlife Conservation Society* (WCS), New York, gave an inspired keynote lecture on the previous evening. WCS and the Society have signed an agreement to forward a joint proposal to Jaguar Cars in due course. Another guest of honour was Professor Yolanda Matromoros, a rainforest expert and Director of *Zoo Nacional Simon Bolivar*, Costa Rica.

John Regan, Development Manager

Incoming Resources

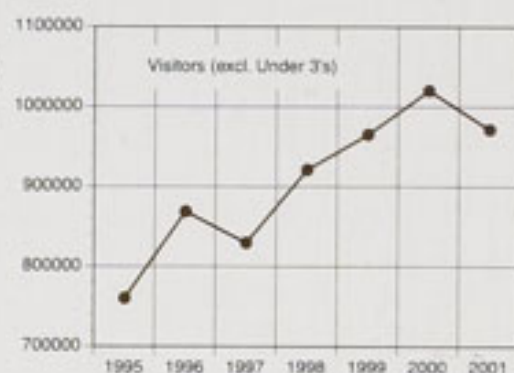
The most significant factor affecting our financial performance in 2001 was the impact of the foot and mouth disease (FMD) epidemic, which is estimated to have cost the Society approximately £1,200,000 in lost visitor-related income.

However, much of this was recovered due to the very strong visitation in the second half year. The total incoming resources of the Society and its subsidiary company in 2001, at £10,913,000, were just 4.1% lower than in 2000, nearly 91% of which came from the visitors.

Visitor Numbers

In 2000 visitor numbers had reached their highest levels since 1972. 2001 was set to exceed this until the Zoo closed to visitors for 40 days, as a precaution against FMD. While the Zoo reopened in time for the vital Easter trading, attendance was sluggish until the start of the school summer holidays. About 60,000 visits were lost during the period of closure, and a further 70,000 during April, May and June. Since then strong visitor numbers enabled us to claw back most of the shortfall.

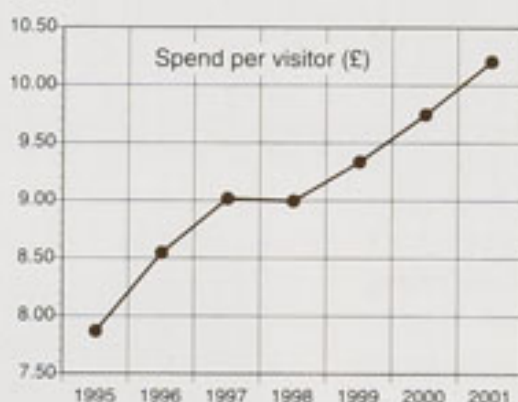
Overall there were 972,000 visitors in 2001 – 4.8% below 2000. If we include the under 3's, then our total Zoo visitation figure was 1,060,000.



Spend per visitor

The average total spend per visitor, excl VAT, was £10.21; up 4.7%.

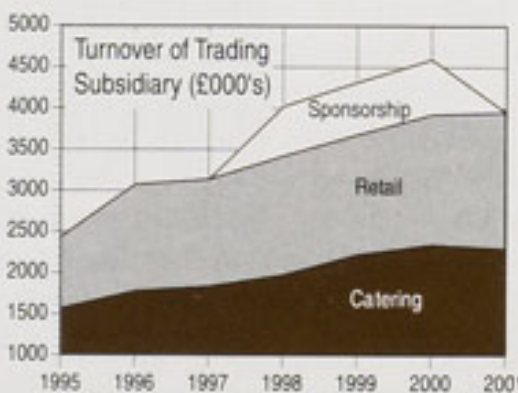
This year, for the first time, the Zoo has benefited from the Inland Revenue's *Gift Aid* scheme. As a wildlife conservation charity, we can recover income tax from the admission price paid by UK tax payers. £149,000 has been recovered since we started to claim it in August. We are confident that this will be doubled in a full year.



Turnover of 'activities for generating funds - Trading by subsidiary company'

At £3,960,000 these revenues were 0.7% higher than 2000.

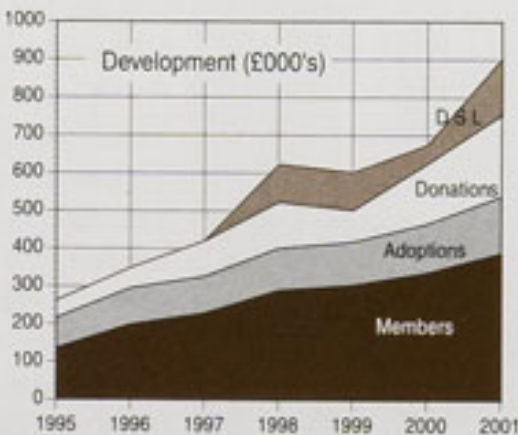
In the three years, 1998 to 2000, the Society benefited greatly from the generous sponsorship of over £1.9 million by Jaguar Cars Ltd. That phase of support has now ceased, but the Society continues to maintain a strong, mutually beneficial relationship with the company.



To avoid the profits of these trading activities being taxed, they are accounted for through a separate limited company, which then donates all its profits to the charity.

Donations, legacies and similar incoming resources

The Society's other significant source of funds is the development activity, with a further 21% increase in income from memberships, adoptions and donations. The contributions which have been received over the past four years from Deep Sea Leisure Plc. (DSL) are now complete.



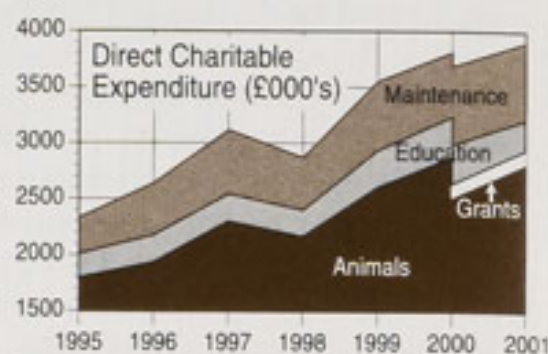
This year, for the first time, a columnar presentation has been used in the Statement of Financial Activities to highlight the increasing significance of restricted income, where the use of the funds is legally restricted, within the overall charitable objects of the Society, to that specified by the donor. At the year end, £223,000 was set aside in this way.

Resources Expended

All costs and overheads are analysed to the activity they relate to. While the methods of allocation may be subjective, they are applied consistently, both between activities and over time. This is important in order to fairly state both charitable expenditure and the cost of generating funds.

Direct Charitable Expenditure

The direct charitable activities of the Society - principally animal conservation and education - continued to expand, up 6.0% this year. Grants paid out have been separated from animal welfare spend for the first time this year. The support costs associated with these activities is shown separately, as required by the revised guidance under which these figures have been prepared. This explains the step reduction in the graph in the year 2000.



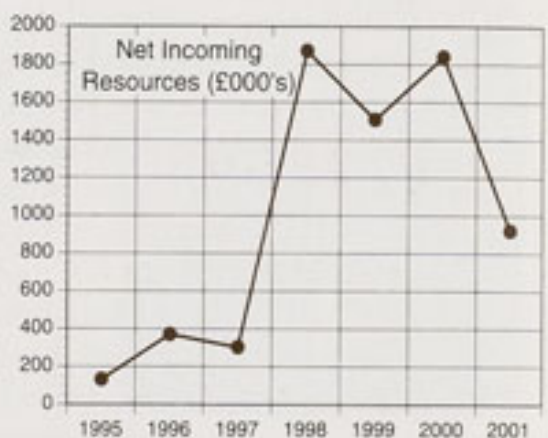
Other Expenditure

Visitor-related expenditure, principally amenity services, keeping the zoo clean and tidy, was £1,237,000. As mentioned above, support costs relating both to this and the direct charitable spend, are shown separately, £684,000 for the year. The cost of management and administration of the Society was £644,000.

Much of the fundraising and publicity costs relate to advertising and promotional activity to attract visitors. The rest relates to fundraising and to the raising of public awareness about the Zoo and its charitable mission.

Net Incoming Resources

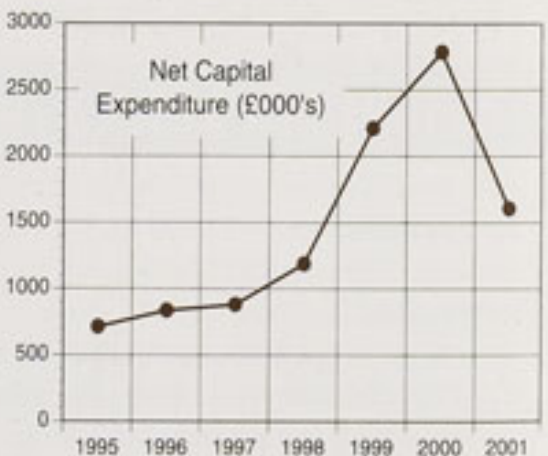
The net incoming resources were £925,000 for the year. The reduction compared to 2000 relates both to the fall in the number of visitors due to FMD and the completion of the sponsorship income. Total funds employed increased to £8,860,000, after deducting a prior year adjustment of £164,000 in respect of accumulated depreciation of freehold buildings.



As a charity, there is no inherent value to the Society in producing large net incoming resources, other than to strengthen its reserves or to provide the means for future investment. So long as the increase in incoming resources is seen to be sustainable, the Society chooses to expand the level of its ongoing charitable operations instead.

Capital Expenditure

Net investments in capital developments during 2001 were £1,612,000. These included completion of the *Spirit of the Jaguar* exhibit and the new *Cedar House* offices. Capital spend fell in the year, over £800,000 of new projects being deferred until the Society's financial status, post FMD, was assured.



Conclusion

FMD dominated 2001! It speaks volumes for the robustness of the Society's staff and finances that it has shaken off the effects so completely.

In planning for 2001, we budgeted for the year to be cash neutral; for the bank position at the year end to be similar to the end of 2000. Despite FMD, we generated sufficient income on our revenue activities to achieve that goal. Because of the deferment of capital spending, the Society is starting 2002 with strengthened reserves, and £1,092,000 higher cash and bank balances than 12 months ago.

Alan Sykes, Financial Controller

Trustees and Advisers for the year ended 31 December 2001**Trustees elected by the Members**

John Makinson	(Chairman from 25th May 2001)
Keith Maybury	(Chairman to 25th May 2001)
John Brown	(Vice Chairman from 27th July 2001)
Brian Coles	(Vice Chairman to 27th July 2001)
Dr David Cooke	(Retired 19th May 2001)
Karen Davies	
Kathryn Edwards	
Prof Brian Gardiner	
Brian Livingstone	
Derek Lyon	
Chris Mahon	
Graham Pollard	
Alan Sharples	
David Wall	
Alan Watson	(Elected 19th May 2001)
Prof Peter Wheeler	

Trustees co-opted by Council

Leaford Patrick	(Until 28th December 2001)
Alan Watson	(Until 19th May 2001)
Tony Williams	(Co-opted 27th July 2001)

Company Secretary

Alan Sykes

Registered Office

Oakfield House, Zoological Gardens, Caughall Road, Upton by Chester, Chester, CH2 1LH

Auditors

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

SolicitorsMace and Jones, Drury House, 19 Water Street, Liverpool, L2 0RP
Walker, Smith and Way, 26 Nicholas Street, Chester, CH1 2PQ**Bank**

Barclays Bank PLC, PO Box 230, 15-33 Moorfields, Liverpool, L69 2RU.

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.

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

Investment powers are limited to those available under charity legislation. 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.

The Council

The Council, as charity trustees, and as 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. Council members are elected by the Members of the Society at the Annual General Meeting. They may also be co-opted by Council to hold office for a period not exceeding 15 months. Council holds 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. The members of Council, and the Council Committee structure at 31 December 2001, are indicated in the table (bottom left).

Financial Report and Analysis

The financial statements this year have been produced in the format prescribed by the Charity Commission's revised *Statement of Recommended Practice* ('SORP 2000'). The figures for the year 2000 have been restated on a comparable basis. In addition to the revised headings under which the figures are analysed, the consolidation of Chester Zoo Enterprises Limited has been carried out on a line by line basis, resulting in substantial changes, particularly in the Statement of Financial Activities.

Visitor related activities in furtherance of the charity's objectives produced a surplus of £4,726,000 (2000: £4,877,000). These principally comprise visitor admissions to the Zoo, Monorail and Waterbus rides, and sales of guides. The net income of the trading subsidiary was £113,000 (2000: £887,000) from catering and retail activities, the reduction being due to the Jaguar Cars sponsorship being completed in 2000 (2000: £670,000) as the arrangement reached the end of its three year term. Donations, legacies and similar incoming resources, which includes members' subscriptions and animal adoptions increased to £907,000 (2000: £677,000).

Direct charitable expenditure, principally animal and plant conservation and animal welfare, increased to £3,804,000 (2000: £3,588,000). Grants payable in furtherance of the charity's objectives (principally for outreach activities) were £106,000 (2000: £106,000). Fund raising and publicity costs, which include the marketing and promotional advertising of the Zoo, were £618,000 (2000: £711,000).

Net incoming resources for the year were £925,000 (2000: £1,844,000) which increased the accumulated funds carried forward to £8,860,000 (2000: £7,935,000). (The accumulated funds brought forward have been restated due to a change in accounting policy, to introduce depreciation for freehold buildings, and have been reduced by £164,000 in respect of prior year's depreciation on these properties.)

The cash inflow from net incoming resources was £2,705,000 (2000: £2,379,000). This was utilised to fund net capital expenditure of £1,612,000 (2000: £2,827,000) causing a net increase in cash over the year of £1,092,000 (2000: decrease of £415,000).

The Zoo was closed to visitors, as a precaution against foot and mouth disease, for 6 weeks during the year. Whilst it was reopened in time for the important Easter trading period, visitor attendance, and hence income, was sluggish until the start of the school summer holidays. This is estimated to have cost the Society approximately £1,200,000 in lost visitor-related income. While some savings were achieved, principally in publicity costs, these were partly offset by increased costs of disinfection and similar anti-contamination measures. This is the principal reason why the net incoming resources in 2001 were lower than in 2000. Over £800,000 of capital projects designated for completion in 2001 were deferred by Council to protect the Society's resources.

Restricted and Designated Funds

Restricted income funds derive from the Animal Adoption Scheme and some 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 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.

The Council**Committees**

	Finance	Remuneration	Membership, Education and Events	Scientific, Animal Welfare and Conservation	Pension Fund††
John Makinson	●	Chair			●
John Brown		●	●		
Brian Coles	●			●	
Karen Davies			●		
Kathryn Edwards			●		
Prof Brian Gardiner					
Brian Livingstone				Chair	
Derek Lyon				●	●
Chris Mahon				●	
Keith Maybury					
Graham Pollard			Chair		
Alan Sharples	Chair	●			
David Wall	●				
Alan Watson	V.Chair				
Prof Peter Wheeler				V.Chair	
Tony Williams	●				

*As Trustees of The North of England Zoological Society Superannuation Fund Scheme, established to provide pension benefits to employees of the Society.

†Not formally a Committee of Council

Grant-making Policy

The Society makes institutional grants payable in furtherance of the charity's objects, for conservation outreach, research and animal welfare projects.

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. The Society's reserves at 31 December 2001, as defined above, were well within this level.

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 at the level 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.

Employees

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 meetings, matters likely to affect their interests. Information is also disseminated by means of an in-house newsletter, *Zoo Life* magazine and the Annual Report that 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.

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. 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.

Approved by Council and signed on its behalf:
Alan Sykes, Company Secretary
22 March 2002

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF THE NORTH OF ENGLAND ZOOLOGICAL SOCIETY

We have audited the financial statements which comprise the statement of financial activities, the statement of total recognised gains and losses, the balance sheets, the cash flow statement 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.

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 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 misstatement, 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 2001 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:
Chartered Accountants and Registered Auditors
Manchester
22 March 2002

CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES
(incorporating an income and expenditure account) for the year ended 31 December 2001

	Notes	2001 Unrestricted funds	2001 Restricted funds	2001 Total	2000 Total as restated (see accounting policies) £'000
		£'000	£'000	£'000	£'000
Incoming resources					
Incoming resources from operating activities					
- Activities in the furtherance of the charity's objects	2	5,963	-	5,963	6,019
- Activities for generating funds – trading by subsidiary company	3	3,960	-	3,960	4,601
Total incoming resources from operating activities		9,923	-	9,923	10,620
Donations, legacies and similar incoming resources	4	613	294	907	677
Investment income and other incoming resources	5	83	-	83	78
Total incoming resources		10,619	294	10,913	11,375
Resources expended					
Charitable expenditure					
- Costs of activities in furtherance of the charity's objects					
- Visitor related expenditure	2	1,237	-	1,237	1,142
- Direct charitable expenditure	6	3,615	189	3,804	3,588
		4,852	189	5,041	4,730
- Grants payable in furtherance of the charity's objects	7	106	-	106	106
- Support costs		684	-	684	625
- Cost of management and administration of the charity	8	644	-	644	510
Total Charitable expenditure		6,286	189	6,475	5,971
Costs of activities for generating funds					
- Trading by subsidiary company	3	2,895	-	2,895	2,849
- Fund raising and publicity		618	-	618	711
Total costs of activities for generating funds		3,513	-	3,513	3,560
Total resources expended		9,799	189	9,988	9,531
Net incoming resources / net movement of funds	9	820	105	925	1,844
Accumulated funds brought forward:					
As previously stated		7,981	118	8,099	6,248
Prior year adjustment		(164)	-	(164)	(157)
As restated		7,817	118	7,935	6,091
Accumulated funds carried forward		8,637	223	8,860	7,935

All activities are continuing.

CONSOLIDATED STATEMENT OF TOTAL RECOGNISED GAINS AND LOSSES
for the year ended 31 December 2001

Total recognised gains and losses relating to the year	820	105	925	1,844
Prior year adjustment (as explained in Accounting policies - Freehold properties; see page 32)	(164)	-	(164)	-
Total gains and losses recognised since last annual report	656	105	761	1,844
Resources applied for fixed assets for charity use				
Net movement of funds for the year (see above)	820	105	925	1,844
Resources used for net acquisitions for charity use (ie, the increase in the net book value of tangible fixed assets)	515	-	515	1,883
Net movement of funds available for future activities	305	105	410	(39)

BALANCE SHEETS AT 31 DECEMBER 2001

	Notes	Consolidated		Society	
		2001	2000 As restated (see accounting policies)	2001	2000 As restated (see accounting policies)
		£'000	£'000	£'000	£'000
Fixed assets					
Tangible assets	13	8,293	7,778	8,216	7,678
Investment in subsidiary company	3	-	-	-	-
		<u>8,293</u>	<u>7,778</u>	<u>8,216</u>	<u>7,678</u>
Current assets					
Stocks	14	262	274	56	49
Debtors	15	140	1,062	237	1,101
Cash at bank and in hand		1,087	48	1,087	48
		<u>1,489</u>	<u>1,384</u>	<u>1,380</u>	<u>1,198</u>
Creditors: amounts falling due within one year	16	<u>922</u>	<u>1,227</u>	<u>736</u>	<u>941</u>
Net current assets		<u>567</u>	<u>157</u>	<u>644</u>	<u>257</u>
Total assets less current liabilities		<u>8,860</u>	<u>7,935</u>	<u>8,860</u>	<u>7,935</u>
Net assets		<u>8,860</u>	<u>7,935</u>	<u>8,860</u>	<u>7,935</u>
Funds employed					
Income funds – restricted	17	<u>223</u>	<u>118</u>	<u>223</u>	<u>118</u>
Income funds – unrestricted					
Designated funds	17	2,987	2,847	2,987	2,847
Other charitable funds	17	5,650	4,970	5,650	4,970
		<u>8,637</u>	<u>7,817</u>	<u>8,637</u>	<u>7,817</u>
Total funds employed	17	<u>8,860</u>	<u>7,935</u>	<u>8,860</u>	<u>7,935</u>

The financial statements on pages 29 to 36 were approved by the Council on 22 March 2002 and signed on its behalf by:

*John Makinson,
Chairman of Council
22 March 2002*

*Alan Sharples,
Chairman of Finance Committee
22 March 2002*

CONSOLIDATED CASH FLOW STATEMENT FOR THE YEAR TO 31 DECEMBER 2001

	2001	2000	
		As restated (see accounting policies)	
	£'000	£'000	
Cash flow from net incoming resources			
Net incoming resources	925	1,844	
Net interest payable (receivable)	1	(33)	
(Profit) on sale of fixed assets	(5)	(1)	
Depreciation charges net of amortisation of capital grants	1,152	952	
Decrease/(increase) in stocks	12	(21)	
Decrease/(increase) in debtors	922	(22)	
(Decrease) in creditors due within 1 year	(302)	(340)	
	<u>2,705</u>	<u>2,379</u>	
 Returns on investment and servicing of finance			
Interest received	28	33	
Interest paid	(29)	-	
	<u>(1)</u>	<u>33</u>	
 Capital expenditure and financial investment			
Receipts from disposal of tangible fixed assets	76	1	
Payments to acquire tangible fixed assets	(1,688)	(2,828)	
	<u>(1,612)</u>	<u>(2,827)</u>	
 Increase/(decrease) in net cash for the year	<u>1,092</u>	<u>(415)</u>	
 Analysis of changes in net debt during the year			
	Balance at	Cash flow	Balance at
	1 January		31 December
	2001		2001
	£'000	£'000	£'000
Cash			
Bank overdraft	(235)	53	(182)
Cash at bank and in hand	48	1,039	1,087
	<u>(187)</u>	<u>1,092</u>	<u>905</u>
Total net cash	<u>(187)</u>	<u>1,092</u>	<u>905</u>

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 of the financial statements for the prior year, except for the adoption of the new Statement of Recommended Practice (SORP), 'Accounting and reporting by charities', published in October 2000, and the change in policy on depreciation referred to below.

Basis of preparation

The financial statements have been prepared in accordance with applicable accounting standards in the United Kingdom under the historical cost convention, with the SORP and the Charities Act 1993. The comparative figures have been re-presented in accordance with the SORP.

The consolidated statement of financial activities, consolidated statement of total recognised gains and losses, consolidated balance sheet and consolidated cash flow statement include the financial statements of the Society and its subsidiary undertaking made up to 31 December 2001 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

In previous years, no depreciation was provided on freehold land or property. However, in accordance with Financial Reporting Standard Number 15 (Tangible Fixed Assets), this policy has been changed for the year ended 31 December 2001. An exercise to identify the historical cost of the buildings (from the combined land and buildings total) has been undertaken in order that the accurate charge for the year may be ascertained. Depreciation is provided on freehold properties excluding land at 2% per annum.

An adjustment has been made in respect of the comparative figures shown in these financial statements for the prior year. In the balance sheets, tangible fixed assets and charitable funds have been reduced by £157,000 representing accumulated depreciation to 1 January 2000, and £7,000 representing the depreciation charge in 2000, to reflect accumulated depreciation of freehold properties from the date of their acquisition.

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). Members' subscriptions (including life memberships), animal adoptions, donations and legacies are accounted for on a received basis.

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 2003. The standard has an extended transitional period during which certain disclosures 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.

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)	
	Total 2001 £'000	Total As restated 2000 £'000
Turnover		
Visitor admissions	5,378	5,380
Monorail and boats	332	343
Guides and other	253	296
	<u>5,963</u>	<u>6,019</u>
Gross expenditure		
Visitor admissions	1,005	856
Monorail and boats	150	197
Guides and other	82	89
	<u>1,237</u>	<u>1,142</u>
Surplus on visitor related activities in the furtherance of the charity's objectives	<u>4,726</u>	<u>4,877</u>

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 to The North of England Zoological Society via Gift Aid. A summary of its trading results is shown below. Audited financial statements for the year ended 31 December 2001 will be filed with the Registrar of Companies. Its aggregate assets, liabilities and funds as the year end were £294,349, £294,249 and £100 respectively.

	Catering	Shops	2001	2000
	£'000	£'000	£'000	As restated £'000
Incoming resources				
Turnover	<u>2,299</u>	<u>1,661</u>	<u>3,960</u>	<u>4,601</u>
Resources expended				
Direct costs	1,774	1,043	2,817	2,754
Indirect costs - external overheads	72	6	78	95
Total external costs	<u>1,846</u>	<u>1,049</u>	<u>2,895</u>	<u>2,849</u>
	<u>453</u>	<u>612</u>	<u>1,065</u>	<u>1,752</u>
Management charges paid to parent company			541	484
Property rents paid to parent company			411	381
Amount transferred to the Society via Gift Aid			113	887
			<u>1,065</u>	<u>1,752</u>
Amount retained in subsidiary			<u>-</u>	<u>-</u>

4 Donations, legacies and similar incoming resources

	Unrestricted	Restricted	Total	Total
	funds	funds	2001	As restated 2000
	£'000	£'000	£'000	£'000
Members' subscriptions	389	-	389	337
Animal adoptions	-	150	150	129
Donations and legacies	74	144	218	161
Contributions from Deep Sea Leisure Plc	150	-	150	50
	<u>613</u>	<u>294</u>	<u>907</u>	<u>677</u>

Under the terms of an agreement dated 15 August 1996, between the Society and Deep Sea Leisure Plc, which has developed an aquarium at Ellesmere Port, the Society was to receive a total of £400,000, in annual payments from July 1998 to July 2001, for maintenance of goodwill and to avoid disruption of trade. During the year the Society received the final £150,000 in respect of that agreement.

5 Investment income and other incoming resources

	(All unrestricted)	
	Total 2001 £'000	Total As restated 2000 £'000
Investment income		
Interest received	28	33
Property rents received, external	50	44
	<u>78</u>	<u>77</u>
Other incoming resources - Profit on sale of property	<u>5</u>	<u>1</u>
	<u>83</u>	<u>78</u>

6 Direct charitable expenditure and support costs

	Unrestricted	Restricted	Total	Total
	funds	funds	2001	As restated
	£'000	£'000	£'000	£'000
Animal and plant conservation	2,669	167	2,836	2,531
Education	265	11	276	356
Property maintenance	681	11	692	701
	<u>3,615</u>	<u>189</u>	<u>3,804</u>	<u>3,588</u>

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 on page 50.

8 Cost of management and administration of the charity

	(All unrestricted)	
	2001	2000
	Total	Total as restated
	£'000	£'000
Interest payable	29	-
Bank commissions	55	86
Expenses associated with property rents received	56	47
Apportionment of management time and overhead cost	504	377
	<u>644</u>	<u>510</u>

9 Net movement in funds

	2001	2000
	£'000	As restated £'000
This is after charging/(crediting):		
Auditors' remuneration for:		
Audit (Society £9,000; 2000: £9,000)	13	13
Non-audit	-	4
Depreciation	1,152	952
Hire of equipment	61	49
Interest payable - bank	29	-
Interest receivable	(28)	(33)
Operating lease rentals - plant and equipment	9	8

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 £925,000 (2000: £1,844,000).

10 Trustees' remuneration

The members of Council, being charity trustees, received no remuneration (2000: £Nil). Five trustees (2000: three) were reimbursed during the year for travelling expenses necessarily incurred. The aggregate amount of these expenses was £2,834 (2000: £798).

Insurance costing £1,819 (2000: £2,205) 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

	2001	2000
	£'000	£'000
Wages and salaries	3,962	3,604
Social security costs	310	292
Other pension costs	323	222
	<u>4,595</u>	<u>4,118</u>

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.

	2001	2000
	Number	Number
From £50,001 to £60,000	-	1
From £60,001 to £70,000	1	1
	<u>1</u>	<u>2</u>

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

	2001	2001	2000	2000
	Permanent	Temporary	Permanent	Temporary
	Number	Number	Number	Number
Animals and plants	73	1	74	-
Education	8	2	10	2
Property maintenance	23	-	23	-
Visitor Services	25	15	24	16
Catering and shops	40	38	29	50
Fund raising and publicity	8	-	7	-
Administration	21	5	18	6
	<u>198</u>	<u>61</u>	<u>185</u>	<u>74</u>

12 Pensions

The Society operates a funded defined benefit pension scheme. Pension cost is determined by an independent qualified actuary using the projected unit method. The valuation of the scheme liabilities shown below has been based on the most recent full actuarial valuation at 31 December 1999, which has been updated to 31 December 2001.

The major assumptions used by the actuary at 31 December 2001 were:

Rate of increase in salaries	4.0% pa
Rate of increase in deferred pensions	2.5% pa
Rate of increase in pensions in payment	2.5% pa
Discount rate for valuing liabilities	6.0% pa
Inflation assumption	2.5% pa

The assets in the scheme and the expected long term rate of return at 31 December 2001 were

Asset class	£000	Rate of return (% pa)
Equities	3,253	7.45
Bonds	998	4.95
Cash	442	3.00
Net current assets	270	
Total market value of assets	4,963	
Value of the scheme liabilities at 31 December 2001	5,149	
Deficit in scheme at 31 December 2001	(186)	
Related deferred tax liability	-	
Net pension liability	(186)	

In addition to the cost of insuring the death benefits, the Society has agreed with the Scheme trustees to pay contributions of 11.0% of Scheme Salaries for members of the 3% scheme and 19.3% of Scheme Salaries for members of the 6% scheme, subject to review at the date of the next recertification of the MFR Schedule of Contributions (to take place before the end of December 2002).

If the pension liability was recognised in the financial statements at 31 December 2001, the group's net assets and total funds employed would be as follows:

Net assets and total funds employed excluding pension liability	£'000
Pension liability	(186)
Net assets and total funds employed including pension liability	8,674

At the year end £7,586 (2000: £13,237) pension contributions were prepaid.

13 Tangible fixed assets

	Freehold property £'000	Buildings and enclosures £'000	Monorail system £'000	Machinery and equipment £'000	Animals £'000	Total As restated £'000
Cost						
At 1 January 2001	643	8,965	1,522	1,119	1	12,250
Additions	17	1,644	-	77	-	1,738
Disposals and retirements	(71)	(192)	(1,522)	(193)	-	(1,978)
At 31 December 2001	589	10,417	-	1,003	1	12,010
Depreciation						
At 1 January 2001 as restated	164	2,241	1,496	571	-	4,472
Provided during year	7	915	26	204	-	1,152
Disposals and retirements	-	(192)	(1,522)	(193)	-	(1,907)
At 31 December 2001	171	2,964	-	582	-	3,717
Net book value						
At 31 December 2001	418	7,453	-	421	1	8,293
At 31 December 2000 as restated	479	6,724	26	548	1	7,778
The net book value at 31 December 2001 represents fixed assets used for:						
Charitable trading activities	-	892	-	71	-	963
Direct charitable purposes	-	5,201	-	189	1	5,391
Other purposes	418	1,360	-	161	-	1,939
	418	7,453	-	421	1	8,293

The Society holds no fixed assets for investment purposes.

Assets of the Monorail system 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 2001 was allocated:

Charitable trading activities	-	79	26	12	-	117
Direct charitable purposes	-	724	-	118	-	842
Other purposes	7	112	-	74	-	193
	7	915	26	204	-	1,152

Animal purchases of £1,803 (2000: £18,000) and sales of £Nil (2000: £Nil) have been treated as revenue transactions.

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

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 £'000	Depreciation £'000	Net book value £'000
At 1 January 2001	822	374	448
Additions	77	-	77
Disposals	(193)	(193)	-
Provided during year	-	181	(181)
At 31 December 2001	706	362	344

14 Stocks	Group		Society	
	2001 £'000	2000 £'000	2001 £'000	2000 £'000
Goods for resale	212	224	9	7
Consumables	50	50	47	42
	<u>262</u>	<u>274</u>	<u>56</u>	<u>49</u>

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

15 Debtors	Group		Society	
	2001 £'000	2000 £'000	2001 £'000	2000 £'000
Trade debtors	37	806	29	15
Amount owed by subsidiary undertaking	-	-	108	831
Other debtors	36	206	37	205
Prepayments and accrued income	67	50	63	50
	<u>140</u>	<u>1,062</u>	<u>237</u>	<u>1,101</u>

16 Creditors: amounts falling due within one year	Group		Society	
	2001 £'000	2000 £'000	2001 £'000	2000 £'000
Bank overdraft (secured)	182	235	154	223
Trade creditors	417	647	361	572
Other taxes and social security costs	148	253	68	73
Other creditors	22	6	22	6
Accruals	153	86	131	67
	<u>922</u>	<u>1,227</u>	<u>736</u>	<u>941</u>

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

17 Movement of funds	Balance at 1 January 2001	New funds	Funds utilised	Balance at 31 December 2001
	As restated £'000	£'000	£'000	£'000
Restricted income funds				
Animal adoptions scheme	-	150	150	-
Animal welfare projects	102	130	17	215
Education projects	16	3	11	8
Other projects	-	11	11	-
	<u>118</u>	<u>294</u>	<u>189</u>	<u>223</u>
Designated funds				
Animal welfare projects	2,130	859	1,218	1,771
Education projects	-	74	8	66
Other capital projects	717	1,088	655	1,150
	<u>2,847</u>	<u>2,021</u>	<u>1,881</u>	<u>2,987</u>
Other charitable funds	4,970	8,570	7,890	5,650
Total funds employed	<u>7,935</u>	<u>10,885</u>	<u>9,960</u>	<u>8,860</u>

18 Analysis of group net assets between funds	Tangible fixed assets	Net current assets	Total
	£'000	£'000	£'000
Restricted funds	-	223	223
Unrestricted funds	8,293	344	8,637
	<u>8,293</u>	<u>567</u>	<u>8,860</u>

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 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	
	2001 £'000	2000 £'000	2001 £'000	2000 £'000
Capital expenditure, contracted for but not provided in the financial statements	963	934	963	934
There is an annual commitment in respect of operating leases which expire				
- in one year or less	4	-	4	-
- within two to five years	4	8	4	8

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 (2000: Nil). 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.

Table 1 - SUMMARY - LIVESTOCK GENERAL HOLDINGS - TOTALS AS AT 31ST DECEMBER 2001
(These figures do not include the Education/Domestic species which are listed separately)

	Number of Species End 2001	(End 2000)	Number of Specimens End 2001	(End 2000)	Species Bred & Reared in 2001	(End 2000)	Specimens Bred & Reared in 2001	(End 2000)
Mammals	57	63	784	708	20	28	77	49
Birds	193	205	929	933	53	54	214	192
Reptiles	49	55	222	245	3	6	28	77
Amphibians	16	19	306	186	2	2	193	12
Fishes	113	124	2998	3054	34	41	not included	not included
Invertebrates	43	38	1837	1862	18	20	not included	not included
Total	471	504	7076	6988	130	151	512	330

Table 2 - SUMMARY - THREATENED SPECIES 2001 (IUCN AND MANAGED PROGRAMMES)

Threatened species	2001	2000	Threatened species bred to date	2001	2000
	227	221		169	156
% of all livestock	49%	44%	% of Threatened species bred	74%	71%

Table 3 - SUMMARY OF THREATENED SPECIES BY WORLD CONSERVATION UNION (IUCN) CATEGORY

	IUCN Red List	Managed Programmes	Total IUCN/Managed Programmes
MAMMALS	51	45	54
BIRDS	86	70	101
REPTILES	14	12	17
AMPHIBIANS	3	3	4
FISHES	27	19	33
INVERTEBRATES	3	17	18
TOTALS	184	166	227

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

EW	6	LRcd	9
CR	23	LRnt	44
EN	35	DD	4
VU	63		
		TOTAL	184

Table 5 - CITES SUMMARY

CITES	Category I	Category II	Total
Mammals	23	10	33
Birds	30	66	96
Reptiles	5	24	29
Amphibians	0	5	5
Fishes	2	0	2
Invertebrates	0	12	12
TOTAL	60	117	177

Table 6 - ABBREVIATED CODES USED

EW = Extinct in the wild	LRcd = Lower risk conservation dependent	EEP = European Endangered Species Programme
CR = Critically endangered	LRnt = Lower risk, near-threatened	ESB = European Stud Book
EN = Endangered	DD = Data deficient	JMSP = Joint Management of Species Programmes and Studbooks
VU = Vulnerable		ENP = English Nature Programme
^ = Not yet on IUCN list		ISB = Proposed International Studbook Programmes are in parentheses
* Not currently in a breeding pair or group	+ recent arrivals or not yet of breeding age	X = bred in indicated period
		N/A = Not applicable

Table 7 - SUMMARY OF TRANSFERS TO OTHER COLLECTIONS 2001

Mammals	15 species were sent to 15 collections	Reptiles	5 species were sent to 2 collections
Birds	38 species were sent to 21 collections	Aquarium	13 species were sent to 11 collections

REFERENCES CITED

- Farrell, M. & Bemment, N. (Eds) (2000). *Joint Management of Species Programmes Annual Report 2000*. Federation of Zoological Gardens of Great Britain and Ireland, London.
- IUCN (2000). *2000 IUCN Red List of Threatened Species*. Hilton-Taylor, C. (compiler). IUCN, Gland, Switzerland and Cambridge, UK. 61pp
- Hiddinga, B. & Brouwer, K. (Eds). (2001) *EEP Yearbook 1999/2000*. EAZA Executive Office, Amsterdam.

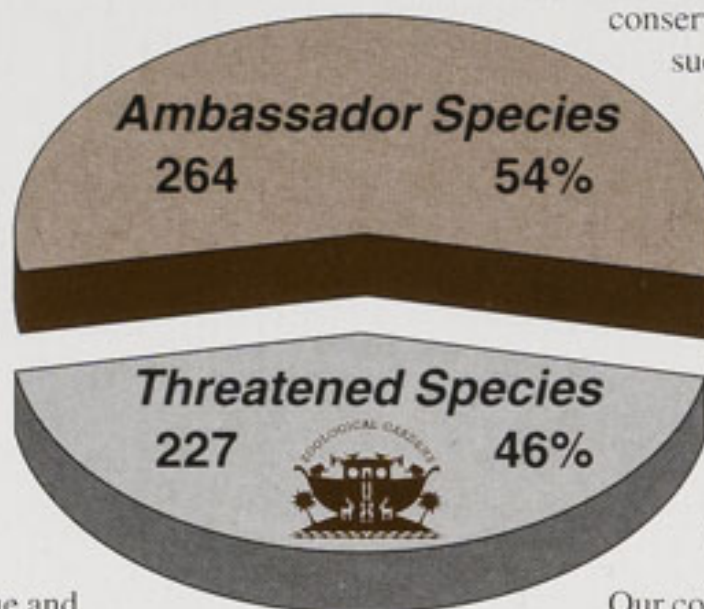
Threatened Species

'Threatened Species' means the total of World Conservation Union IUCN Red List species and/or those in Managed Programmes.

At Chester we aim to increase the proportion of threatened species and maximise our conservation breeding performance for these animals. As part of managed breeding programmes in any year we may be requested not to breed from certain animals or from some species.

'Ambassador species' are not simply for exhibition - in fact every species that we support has to 'justify' its inclusion in our collection planning on grounds of conservation, education value and relevance to field, husbandry and animal welfare programmes.

Our emphasis is on *Quality* rather than *Quantity*. Quality is



directly related to degree of threat and need for support. The word *quality* also, quite rightly, suggests the imperative to continuously examine and improve our standards of care.

Changes in threat status may occur as a result of direct conservation action or through better knowledge of the conservation status of species in the wild. As such, species in the collection previously considered threatened may lose that status and conversely, new species may be listed as threatened.

We have begun the process of listing threatened plants in this Report. This is an important progression for us, and recognises the interdependence of *flora* and *fauna*. However, the plants are not yet included in the overall statistics.

Our collection planning must respond to these changes and be sufficiently flexible to support those species under greatest threat, whilst also continuing our role to enthuse our visitors about the biodiversity and help them understand the threats now facing wildlife world-wide.

Conservation Breeding Programmes

Chester Zoo works with some 166 conservation breeding programmes. These encompass a range of initiatives including International Studbooks (ISBs), European Endangered Species Programmes (EEPs), European Studbooks (ESBs), UK Joint Management of Species Programmes (JMSPs) and English Nature Programmes. Programmes for high profile animals include the EEPs for Black Rhinoceros and Orang utans and the wide coverage of species involved range from Asian Elephants to Tadpole Shrimps.

Survival

Some of these conservation breeding programmes are for species now extinct in the wild and they represent the only chance of survival. Such is the case for two of the three species of Partula Snail held and bred at Chester: both are now extinct on their native Hawaii. This is also the case for one of the Lake Victoria Cichlid fishes and two of the Mexican Goodeid fishes held in our aquarium. Some species that were extinct in the wild have already been returned to their former habitat. An example of this is the Père David's Deer, now returned to their native China. A number of the animals now breeding successfully in China came from Chester Zoo.

For other critically endangered species our Zoo populations act as essential lifeboats. For both Waldrapp Ibis and Bali Starlings, there are many more individuals in zoos than remain in the wild. These populations require careful management to ensure that they remain genetically, physically and behaviourally suitable for reintroduction should that be needed.



Typical Sand Lizard habitat in Merseyside

Reintroduction

This is appropriate when the circumstances that caused a particular species or population to decline no longer hold and suitable habitat exists. Sand Lizards bred at Chester as part of our partnership with a number of other conservation organisations were released this year at sites in west Wales and on the Sefton coast of Merseyside (above).

Chester Zoo Conservation Breeding Programmes are detailed in the *Conservation Prospectus*, published in Spring 2001

**North of England Zoological Society
Conservation Breeding Programmes**

Conservation breeding programmes for endangered species are aimed at supporting wild populations. They are not an alternative to conservation in the wild. For many threatened species, co-ordinated conservation programmes are an essential component of the total conservation-recovery programme. This may also include habitat protection or restoration. Conservation breeding programmes can assist species conservation by acting as 'lifelines' for species whose habitat has been lost or for which the causes of decline cannot currently be addressed. These zoo populations also act as ambassadors for their species, enabling them to educate the visiting public about conservation-related wildlife issues to support conservation in the wild. Zoo populations can also support conservation in the field by acting as a resource for genetic scientific research - especially for studies of reproduction, nutrition and behaviour.

Because of the large number of individual animals required to maintain a genetically diverse population over a number of years, most conservation breeding programmes require facilities of high standard and funding to cover the costs of husbandry, veterinary, research and other activities. Chester Zoo is pleased to be a partner in maintaining these facilities and to provide the expertise and staff to support conservation in the wild. The populations can also support conservation in the field by acting as a resource for genetic scientific research - especially for studies of reproduction, nutrition and behaviour.

Conservation breeding programmes for endangered species are aimed at supporting wild populations. They are not an alternative to conservation in the wild. For many threatened species, co-ordinated conservation programmes are an essential component of the total conservation-recovery programme. This may also include habitat protection or restoration. Conservation breeding programmes can assist species conservation by acting as 'lifelines' for species whose habitat has been lost or for which the causes of decline cannot currently be addressed. These zoo populations also act as ambassadors for their species, enabling them to educate the visiting public about conservation-related wildlife issues to support conservation in the wild. Zoo populations can also support conservation in the field by acting as a resource for genetic scientific research - especially for studies of reproduction, nutrition and behaviour.

Conservation breeding programmes for endangered species are aimed at supporting wild populations. They are not an alternative to conservation in the wild. For many threatened species, co-ordinated conservation programmes are an essential component of the total conservation-recovery programme. This may also include habitat protection or restoration. Conservation breeding programmes can assist species conservation by acting as 'lifelines' for species whose habitat has been lost or for which the causes of decline cannot currently be addressed. These zoo populations also act as ambassadors for their species, enabling them to educate the visiting public about conservation-related wildlife issues to support conservation in the wild. Zoo populations can also support conservation in the field by acting as a resource for genetic scientific research - especially for studies of reproduction, nutrition and behaviour.

MAMMALS		BRED '01	BRED < '01	IUCN Red List	Managed Programme					
1	Western Grey Kangaroo									
2	Rodrigues Fruit Bat	X	X	CR	EEP/ISB					
3	Ring-tailed Lemur	X	X	VU	ESB					
4	Black and White Ruffed Lemur			EN	EEP/ISB					
5	Red Ruffed Lemur			CR	EEP/ISB					
6	Cotton-top Tamarin			EN	EEP/ISB					
7	Buffy-headed Capuchin	X	X	CR	EEP					
8	Colombian Black Spider Monkey			VU	EEP/JMSP					
9	Lion-tailed Macaque	X	X	EN	EEP/ISB					
10	Sulawesi Crested Macaque	X	X	EN	EEP					
11	Mandrill	X	X	VU	ESB/JMSP					
12	Chimpanzee	X	X	EN	JMSP					
13	Bornean Orang utan			EN	EEP/ISB					
14	Sumatran Orang utan			CR	EEP/ISB					
15	Prairie Marmot	X	X	LRnt						
16	African Crested Porcupine			LRnt						
17	Capybara	X	X		JMSP					
18	Mara	X	X	LRnt	JMSP					
19	Harvest Mouse	X	X	LRnt						
20	Maned Wolf			LRnt						
21*	Bush Dog			VU	EEP/ISB					
22*	Oriental Small-clawed Otter			LRnt	JMSP					
23	Serval Cat		X	EN						
24	Amur Tiger		X	CR	EEP/ISB					
25	Asiatic Lion		X	CR	EEP/ISB					
26*	Jaguar		X	LRnt	ESB					
27*	Cheetah			VU	EEP/ISB					
28	** Red Panda	N/A	X	EN	EEP					
29	Californian Sealion		X		ESB/JMSP					
30	Asian Elephant		X	EN	EEP					
31*	Persian Onager		X	EN	EEP/ISB					
32*	Przewalski's Horse		X	EW	EEP/ISB					
33	South American Tapir		X	LRnt	ESB					
34	Black Rhinoceros		X	CR	EEP/ISB					
35	Babirusa			VU	EEP/ISB					
36	** Red River Hog	N/A	N/A		ESB					
37	Guanaco		X	VU						
38*	Chilean Pudu		X	VU	EEP/ISB					
39	Burmese Brow-antlered Deer		X	LRnt	EEP/ISB					
40	Philippine Spotted Deer	X		EN	EEP/ISB					
41*	Père David's Deer		X	CR						
42	Giraffe	X	X	LRcd	EEP					
43	Lowland Anoa		X	EN	EEP/ISB					
44*	Barasingha			VU						
45	Congo Buffalo		X	LRcd	(ESB)					
46	American Bison	X	X	LRcd						
47	Bongo		X	EN	EEP/ISB					
48	West African Sitatunga	X	X	LRnt	ESB					
49*	Sable Antelope			LRcd	JMSP					
50*	Kafue Flats Red Lechwe		X	VU	JMSP					
51	Scimitar-horned Oryx	X	X	EW	EEP/ISB					
52	Gemsbok	X	X	LRcd	JMSP					
53	Blackbuck	X	X	VU						
54	Arabian Gazelle	X	X	LRcd	JMSP					

** Species will join the collection in 2002.

BIRDS		BRED '01	BRED < '01	IUCN Red List	Managed Programme					
1	Common Rhea		X	LRnt						
2	Humboldt's Penguin	X	X	VU	EEP					
3	Dalmatian Pelican			LRcd	EEP					
4	Black Stork				ESB					
5	Waldraap Ibis	X	X	CR	EEP/ISB					
6	Chilean Flamingo	X	X	LRnt						
7	Black-billed Whistling Duck		X	VU						
8	Lesser White-fronted Goose		X	VU						
9	Red-breasted Goose		X	VU						
10	Hawaiian Goose		X	VU						
11	Baikal Teal		X	VU						
12	Laysan Teal	X	X	VU						
13	Baer's Pochard	X		VU						
14	Ferruginous Duck	X	X	LRnt						
15	Marbled Teal	X	X	VU						
16	White-headed Duck	X	X	EN						
17	Andean Condor		X	LRnt	EEP					
18	European Black Vulture			LRnt	EEP					
19*	Griffon Vulture				ESB					
20*	Mauritius Kestrel		X	VU	(ESB)					
21*	Red-billed Curassow	N/A		EN	EEP/(ISB)					
22	Rouffou Partridge	X	X	LRnt						
23*	Blyth's Tragopan		X	VU	JMSP/ISB					
24	Satyr Tragopan	X	X	LRnt						
25	Brown-eared Pheasant		X	VU						
26	Palawan Peacock Pheasant	X	X	VU	EEP					
27	Mountain Peacock Pheasant	X	X	VU	ESB/ISB					

REPTILES		BRED '01	BRED < '01	IUCN Red List	Managed Programme					
1	Malayan Box Turtle		X	VU						
2+	Yellow-footed Tortoise			VU						
3	Greek Tortoise		X	VU						
4	Hermann's Tortoise		X	LRnt						
5+	Egyptian Tortoise			VU	JMSP/EEP					
6	Horsfield's Tortoise			VU						
7	West African Dwarf Crocodile			VU	JMSP					
8	Sand Lizard	X	X	ENP						
9	Rhinoceros Iguana		X	VU	ESB/JMSP					
10+	Egyptian Spiny-tailed Lizard			VU	JMSP					
11	Philippine Sail Fin Lizard		X	DD	JMSP					
12	Prehensile-tailed Skink		X		JMSP					
13+	Komodo Dragon			VU	ESB/ISB					
14	Cuban Boa	X		LRnt	EEP					

		BRED '01	BRED <'01	IUCN Red List	Managed Programme	Common name	Scientific name	IUCN	
								Red list	Family
						Willowleaf Podocarp	<i>Podocarpus salignus</i>	VU	Podocarpaceae
						Dawn Redwood	<i>Metasequoia glytostroboides</i>	CR	Taxodiaceae
						Giant Redwood	<i>Sequoiadendron giganteum</i>	VU	Taxodiaceae
15	Jamaican Boa		X	VU	EEP		<i>Dioon spinulosum</i>	LR	Cycadaceae
16	Madagascan Tree Boa		X	VU	JMSP		<i>Zamia fischeri</i>	VU	Zamiaceae
17	Aruba Island Rattlesnake		X	CR	ESB/ISB				
Total								10	

DICOTYLEDONS

							<i>Michelia chapaensis</i>	LR	Magnoliaceae
						Katsura Tree	<i>Cercidiphyllum japonicum</i>	LR/nt	Cercidiphyllaceae
						Chile Lantern Tree	<i>Cniodendron hookerianum</i>	LR	Elaeocarpaceae
							<i>Trochetopsis ebenus</i>	CR	Sterculiaceae
							<i>Ilex perado ssp. platyphylla</i>	EN	Aquifoliaceae
							<i>Pittosporum obcordatum</i>	LR/nt	Pittosporaceae
							<i>Corokia macrocarpa</i>	LR/nt	Grossulariaceae
						Santa Cruz Island Ironwood	<i>Lyonothamnus floribundus ssp. asplenif</i>	VU	Rosaceae
							<i>Carmichaelia curta</i>	LR	Leguminosae
							<i>Carmichaelia kirkii</i>	EN	Leguminosae
						Weeping Tree Broom	<i>Chordospartium muritai</i>	CR	Leguminosae
						Weeping Tree Broom	<i>Chordospartium stevensonii</i>	VU	Leguminosae
						Glory Pea	<i>Cyanthus puniceus</i>	EN	Leguminosae
						Southern Broom	<i>Notospartium glabrescens</i>	LR/nt	Leguminosae
						Southern Broom	<i>Notospartium torulosum</i>	LR/nt	Leguminosae
							<i>Gunnera hamiltonii</i>	EN	Gunneraceae
						Hankerchief Tree	<i>Davidia involucreta var. involucreta</i>	LR	Cornaceae
							<i>Echium pininana</i>	VU	Boraginaceae
							<i>Myosotis colensoi</i>	VU	Boraginaceae
						White Forsythia	<i>Abelophyllum distichum</i>	EN	Oleaceae
							<i>Tecomanthe speciosa</i>	EN	Bignoniaceae
							<i>Hebe armstrongii</i>	VU	Scrophulariaceae
							<i>Hebe cupressoides</i>	VU	Scrophulariaceae
						Daisy Bush	<i>Brachyglottis compacta</i>	LR	Asteraceae
						Daisy Bush	<i>Olearia hectoris</i>	EN	Asteraceae
						Daisy Bush	<i>Olearia traversii</i>	LR/nt	Asteraceae
Total								26	

MONOCOTYLEDONS

							<i>Beccariopeponix madagascariensis</i>	CR	Palmae
						Sentry Palm	<i>Howea balmoreana</i>	VU	Palmae
						Kentia Palm	<i>Howea forsteriana</i>	VU	Palmae
							<i>Johannesteijsmannia magnifica</i>	EN	Palmae
						Cotton Palm, Desert Fan Palm	<i>Washingtonia filifera</i>	LR	Palmae
							<i>Dryadella hirtzii</i>	VU	Orchidaceae
							<i>Lepanthes cascajalensis</i>	VU	Orchidaceae
							<i>Masdevallia ampullacea</i>	VU	Orchidaceae
							<i>Masdevallia andreetana</i>	VU	Orchidaceae
							<i>Masdevallia fuchsii</i>	EN	Orchidaceae
							<i>Masdevallia gilbertoi</i>	LR	Orchidaceae
							<i>Masdevallia lamprotyria</i>	EN	Orchidaceae
							<i>Masdevallia lychniphora</i>	EX?	Orchidaceae
							<i>Masdevallia ova-avis</i>	VU	Orchidaceae
							<i>Masdevallia panguiensis</i>	EN	Orchidaceae
							<i>Masdevallia rolfeana</i>	VU	Orchidaceae
							<i>Masdevallia sanctae-inesae</i>	LR	Orchidaceae
							<i>Masdevallia strobilii</i>	VU	Orchidaceae
							<i>Pleurothallis cardiophylla</i>	DD	Orchidaceae
							<i>Pleurothallis phyllocardia</i>	EN	Orchidaceae
							<i>Pleurothallis scoparum</i>	VU	Orchidaceae
							<i>Pleurothallis volcanica</i>	VU	Orchidaceae
							<i>Porroglossum amethystinum</i>	VU	Orchidaceae
							<i>Porroglossum dalstroemii</i>	LR	Orchidaceae
							<i>Restrepiopsis pandurata</i>	LR	Orchidaceae
							<i>Scaphosepalum microdactylum</i>	LR	Orchidaceae
							<i>Stelis hirtzii</i>	VU	Orchidaceae
							<i>Pleurothallis volcanica</i>	VU	Orchidaceae
							<i>Porroglossum amethystinum</i>	VU	Orchidaceae
							<i>Porroglossum dalstroemii</i>	LR	Orchidaceae
							<i>Restrepiopsis pandurata</i>	LR	Orchidaceae
							<i>Scaphosepalum microdactylum</i>	LR	Orchidaceae
							<i>Stelis hirtzii</i>	VU	Orchidaceae
Total								33	

Our enumeration and recording of threatened plants is still at a preliminary stage. Work continues within the Botanical and Horticultural Department to complete this data.

THE ANIMALS ARE LISTED IN THE WORLD-WIDE STANDARD SEVEN COLUMN TEXT LISTINGS, pp41-46

- Col 1 - Beginning year stock, generally agrees with end 2000.
 Col 2 - Stock that has come to the collection from outside sources.
 Col 3 - This is the addition to our stocks through breeding.
 Col 4 - Stock bred in the Zoo which did not survive more than 30 days. Although col 3/4 are appropriate for breeding performance of many species, they are inappropriate for those with large numbers of small/microscopic young, most of which are unlikely to survive until they are of countable size. For these, col 4 is ignored, and only countable survivors shown in col 3.
 Col 5 - Animals which died or were humanely destroyed for reasons of ill-health.
 Col 6 - Animals removed from the collection other than for reasons in Col 5 above.
 Col 7 - Closing stock as at 31st Dec 2001.

In each column known males are shown 'M', females 'F' and as yet unsexed/young are shown 'Y/?'

AMPHIBIANS

1	Axolotl	<i>Ambystoma mexicanum</i>	X	X	VU	
2+	Blue Poison Arrow Frog	<i>Dendrobates azureus</i>				JMSP
3	Mallorcan Midwife Toad	<i>Alytes muletensis</i>	X	X	CR	JMSP
4+	Puerto Rican Crested Toad	<i>Peltophyne lemur</i>			VU	ISB

FISHES

1	Black Ruby Barb	<i>Puntius nigrofasciatus</i>	X	X	LRcd	
2	Cherry Barb	<i>Capoeta titteya</i>		X	LRcd	
3	Silver Shark	<i>Balantiochelus melanopterus</i>			EN	
4	Omani Blind Cave Fish	<i>Garra barreimiae</i>		X	VU	
5	Pla Eesok	<i>Probarbus jullieni</i>			EN	
6	Red Rainbow Fish	<i>Glossolepis incisus</i>	X	X	VU	
7	Boeseman's Rainbow Fish	<i>Melanotaenia boesemani</i>	X	X	EN	
8	Lake Tebera Rainbow Fish	<i>Melanotaenia herbertaxelrodi</i>	X	X	DD	
9	Lake Kutubu Rainbow Fish	<i>Melanotaenia lacustris</i>	X	X	VU	
10	Dwarf Loach	<i>Botia sidhimunki</i>			CR	
11	Lake Victoria Cichlid	<i>Yssichromis argens</i>	X	X	EW	EEP
12	Lake Victoria Cichlid	<i>Yssichromis pyrrhocephalus</i>	X	X	VU	EEP
13	Lake Victoria Cichlid	<i>Astatoreochromis aliuaudi</i>		X		EEP
14	Lake Victoria Cichlid	<i>Haplochromis riponians</i>		X		EEP
15	Lake Victoria Cichlid	<i>Haplochromis sauvagei</i>		X	VU	EEP
16	Lake Victoria Cichlid	<i>Haplochromis xenognathus</i>		X		EEP
17	Madagascan Cichlid	<i>Ptychochromis oligocanthus</i>	X		^	EEP
18	Spotted Damba	<i>Paretroplus maculatus</i>			CR	EEP
19	Pin Striped Damba	<i>Paretroplus menarambo</i>			^	EEP
20	Barombi Mbo Cichlid	<i>Konia eisentrauti</i>	X	X	CR	EEP
21	Barombi Mbo Cichlid	<i>Pungu maclareni</i>			CR	EEP
22	Barombi Mbo Cichlid	<i>Sarotherodon linnellii</i>	X		CR	
23	Barombi Mbo Cichlid	<i>Sarotherodon lohbergeri</i>	X		CR	EEP
24	Barombi Mbo Cichlid	<i>Stomatepia mariae</i>	X	X	CR	EEP
25	Barombi Mbo Cichlid	<i>Stomatepia pindu</i>	X	X	CR	EEP
26	Asiatic Arowana	<i>Scleropages formosus</i>			EN	
27	Killifish	<i>Pachypanchax sakaramyi</i>		X	VU	
28	Butterfly Goodeid	<i>Ameca splendens</i>	X	X	EW	EEP
29	Bold Characodon	<i>Characodon audax</i>	X	X	VU	EEP
30	Golden Saw-finned Goodeid	<i>Skiffia francesae</i>	X	X	EW	EEP
31	Crescent Zoe	<i>Zoogoneticus tequila</i>	X	X	^	EEP
32	Swordtail	<i>Xiphophorus clemenciae</i>	X	X	DD	EEP
33	Knysa Seahorse	<i>Hippocampus capensis</i>	X	X	EN	

^ Not yet on IUCN list

INVERTEBRATES

1	Partula Snail	<i>Partula mirabilis</i>	X	X	EW	EEP/ISB
2	Partula Snail	<i>Partula varia</i>	X	X	CR	EEP/ISB
3	Mexican Red-knee Tarantula	<i>Brachypelma smithii</i>		X	LRnt	
4	Tadpole Shrimp	<i>Triops cancriformis</i>		X		ENP/JMSP
5	Daisy Coral	<i>Goniopora stokesi</i>				EEP
6	Beaker Coral	<i>Acanthophyllia deshayensiana</i>				EEP
7	Bubble Coral	<i>Pterogyra sinuosa</i>				EEP
8	Branch Coral	<i>Acropora humilis</i>				EEP
9	Brain Coral	<i>Trachyphyllia geofroyi</i>				EEP
10	Bouquet Coral	<i>Euphyllia glabrescens</i>				EEP
11	Bowl Coral	<i>Turbinaria mesenterina</i>				EEP
12	Bowl Coral	<i>Turbinaria pelata</i>				EEP
13	Star Coral	<i>Favia sp.</i>				EEP
14	Soft Coral	<i>Xenia sp.</i>				EEP
15	Soft Coral	<i>Sinularia sp.</i>	X	X		EEP
16	Soft Coral	<i>Cladiella sp.</i>	X	X		EEP
17	Zoanthid Colony	<i>Zoanthid sp.</i>				EEP
18	Mouse Ear Coral	<i>Lobophytum crassum</i>				EEP

PLANTS

Common name	Scientific name	IUCN	
		Red List	Family
Monkey Puzzle	<i>Araucaria araucana</i>	VU	Araucariaceae
Norfolk Island Pine	<i>Araucaria heterophylla</i>	VU	Araucariaceae
Maidenhair Tree	<i>Ginkgo biloba</i>	EN	Ginkgoaceae
Cedar of Lebanon	<i>Cedrus libani var. libani</i>	LR/nt	Pinaceae

MAMMALS STOCKLIST

		STOCK 31/12/00			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/01			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	<i>Macropus rufogriseus</i>	4	13	0	0	0	0	4	4	0	0	1	0	1	2	0	0	0	0	7	14	0	
Western Grey Kangaroo	<i>Macropus fuliginosus</i>	4	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	2	0	
CHIROPTERA																							
Rodrigues Fruit Bat	<i>Pteropus rodricensis</i>	26	26	0	0	0	0	3	0	3	1	0	2	9	13	1	0	0	0	19	13	0	II
Seba's Short-tailed Bat	<i>Carollia perspicillata</i>	0	0	210	0	0	0	0	0	2	0	0	1	0	0	66	0	0	0	0	0	145	
PRIMATES																							
Ring-tailed Lemur	<i>Lemur catta</i>	12	12	0	0	0	0	0	8	4	0	0	4	0	1	0	6	5	0	6	14	0	I
Black and White Ruffed Lemur	<i>Varecia variegata variegata</i>	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	5	0	I
Red Ruffed Lemur	<i>Varecia variegata rubra</i>	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	I
Cotton-top Tamarin	<i>Saguinus oedipus</i>	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	1	0	0	I
Buffy-headed Capuchin	<i>Cebus apella xanthosternus</i>	3	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	1	1	II
Colombian Black Spider Monkey	<i>Ateles fusciceps robustus</i>	4	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	5	0	II
Lion-tailed Macaque	<i>Macaca silenus</i>	1	3	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	4	0	I
Sulawesi Crested Macaque	<i>Macaca nigra</i>	7	10	0	0	0	0	3	2	0	3	0	0	0	0	0	1	0	0	6	12	0	II
Campbell's Monkey	<i>Cercopithecus campbelli</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	II
Mandrill	<i>Mandrillus sphinx</i>	2	3	0	0	0	0	2	0	1	2	0	0	0	0	0	0	0	0	2	3	1	I
Chimpanzee	<i>Pan troglodytes</i>	6	23	0	0	0	0	2	1	0	2	1	0	0	0	0	0	0	0	6	23	0	I
Bornean Orang utan	<i>Pongo pygmaeus pygmaeus</i>	3	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	4	0	I
Sumatran Orang utan	<i>Pongo pygmaeus abelii</i>	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	I
RODENTIA																							
Prairie Marmot	<i>Cynomys ludovicianus</i>	0	0	26	0	0	0	0	0	13	0	0	0	0	0	1	0	0	0	0	0	38	
African Crested Porcupine	<i>Hystrix cristata</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	
Mara	<i>Dolichotis patagonum</i>	5	2	0	0	0	0	0	0	3	0	0	2	0	1	0	0	0	0	5	1	1	
Capybara	<i>Hydrochoerus hydrochaeris</i>	1	1	0	0	1	0	2	1	2	0	0	2	0	1	0	0	0	0	3	2	0	
Harvest Mouse	<i>Micromys minutus</i>	0	0	0	0	0	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165	
CARNIVORA																							
Maned Wolf	<i>Chrysocyon brachyurus</i>	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	II
Bush Dog	<i>Speothos venaticus</i>	1	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	I
Coati	<i>Nasua nasua</i>	1	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	12	0	
Oriental Small-clawed Otter	<i>Amblyonyx cinereus</i>	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	II
Slender-tailed Meerkat	<i>Suricata suricatta</i>	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	
Jungle Cat	<i>Felis chaus</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	I
Serval	<i>Felis serval</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	II
Asiatic Lion	<i>Panthera leo persica</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	I
Amur Tiger	<i>Panthera tigris altaica</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	I
Jaguar	<i>Panthera onca</i>	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	
Cheetah	<i>Acinonyx jubatus</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	I
PINNIPEDIA																							
Californian Sealion	<i>Zalophus californianus</i>	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	
PROBOSCIDEA																							
Asian Elephant	<i>Elephas maximus</i>	4	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	5	0	I
PERISSODACTYLA																							
Przewalski's Horse	<i>Equus przewalskii</i>	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	I
Grant's Zebra	<i>Equus boehmi</i>	1	4	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	5	0	
Persian Onager	<i>Equus hemionus onager</i>	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	I
South American Tapir	<i>Tapirus terrestris</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	II
Black Rhinoceros	<i>Diceros bicornis michaeli</i>	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	I
ARTIODACTYLA																							
Babirusa	<i>Babirusa babirusa</i>	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	I
Guanaco	<i>Lama guanicoe</i>	8	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	11	0	
Bactrian Camel	<i>Camelus bactrianus</i>	2	3	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	2	2	0	
Chilean Pudu	<i>Pudu pudu</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	I
Philippine Spotted Deer	<i>Cervus alfredi</i>	2	2	0	0	0	0	1	2	0	1	2	0	0	0	0	0	0	0	2	2	0	
Barasingha	<i>Cervus duvauceli duvauceli</i>	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	I
Burmese Brow-antlered Deer	<i>Cervus eldi thamin</i>	3	7	0	0	0	0	1	1	0	1	1	0	0	2	0	0	0	0	3	5	0	
Père David's Deer	<i>Elaphurus davidianus</i>	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	
Reindeer	<i>Rangifer tarandus</i>	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	
Giraffe	<i>Giraffa camelopardalis</i>	3	3	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	5	2	0	
Lowland Anoa	<i>Bubalus depressicornis</i>	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	I
Congo Buffalo	<i>Syncerus caffer nanus</i>	4	7	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	6	0	
American Bison	<i>Bison bison</i>	5	9	0	0	0	0	2	3	0	1	0	0	6	3	0	0	9	0	0	0	0	
Bongo	<i>Tragelaphus eurycerus isaaci</i>	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	
West African Sitatunga	<i>Tragelaphus spekei gratus</i>	3	3	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	2	4	0	
Sable Antelope	<i>Hippotragus niger</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
Kafue Flats Red Lechwe	<i>Kobus leche kafuensis</i>	0	17	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	16	0	II
Scimitar-horned Oryx	<i>Oryx dammah</i>	1	12	0	0	0	0	4	3	1	1	0	1	0	0	0	1	0	0	3	15	0	I
Gemsbok	<i>Oryx gazella gazella</i>	0	6	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	2	6	0	
Blackbuck	<i>Antelope cervicapra</i>	2	12	0	0	0	0	8	5	2	1	1	1	1	0	0	0	0	0	8	16	1	
Arabian Gazelle	<i>Gazella gazella arabica</i>	1	11	0	0	0	0	6	4	0	3	2	0	0	5	0	0	0	0	4	8	0	
		159	309	239	4	3	165	44	38	32	16	8	13	25	33	69	18	25	2	148	284	352	
		707			172			114			37			127			45			784			
Number of specimens at year end -		784																					
Number of species at year end -																							

BIRDS STOCKLIST

		STOCK			RECEIVED			BORN/H'CH			D.N.S.			DEATHS			DISPOSALS			STOCK			CITES	
		31/12/00									30 DAYS			OTHERS			31/12/01							
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?		
STRUTHIONIFORMES																								
Ostrich	<i>Struthio camelus</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	I	
RHEIFORMES																								
Common Rhea	<i>Rhea americana</i>	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	II
CASUARIIFORMES																								
Emu	<i>Dromaius novaehollandiae</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
SPHENISCIFORMES																								
Humboldt's Penguin	<i>Spheniscus humboldti</i>	15	18	4	0	0	0	0	0	30	0	0	6	0	0	1	4	5	18	11	13	9	I	
PELECANIFORMES																								
White Pelican	<i>Pelecanus onocrotalus</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	
Dalmatian Pelican	<i>Pelecanus crispus</i>	5	3	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	5	3	0	I	
CICONIIFORMES																								
Little Egret	<i>Egretta garzetta</i>	3	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	3	0		
White Stork	<i>Ciconia ciconia</i>	2	2	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	2	2	2	0		
Black Stork	<i>Ciconia nigra</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	II	
Waldraup Ibis	<i>Geronticus eremita</i>	7	10	9	0	0	0	0	0	8	0	0	4	0	2	2	0	0	0	7	8	11	I	
Scarlet Ibis	<i>Eudocimus ruber</i>	2	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	0	II	
Eurasian Spoonbill	<i>Platalea leucorodia</i>	1	2	0	1	0	0	0	0	5	0	0	4	1	0	1	0	0	0	1	2	0	II	
Chilean Flamingo	<i>Phoenicopterus chilensis</i>	18	18	17	0	0	0	0	0	7	0	0	3	0	0	1	0	0	0	18	18	20	II	
Caribbean Flamingo	<i>Phoenicopterus ruber ruber</i>	16	13	32	0	0	0	0	0	5	0	0	0	0	0	1	0	0	0	16	13	36	II	
ANSERIFORMES																								
Black-billed Whistling Duck	<i>Dendrocygna arborea</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	II	
Black-necked Swan	<i>Cygnus melanocoryphus</i>	1	2	0	0	0	0	1	2	0	0	0	0	0	1	0	0	1	0	2	2	0		
Lesser White-fronted Goose	<i>Anser erythropus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
Ross's Snow Goose	<i>Anser rossii</i>	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	1	0		
Red-breasted Goose	<i>Branta ruficollis</i>	6	6	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	4	5	0	II	
Hawaiian Goose	<i>Branta sandvicensis</i>	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	I	
Common Shelduck	<i>Tadorna tadorna</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0		
Baikal Teal	<i>Anas formosa</i>	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	II	
Falcated Teal	<i>Anas falcata</i>	5	4	0	0	0	0	1	3	0	0	0	0	0	1	0	1	2	0	5	4	0		
Northern Shoveler	<i>Anas clypeata</i>	1	1	0	0	0	0	0	0	13	0	0	2	0	1	6	0	0	5	1	0	0		
Chilean Pintail	<i>Anas georgica spinicauda</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
Laysan Teal	<i>Anas laysanensis</i>	3	2	0	0	0	0	2	2	1	0	0	1	4	3	0	0	0	0	1	1	0	I	
Garganey	<i>Anas querquedula</i>	2	2	0	0	0	0	1	1	0	0	0	0	1	2	0	0	0	0	2	1	0		
Marbled Teal	<i>Marmaronetta angustirostris</i>	5	5	2	0	0	0	0	1	11	0	0	5	0	1	4	2	1	2	3	4	2		
Common Eider	<i>Somateria mollissima</i>	3	3	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	2	3	0		
Baer's Pochard	<i>Aythya baeri</i>	3	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	2	0		
Ferruginous Duck	<i>Aythya nyroca</i>	3	3	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	3	3	0		
Tufted Duck	<i>Aythya fuligula</i>	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0		
Red-crested Pochard	<i>Netta rufina</i>	2	3	0	0	0	0	1	0	10	0	0	6	0	0	0	0	0	4	3	3	0		
Mandarin Duck	<i>Aix galericulata</i>	19	9	0	0	0	0	1	0	8	0	0	1	1	1	1	0	0	0	19	8	6		
Smew	<i>Mergus albellus</i>	3	3	0	0	0	0	2	1	6	0	0	6	0	0	0	2	1	0	3	3	0		
Hooded Merganser	<i>Mergus cucullatus</i>	2	1	0	0	0	0	2	0	0	1	0	0	0	0	0	1	0	0	2	1	0		
Ruddy Duck	<i>Oxyura jamaicensis</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0		
White-headed Duck	<i>Oxyura leucocephala</i>	5	3	0	0	0	0	1	1	8	0	0	7	2	1	1	1	1	0	3	2	0	II	
FALCONIFORMES																								
Turkey Vulture	<i>Cathartes aura</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	II	
American Black Vulture	<i>Coragyps atratus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	II	
Andean Condor	<i>Vultur gryphus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	I	
Griffon Vulture	<i>Gyps fulvus</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	II	
European Black Vulture	<i>Aegypius monachus</i>	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	II	
Mauritius Kestrel	<i>Falco punctatus</i>	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	I	
GALLIFORMES																								
Red-billed Curassow	<i>Crax blumenbachii</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
Chinese Painted Quail	<i>Excalfactoria chinensis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0		
Red-legged Partridge	<i>Alectoris rufa</i>	1	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0		
Rourolou Partridge	<i>Rourolou rufus</i>	5	7	0	0	0	0	3	2	11	0	0	11	4	5	0	0	0	0	4	4	0		
Blyth's Tragopan	<i>Tragopan blythii</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	I	
Satyr Tragopan	<i>Tragopan satyra</i>	2	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	2	0		
Himalayan Monal	<i>Lophophorus impeyanus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	I	
Brown-eared Pheasant	<i>Crossoptilon mantchuricum</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	I	
Golden Pheasant	<i>Chrysolophus pictus</i>	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0		
Lady Amherst's Pheasant	<i>Chrysolophus amherstiae</i>	1	1	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	1	1	0		
Palawan Peacock Pheasant	<i>Polyplectron emphanum</i>	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	I	
Mountain Peacock Pheasant	<i>Polyplectron inopinatum</i>	1	1	4	0	0	0	0	0	3	0	0	1	0	0	0	0	0	4	1	1	2		
Malayan Peacock Pheasant	<i>Polyplectron malacense</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0		
Edwards' Pheasant	<i>Lophura edwardsi</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	I	
Vietnamese Pheasant	<i>Lophura hatinhensis</i>	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	0		
Malayan Crestless Fireback	<i>Lophura e. erythropteralis</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0		
Great Argus Pheasant	<i>Argusianus argus</i>	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0		
Common Peafowl	<i>Pavo cristatus</i>	4	4	0	0	0	0	0	0	5	0	0	2	0	0	0	0	0	0	4	4	3		
Green Peafowl	<i>Pavo muticus</i>	1	1	3	0	0																		

		STOCK			RECEIVED			BORN/H'CH			D.N.S.			DEATHS			DISPOSALS			STOCK			CITES
		31/12/00									30 DAYS			OTHERS			31/12/01						
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
Laughing Dove	<i>Streptopelia senegalensis</i>	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Red Turtle Dove	<i>Streptopelia tranquebarica</i>	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Emerald Dove	<i>Chalcophaps indica</i>	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Crested Bronzewing Pigeon	<i>Ocyphaps lophotes</i>	1	1	9	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	11
Common Bronzewing Pigeon	<i>Phaps chalcoptera</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Diamond Dove	<i>Geopelia cuneata</i>	8	2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	2	2	0
Mountain Witch Dove	<i>Geotrygon versicolor</i>	4	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	1	0
Mindanao Bleeding-heart	<i>Gallinolumba criniger</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Luzon Bleeding-heart	<i>Gallinolumba luzonica</i>	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0
Golden Heart Pigeon	<i>Gallinolumba rufigula</i>	4	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	2	0
Jambu Fruit Dove	<i>Ptilinopus jambu</i>	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Superb Fruit Dove	<i>Ptilinopus superbus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
Orange-fronted Fruit Dove	<i>Ptilinopus aurantifrons</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pied Imperial Pigeon	<i>Ducula bicolor</i>	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Victoria Crowned Pigeon	<i>Goura victoria</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Blue Crowned Pigeon	<i>Goura cristata</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Nicobar Pigeon	<i>Caloenas nicobarica</i>	2	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3	0
Green-naped Pheasant Pigeon	<i>Otidiphaps nobilis</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
White-naped Pheasant Pigeon	<i>Otidiphaps nobilis arvensis</i>	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
PSITTACIFORMES																							
Red and Blue Lory	<i>Eos histrio</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Black-winged Lory	<i>Eos cyanogenia</i>	2	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0
Blue-streaked Lory	<i>Eos reticulata</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
Duyvenbode's Lory	<i>Chalcopsitta duivenbodei</i>	3	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0
Yellow-backed Chattering Lory	<i>Lorius garrulus flavopalliatu</i>	3	3	0	0	0	0	2	0	2	0	0	2	1	1	0	0	0	0	0	4	2	0
Stella's Lorikeet	<i>Charmosyna papou</i>	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
Musschenbroek's Lorikeet	<i>Neopsittacus musschenbroekii</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Mount Apo Lorikeet	<i>Trichoglossus johnstoniae</i>	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	4	2	0
Palm Cockatoo	<i>Probosciger aterrimus</i>	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0
White-tailed Black Cockatoo	<i>Calyptorhynchus latirostris</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Leadbeater's Cockatoo	<i>Cacatua leadbeateri</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Blue-eyed Cockatoo	<i>Cacatua ophthalmica</i>	9	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	9	3	0
Red-vented Cockatoo	<i>Cacatua haematurpygia</i>	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
Kea	<i>Nestor notabilis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Greater Vasa Parrot	<i>Coracopsis vasa</i>	5	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	1	0
Princess Parrot	<i>Polytelis alexandrae</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Scarlet-chested Parrot	<i>Neophema splendida</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Derbyan Parakeet	<i>Psittacula derbiana</i>	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0
Black-cheeked Lovebird	<i>Agapornis nigrigensis</i>	1	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0
Hyacinthine Macaw	<i>Anodorhynchus hyacinthinus</i>	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0
Blue and Yellow Macaw	<i>Ara ararauna</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Blue-throated Macaw	<i>Ara glaucogularis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Scarlet Macaw	<i>Ara macao</i>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Yellow-naped Macaw	<i>Ara auricollis</i>	1	1	0	1	0	0	1	2	0	0	0	0	1	0	0	1	1	0	0	1	2	0
Illiger's Macaw	<i>Ara maracana</i>	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Red-masked Conure	<i>Aratinga erythrogenys</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Golden-capped Conure	<i>Aratinga auricapilla</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Queen of Bavaria Conure	<i>Guaruba guarouba</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Thick-billed Parrot	<i>Rhynchopsitta pachyrhyncha</i>	3	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	2	0
Blue-throated Conure	<i>Pyrrhura cruentata</i>	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0
Slender-billed Parakeet	<i>Encognathus leptorhynchus</i>	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0
Yellow-faced Parrotlet	<i>Forpus xanthops</i>	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
Ecuadorian Amazon Parrot	<i>Amazona autumnalis lilacina</i>	2	2	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	2	2	0
Cuban Amazon	<i>Amazona leucocephala</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Green-cheeked Amazon	<i>Amazona viridigenalis</i>	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Red-tailed Amazon	<i>Amazona brasiliensis</i>	2	2	0	0	0	1	2	0	1	0	0	1	0	0	1	0	0	0	0	4	2	0
St Lucia Amazon	<i>Amazona versicolor</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
CUCULIFORMES																							
Red-crested Turaco	<i>Tauraco erythrophus</i>	1	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	1	1	0
Fischer's Turaco	<i>Tauraco fischeri</i>	2	2	0	0	0	0	1	0	2	0	0	2	1	0	0	0	0	0	0	2	2	0
Schalow's Turaco	<i>Tauraco schalowi</i>	3	2	0	0	1	0	0	1	2	0	0	1	0	2	1	1	0	0	0	2	2	0
White-cheeked Turaco	<i>Tauraco leucotis</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Violet Plantain Eater	<i>Musophaga violacea</i>	2	2	0	0	0	0	1	0	3	0	0	3	0	0	0	0	1	0	0	3	1	0
STRIGIFORMES																							
Barn Owl	<i>Tyto alba</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
White-faced Scops Owl	<i>Otus leucotis</i>	1	1	0	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	2		

		STOCK 31/12/00			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/2001			CITES	
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?		
Green Tree Python	<i>Chondropython viridis</i>	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2		
Cuban Boa	<i>Epicrates angulifer</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	II	
Brazilian Rainbow Boa	<i>Epicrates cenchria cenchria</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0		
Jamaican Boa	<i>Epicrates subflavus</i>	1	6	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	6	3	I	
Haitian Boa	<i>Epicrates striatus striatus</i>	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Rubber Boa	<i>Charina bottae</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Madagascar Tree Boa	<i>Sanzinia madagascariensis</i>	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	II
Boa Constrictor	<i>Constrictor constrictor</i>	4	2	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	3	1	0	II	
Green Anaconda	<i>Eunectes murinus</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	II
Honduran Milk Snake	<i>Lampropeltis triangulum</i>	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	
California Kingsnake	<i>Lampropeltis getulus californiae</i>	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
Red-tailed Racer	<i>Gonyosoma oxycephala</i>	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	
Indian Cobra	<i>Naja naja</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	II
East African Green Mamba	<i>Dendroaspis angusticeps</i>	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
Gaboon Viper	<i>Bitis gabonica</i>	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	
Tropical Rattlesnake	<i>Crotalus durissus colineatus</i>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
Aruba Island Rattlesnake	<i>Crotalus unicolor</i>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	
		70	96	81	4	3	13	0	0	28	0	0	0	8	13	7	4	4	37	62	82	78		
		247			20			28			0			28			45			222				

Number of specimens at year end - 222
 Number of species at year end - 49
 Number of species held during year - 53

EDUCATION

Not included in species/specimen totals

		STOCK 31/12/00			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/01			CITES	
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?		
Cornsnake	<i>Elaphe guttata</i>	2	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1		
Gartersnake	<i>Thamnopsis sp.</i>	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
		2	2	1	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	1	2	1	
		5			1			0			0			2			0			4				

AMPHIBIANS STOCKLIST

		STOCK 31/12/00			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/01			CITES	
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?		
Smoky Jungle Frogs	<i>Leptodactylus pentadactylus</i>	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16		
Axolotl (Black Form)	<i>Ambystoma mexicanum</i>	aq	0	0	10	0	0	7	0	0	150	0	0	0	0	58	0	0	0	0	0	109	II	
Axolotl (White Form)	<i>Ambystoma mexicanum</i>	aq	0	0	6	0	0	6	0	0	0	0	0	0	6	0	0	0	0	0	0	6	II	
Japanese Fire-bellied Newt	<i>Cynops pyrrhogaster</i>	aq	0	0	5	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	6		
Red Eyed Tree Frog	<i>Agalychnis callidryas</i>		0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17		
Mission Eyed Golden Tree Frog	<i>Phrynosoma resimifictrix</i>		0	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3		
White's Tree Frog	<i>Litoria caerulea</i>		6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	
Blue Poison Arrow Frog	<i>Dendrobates azureus</i>		0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	II	
Black and Green Poison Arrow Frog	<i>Dendrobates auratus</i>		0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	II	
Yellow Striped Poison Arrow Frog	<i>Dendrobates leucomelas</i>		0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	II	
African Bullfrog	<i>Pyxicephalus adspersus</i>		0	1	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	
South African Clawed Frog (Albino)	<i>Xenopus laevis</i>	aq	3	3	0	0	0	0	0	0	43	0	0	0	1	0	11	0	0	0	2	3	32	
Dwarf African Clawed Frog	<i>Hymenochirus boettgeri</i>	aq	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	
Nigerian Clawed Frog	<i>Xenopus tropicalis</i>	aq	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Puerto Rican Crested Toad	<i>Peltodytes lemur</i>		4	6	20	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	6	18	
Mallorcan Midwife Toad	<i>Alytes muletensis</i>		0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31		
Smooth Sided Toad	<i>Bufo guttatus</i>		0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
Surinam Toad	<i>Pipa pipa</i>	aq	2	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		15	18	151	1	0	15	0	0	193	0	0	0	3	1	83	0	0	0	13	17	276		
		184			16			193			0			87			0			306				

Number of specimens at year end - 306
 Number of species at year end - 16
 Number of species held during the year - 18
 aq indicates species kept by the Aquarium

EDUCATION

Not included in species/specimen totals

		STOCK 31/12/00			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/01			CITES
		M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	
Chacoan Horned Frog	<i>Ceratophrys cranwelli</i>	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
		0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
		2			0			0			0			0			0			2			

FISHES STOCKLIST

		STOCK 31/12/01		CITES			STOCK 31/12/01		CITES
POTAMOTRYGONIDAE					Cherry Barb	<i>Capoeta titeya</i>		10	
Fresh-water Stingray	<i>Potamotrygon motoro</i>		6		Goldfish (various)	<i>Carassius auratus</i>		50	
OSTEOGLOSSIDAE					Mirror Carp	<i>Cyprinus carpio</i>		5	
South American Arowana	<i>Osteoglossum bicirrhosum</i>		2		Koi Carp	<i>Cyprinus carpio</i>		10	
Black Arowana	<i>Osteoglossum ferreirai</i>		1		Omani Blind Cave Fish	<i>Garra barreimiae</i>		80	
Asiatic Arowana	<i>Scleropages formosus</i>		4	I	Golden Orfe	<i>Idus idus</i>		4	
MORMYRIDAE					Pla Eesok	<i>Probarbus jullieni</i>		6	I
Blunt Jaw Elephant Trunkfish	<i>Gnathonemus elephas</i>		3		Black Ruby Barb	<i>Puntius nigrofasciatus</i>		60	
Long-nosed Elephant Trunkfish	<i>Gnathonemus petersi</i>		10		Golden Rudd	<i>Scardinius erythrophthalmus</i>		24	
Down Poker	<i>Campylomormyrus rhyncophorus</i>		2		CYPRINODONTIDAE				
Short-nosed Elephant Trunkfish	<i>Marcusenrus angolensis</i>		4		Nosy Bè Killie Fish	<i>Pachypanchax homalonotus</i>		14	
CHARACIDAE					Butterfly Goodeid	<i>Ameba splendens</i>		300	
Blind Cave Fish	<i>Astyanax jordani</i>		45		Bold Characodon	<i>Characodon audax</i>		66	
Red-eyed Characin	<i>Arnoldichthys spilopterus</i>		3		Golden Saw-finned Goodeid	<i>Skiffia francesae</i>		300	
Long-finned Characin	<i>Brycinus longipinnis</i>		110		Crescent Zoe	<i>Zoogoneticus tequila</i>		60	
Congo Tetra	<i>Phenacogrammus interruptus</i>		17		Swordtail	<i>Xiphophorus clemenciae</i>		60	
Rummy-nosed Tetra	<i>Hemigrammus bleheri</i>		6		ADRIANICHYIDAE				
CYPRINIDAE					Duck-billed Fish	<i>Xenopoeilus sarasinorum</i>		45	
Silver Shark	<i>Balantiocheilus melanopterus</i>		2		HEMIRAMPHIDAE				
					Halfbeak	<i>Nomoramphus ebrardti</i>		50	

		STOCK 31/12/01	CITES			STOCK 31/12/01	CITES
COBITIDAE				CHAETODONTIDAE			
Clown Loach	<i>Botia macracantha</i>	8		Yellow Long-nosed Butterflyfish	<i>Forcipiger flavissimus</i>	1	
Dwarf Loach	<i>Botia sidhimunki</i>	10		POMACANTHIDAE			
ELECTROPHORIDAE				Bicolour Angelfish	<i>Centropyge bicolor</i>	1	
Electric Eel	<i>Electrophorus electricus</i>	1		Emperor Angelfish	<i>Pomacanthus imperator</i>	1	
CICHLIDAE				Koran Angelfish	<i>Pomacanthus semicirculatus</i>	1	
Triangle Cichlid	<i>Uaru amphiacanthoides</i>	1		GOBIIDAE			
Lake Victoria Cichlid	<i>Astatoreochromis aliuaudi</i>	13		Dragon Goby	<i>Amblygobius phalaena</i>	3	
Lake Victoria Cichlid	<i>Yssichromis argens</i>	159		Orange stripe Prawn Goby	<i>Amblyeleotris randalli</i>	3	
Lake Victoria Cichlid	<i>Yssichromis pyrrhocephalus</i>	30		ACANTHURIDAE			
Lake Victoria Cichlid	<i>Haplochromis ripoianus</i>	40		Regal Tang	<i>Paracanthurus hepatus</i>	4	
Lake Victoria Cichlid	<i>Haplochromis sauvagei</i>	18		Yellow Tang	<i>Zebrasoma flavescens</i>	1	
Lake Victoria Cichlid	<i>Haplochromis xenognathus</i>	40		APOGONIDAE			
Heckel Discus	<i>Symphysodon discus discus</i>	1		Emperor/Banggai Cardinal Fish	<i>Pterapogon kauderni</i>	100	
Lake Malawi Cichlid	<i>Pseudotropheus elongatus chailosi</i>	5	*	Polka Dot Cardinal Fish	<i>Sphaeramia nematoptera</i>	2	
Lake Malawi Cichlid	<i>Melanochromis auratus</i>	8	*	LABRIDAE			
Lake Malawi Cichlid	<i>Pseudotropheus socolofi</i>	50	*	Cleaner Wrasse	<i>Labroides dimidiatus</i>	2	
Lake Malawi Cichlid	<i>Pseudotropheus lombardoi</i>	6	*	SCARIDAE			
Lake Malawi Cichlid	<i>Pseudotropheus sp. elongatus ornatus</i>	12	*	Biocolour/Clown Parrotfish	<i>Cetoscarus bicolor</i>	1	
Lake Malawi Cichlid	<i>Labidochromis caeruleus</i>	12	*	PSEUDOCHROMIDAE			
Lake Malawi Cichlid	<i>Labeotropheus fuelleborni</i>	30	*	Orchid Dottyback	<i>Pseudochromis fridmani</i>	2	
Lake Malawi Cichlid	<i>Nimbochromis livingstonii</i>	3					
Altum Angelfish	<i>Pterophyllum scalare altum</i>	1					
Madagascan Cichlid	<i>Ptychochromis oligacanthus</i>	4	*				
Spotted Damba	<i>Paretropius maculatus</i>	12	*				
Pin Striped Damba	<i>Paretropius menarambo</i>	12	*				
Barombi Mbo Cichlid	<i>Pungu macleari</i>	6	*				
Barombi Mbo Cichlid	<i>Konia eisentrauti</i>	20	*				
Barombi Mbo Cichlid	<i>Sarotherodon linnellii</i>	125	*				
Barombi Mbo Cichlid	<i>Sarotherodon lohbergeri</i>	91	*				
Barombi Mbo Cichlid	<i>Stomatepia mariae</i>	25	*				
Barombi Mbo Cichlid	<i>Stomatepia pindu</i>	65	*				
ANABANTIDAE				Number of specimens at year end - 2998			
Pearl Gourami	<i>Trichogaster leeri</i>	5		Number of species at year end - 113			
ATHERINIDAE				* denotes species bred in 2001			
Madagascan Rainbow Fish	<i>Bedotia madagascariensis</i>	15					
Red Rainbow Fish	<i>Glossolepis incisus</i>	40	*				
Boeseman's Rainbow Fish	<i>Melanotaenia boesemani</i>	11					
Lake Tebera Rainbow Fish	<i>Melanotaenia herbertaxelrodi</i>	6					
Lake Kutubu Rainbow Fish	<i>Melanotaenia lacustris</i>	10	*				
BAGRIDAE							
Giraffe Catfish	<i>Auchenoglanis occidentalis</i>	2					
PIMELODIDAE							
Red-tailed Catfish	<i>Phractocephalus hemiliopterus</i>	6					
Catfish	<i>Leiarus marmoratus</i>	1					
ICTALURIDAE							
Channel Catfish	<i>Ictalurus punctatus</i>	2					
MOCHOKIDAE							
Polka-dot Upside-down Catfish	<i>Synodontis angelicus</i>	7					
Upside-down Catfish	<i>Synodontis nigriventis</i>	4					
Lake Malawi Upside-down Catfish	<i>Synodontis nyassae</i>	4					
CALLICHTHYIDAE							
Arched Corydoras	<i>Corydoras arcuatus</i>	2					
Burgess's Catfish	<i>Corydoras burgessi</i>	8					
Panda Catfish	<i>Corydoras panda</i>	60	*				
Peppered Catfish	<i>Corydoras paleatus</i>	6					
LORICARIIDAE							
Bristlenose Plecostomus	<i>Ancistrus dolichopterus</i>	120	*				
Twig Catfish	<i>Farlowella acus</i>	1					
Plecostomus Catfish	<i>Hypostomus plecostomus</i>	3					
Angelicus Peckoltia	<i>Peckoltia sp.</i>	1					
Emperor Peckoltia	<i>Hypancistrus zebra</i>	2					
TOXOTIDAE							
Archer Fish	<i>Toxotes jaculator</i>	4					
DIPNOI							
African Lung Fish	<i>Protopterus annectens</i>	1					
CENTRISCIDAE							
Shrimpfish	<i>Aeoliscus strigata</i>	9					
SYNGNATHIDAE							
Seahorse	<i>Hippocampus kuda sp.</i>	120	*				
Big Bellied Seahorse	<i>Hippocampus abdominalis</i>	15					
Knysna Seahorse	<i>Hippocampus capensis</i>	200	*				
Snake Pipefish	<i>Corythoichthys intestinalis</i>	5					
MONODACTYLIDAE							
Finger Fish	<i>Monodactylus sebae</i>	4					
SCORPAENIDAE							
Fumanchu Lionfish	<i>Dendrochirus biocellatus</i>	2					
Dwarf Lionfish	<i>Dendrochirus brachyopterus</i>	1					
White Fin Lionfish	<i>Pterois radiata</i>	3					
SCATOPHAGIDAE							
Red Tiger Scat	<i>Scatophagus argus</i>	3					
POMACENTRIDAE							
Skunk Clown Fish	<i>Amphiprion sandaracinos</i>	3					
Fire Clown Fish	<i>Amphiprion ephippium</i>	4					
Tomato Clown Fish	<i>Amphiprion frenatus</i>	2					
Common Clown Fish	<i>Amphiprion ocellaris</i>	6					
Blue Damsel Fish	<i>Pomacentrus alleni</i>	3					
Yellow Tailed Blue Damsel Fish	<i>Chrysiptera hemicyanea</i>	8					

INVERTEBRATES STOCKLIST

		STOCK 31/12/01	CITES
ARACHNIDS			
Chilean Rose Tarantula	<i>Phrixotrichus cala</i>	1	*
Mexican Red-knee Tarantula	<i>Euatulus smithii</i>	6	II
Goliath Bird-eating Spider	<i>Theraphosa leblondi</i>	1	
INSECTS			
Jungle Nymph	<i>Heteropryxillata</i>	15	*
Spiny Stick Insect	<i>Eurycantha calcarata</i>	9	*
Macleay's Spectre	<i>Extastoma tiaratum</i>	7	*
Fruit Beetle	<i>Pachnoda sp.</i>	30	*
Assassin Bug	<i>Platymerus biguttata</i>	25	*
Madagascan Hissing Cockroach	<i>Gromphadorhina portentosa</i>	1200	*
Sabah Thorn Stick Insect	<i>Araeteon asperimus</i>	50	
Leaf Cutter Ants	<i>Acromyrmex octospinosus</i>	1 colony	*
Giant Centipede	<i>Scolopendra gigantea</i>	1	
MOLLUSCS			
African Land Snail	<i>Achatina fulica</i>	10	
Partula Snail	<i>Partula varia</i>	3	*
Partula Snail	<i>Partula taeniata</i>	14	*
Conch	<i>Fusinus polygonoides</i>	1	aq
Turbo Snail	<i>Turbo castanea</i>	6	aq
Clam	<i>Tridacna sp.</i>	1	aq
COELENTERATES			
Daisy Coral	<i>Goniopora stokesi</i>	3	aq II
Beaker Coral	<i>Acanthophyllia deshayensiana</i>	10	aq II
Star Coral	<i>Favia sp.</i>	2	aq II
Bubble Coral	<i>Plerogyra sinuosa</i>	3	aq II
Branch Coral	<i>Acropora humilis</i>	2	aq II
Brain Coral	<i>Trachyphyllia geofroyi</i>	2	aq II
Bouquet Coral	<i>Euphyllia glabrescens</i>	1	aq II
Sea Anemone	<i>Heteractis sp.</i>	11	aq
Leather Coral	<i>Sarcophyton trocheliophorum</i>	2	aq
Zoanthid Colony	<i>Zoanthid sp.</i>	4	aq*
Soft Coral	<i>Sinularia sp.</i>	80	aq*
Mushroom Polyps	<i>Actinodiscus sp.</i>	160	aq*
Mouse Ear Coral	<i>Lobophytum crassum</i>	4	aq*
Encrusting Anemone	<i>Palythoa sp.</i>	3	aq*
Yellow Encrusting Anemone	<i>Parazoanthus sp.</i>	2	aq*
Bowl Coral	<i>Turbinaria pelata</i>	1	aq II
Bowl Coral	<i>Turbinaria mesenterina</i>	1	aq II
Purple Gorgonian	<i>Euplexaura sp.</i>	1	aq
CRUSTACEANS			
White-clawed Crayfish	<i>Austropotamobius palipes</i>	100	
Tadpole Shrimp	<i>Triops cancriformis</i>	REO	aq
Peppermint Shrimp	<i>Lysmata wurdemanni</i>	6	aq
ECHINODERMS			
Long Spined Urchin	<i>Diadema antillarum</i>	7	aq
Red Pencil Urchin	<i>Heterocentrotus mammillatus</i>	1	aq
Slate Pencil Urchin	<i>Eucidaris tribuloides</i>	1	aq
Green Brittle Starfish	<i>Ophiurichthys incrassata</i>	50	aq*
TOTAL			
		1837+	
Number of specimens at year end - 1837+			
Number of species at year end - 38			
* indicates species bred in the Society's collection in 2001			
aq indicates species kept by the Aquarium			
REO indicates resting eggs only			

DIRECTOR'S DEPARTMENT

Director of Chester Zoo and Chief Executive
Professor Gordon McGregor
Reid, BSc, PhD, CBiol,
FIBiol, FLS

Director's Assistant
Frances Jaques, BA,
Assoc CIPD

PERSONNEL DIVISION
Personnel Manager and Head of Division
Jayne Quinn, BA, PG Dip
HRM, Dip RSA, MCIPD

Personnel Assistant
Carol Karim+

Telephonists
Carol Karim+
Marie Lewis
Eamice Manning

FINANCE AND ADMINISTRATION DIVISION

Financial Controller and Company Secretary
Alan Sykes, FCA, Dip BA

Management Accountant
Richard Barnett, MAAT

IT Manager
Philip Morris, HNC, Dip
AMITA, MCP

Network Administrator
Richard de Riso, BTEC, Nat
Dip IT, CLAIF 3

Accounts Supervisor
Carol Campion

Accounts Coordinators
Chris Capner
Joanna Dudley

Payroll Supervisor
Barbara Stewart*

Payroll Coordinator
Silvia Morris*

Cash Office Supervisor
Carmel Pearson

Cash Office and Gate Cashiers
Lorraine Richardson
Joyce Lucas*
Julie Bird
Silvia Delves*

EDUCATION DIVISION
Head of Education Services and Head of Division
Stephen McKeown, BSc,
PGCE

Divisional Secretary
Kate Brankin (Feb 2002)

Librarian
Jane Woodward, BA, ALA*

Education Officers
Sara Raks, BSc, PGCE
Suzanne Thomas, BSc
Gill Wells, Cert Ed

Education Administrator
Mark Powleson, BA

Lead Presenter
Matt Lewis, MSc

Presenter
Elizabeth Marrs, BA, PGCE*

Interpretation Consultant
Ian Hughes*

Interpretation Officer
Rachel White, BSc
(Jan 2002)

ANIMAL AND PLANT DIVISION

Chief Curator and Head of Division
Mark Pilgrim, BSc
(March 2002)

Divisional Secretary
Karen King-Sharp

Administrative Assistant
Vacant

General Curator: Higher Vertebrates and Research
Dr Roger Wilkinson,
BSc, PhD

Curator: Lower Vertebrates and Invertebrates
Vacant

Registrar
Penny Rudd, BA, Dip RSA

Projects Liaison Manager
Vacant

Conservation Officer
Alexandra Zimmerman, BSc,
MSc, CBiol, MIBiol

Conservation Assistant
Scott Wilson, BSc #
(March 2002)

Research Officer
Dr Stephanie Wehnelt, PhD,
Dipl Biol

Research Assistant
Carys Hudson, BSc

Veterinary Officer
Stephanie Sanderson, MA,
Vet MB, MSc, MRCVS

Veterinary Resident
Shan Siyah, BSc, BVMS,
MRCVS

Veterinary Nurse
Jane McDonald, BVNA

Zoo Nutritionist
Dr Andrea Fidgett, PhD,
MSc, BSc (April 2002)

Student Co-ordinator
Alan Woodward,
Dip Anim Mgt+

Records Administrator
Dave Brunger,
Dip Anim Mgt

Team Leaders
Andrew Bagnall, BSc, PGCE
Paul Howe, BA,
Dip Anim Mgt
Andrew Lenihan
Mick Jones

Chas MacKenzie,
Dip Anim Mgt
Wayne McLeod,
Dip Anim Mgt
Tim Rowlands
Alan Woodward,
Dip Anim Mgt+

Keeping Staff
James Andrewes
Susanne Baumler
Shane Blake
Natalie Boyd,
Dip Anim Mgt

Jason Boyer
Mark Cleave,
Dip Anim Mgt
Nick Davies, MSc
Karen Davies,
Dip Anim Mgt

Joyce Dodd
John Frost,
Dip Anim Mgt
Dave Hall
Glyn Hayes, GNVQ
Geoff Harper,
Dip Anim Mgt

Laura Kelly,
Dip Anim Mgt
Darren Langford,
Dip Anim Mgt
Carl Laven
Chris Lavender

Claire Lightfoot,
Dip Anim Mgt
Alan Littlehales,
Dip Anim Mgt
Leanne Lowton,
Simon Marsh,
Dip Anim Mgt

Nick Manning*
Phil Molyneux,
Dip Anim Mgt
Anne Morris,
Dip Anim Mgt

Paul Morris,
Dip Anim Mgt
Niall Ormerod
Don Plant
Belinda Porter
Allan Reid,
Dip Anim Mgt, SVQ3

Steve Williams,
Dip Anim Mgt
John Willis
Andrew Woolham,
Dip Anim Mgt

Helen Wright,
Dip Anim Mgt
Chris Yarwood,
Dip Anim Mgt

Herpetologist
Isolde McGeorge

Herpetology Keeping Staff
Karen Entwistle
Clare Morris, VN

Aquarist
Mike Crumpler

Aquarium Keeping Staff
Ray Packwood,
Dip Anim Mgt
Mervyn Ranasinghe

Animal Supplies Manager
Anthony Hutchinson

Animal Supplies Coordinator
Kevin Whitehead

Animal Supplies Staff
Ken Newey
Paul Bebbington,
Dip Anim Mgt

Pest Controller
Colin Humphries*

General Curator: Botany and Horticulture
Mark Sparrow, Kew Dip
Hort, CGLJ Hort

Assistant Curator, Botany and Horticulture
Sarah Bird, BSc, PG Dip
Ecology

Supervisor, Botanical Horticulture
Mark Hargreaves, NVQ2

Botany and Horticulture Staff
Keith Done
Wesley Evans
Mathew Jenkins
Paul Leach, NVQ2
Ray Newey
Steve Rowlands, NVQ 2
Nigel Wood, NVQ2, RHS
General

ESTATES DIVISION
Estate Engineer and Head of Division
Steve O'Brien, BSc,
Dip Surv, HNC

Divisional Secretary
Vacant

CAD/Architectural Technicians
Paul Evans, BSc, HNC
Anthony Izzard, HND, OND,
CGLJ

Project Manager
Tony Mathews MSc, MRICS#

Foreman, Building and Civil
Paul Lindop, HNC

Foreman, Mechanical and Electrical
Brian Goss, CGLJ

Maintenance
Ian Blythe
Keith Bragan (Jan 2002)
Paul Curtis, HNC, NVQ3
Graham Humphreys
Denis Kinsella, CGLJ
Anthony Lennon
Bernard McCone, CGLJ
Kevin McDonagh
Richard Read, COSIRA
Mark Roberts, CGLJ
Jason Spencer, NVQ3

Site Supervisor
Peter Owens

Site Staff
Chris Bridges
Dave Holder

Safety and Environment Manager
John Winward, AIOSH

Security Officer
Marc Boardman

Assistant Security Officer
Mervyn Garside

MARKETING AND DEVELOPMENT DIVISION
Marketing Manager
Chris Vere, MBE, TD, MA

Public Relations Manager
Pat Code, MIPR

Development Manager
John Regan, BA, MA,
MICFM

Project Development Manager, Regional Biodiversity Centre
Lindsay Sharples, BSc#

Assistant Development Manager
Hazel Russell, BA, HNC

Development Officer
Lynsey Jones, BA, LCGI

Development Associate
Sarah Molyneux

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

Divisional Secretary
Chris Connor, CQSW, Dip
Soc Wk, Adv Dip
Counselling

Events Manager
Jane Lawson

Events Assistant
Taj Pinder

General Catering Manager
Sue Clews*

Assistant Catering Manager
Brian Lloyd*

Supervisors

Johanna Glossop*
Richard Jobson, BA*
Debbie McLeod*
Ian Patten (& Chef)*
Barbara Smith*

Chefs

Liam Adamson, CGLJ*
Mark Ormerod, NVQ2*
Phil Hilton*

General Catering

Penny Armstrong*
Jean Antrobus*
Jo-Anna Birmingham*
Claire Donnelly*
Jenny Huxley*
Dee Jones*

Dorothy Jones*
Kelly Livesley*
Andrew Mapp*
Jackie McLinden*
Pat McRobbie*
Brian Nicholls*
Tracey Pleavin*
Pauline Wainwright*
Ricky Wellings*
Diame Williams*

Catering Stores
Mark Fallon, NVQ3
Brendan O'Brien

Amenity and Gardens Manager
Chris Williams, CGLJ Hort

Amenity and Gardens Team Leaders
Peter Hughes
Peter Thompson

Senior Amenity and Gardens Assistants
Mark Hughes
Darren Paech

Amenity and Gardens Staff
Eric Bickley
Rob Duncan, NVQ2
Stephen Gilyeat
John Green
Paul Harrison, NVQ2
Ray Head
Gwyn Hewitt, NVQ2
Richard Hoddnott, NVQ3
Cyril Jones
Mark Jones
Malcolm Lloyd
Yvonne McDonald
Al Millington, NVQ2
Michael Nesbitt
George O'Connor
Peter Powell
Peter Quayle
Derek Toms

Retail Sales Manager
Alan Jones

Assistant Retail Sales Manager
Susanne Stanton

Buyer and Merchandise Controller
Ian Bodsworth
(January 2002)

Buyer and Retail Supervisor
Celia Long

Retail Sales Assistants
Janet Aldis
Rachel Bestwick
Elaine Bonn
Alison Hughes*
Brenda Jones
Daniel Newcombe
Bill Robson

Volunteer Disabilities Awareness Adviser
Michael Elkerton

2002 STAFF ASSOCIATION

Chairman and Animal and Plant Division
Wesley Evans

Vice Chairman and Finance and Administration Division
Christine Capner

Visitor Services Division
Celia Long
John Green
Brendan O'Brien

Animal and Plant Division
Andrew Lenihan
Geoff Harper

Celia Long and Andrew Lenihan were (respectively) Chairman and Vice Chairman until October 2001

JOB RELATIVITIES COMMITTEE

Chris Capner
Andrew Lenihan
Celia Long
Bernard McCone
Chas MacKenzie
Steve O'Brien
Mark Pilgrim
Jayne Quinn
Darren Paech
Chris Williams

COMMITTEE OF REPRESENTATIVES FOR EMPLOYEE SAFETY (CRES)

Committee Chairman
Susanne Stanton

Members
Mark Cleave
Peter Owens
Chris Williams

LEAVERS

Dominic Briffa
Sarah Cocks
David Vaughan Evans
Jeremy Ferguson
Barry Grain
Myfanwy Griffiths
Darren Keay
Wendy Locker
Claire McAra
Steve Nash
Beryl Ramsey
Louise Selfe
Jason Sheridan
Neil Spooner
Gary White
Barbara Williams
Keith Wood
Pauline Wynne
Nick Young

RETIRED 2001

Sue Davies
Don Dinning
Phyllis Keay

DIED IN SERVICE

Richard Hughes

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

Professor Gordon McGregor Reid, Zoo Director and Chief Executive

- Trustee, National Museums and Galleries on Merseyside.
- Visiting Professor, Department of Veterinary Clinical Science and Animal Husbandry, University of Liverpool
- Zoo Inspector, Secretary of State's List, Department of the Environment (DEFRA)
- Council Member, World Association of Zoos and Aquariums (WAZA); Chair, WAZA Marketing and Public Relations Group
- Council Member, European Association of Zoos and Aquaria (EAZA); Chair, EAZA/EUAC Aquarium Committee; Member, Research Committee, Membership Committee, Endangered Species (EEP) Committee and Giant Panda Working Group
- Council Member, The Federation of Zoological Gardens of Great Britain and Ireland; and Membership and Licensing Committee; and Joint Management of Species Committee
- Member, World Conservation Union (IUCN) and UK Committee; Conservation Breeding Specialist Group, Species Survival Commission; and SSC Asian Elephant Specialist Group
- Member, Conservation Committee, Fauna and Flora International (FFI)
- Member, Editorial Boards, *International Zoo Yearbook*; and *Aquarium Sciences and Conservation*
- Council Member, Association of Leading Visitor Attractions (ALVA)

Andrew Bagnall, Team Leader

- Council Member, and Executive Committee, Association of British Wild Animal Keepers (ABWAK).

Sarah Bird, Assistant Curator, Botany and Horticulture

- Member, Cheshire Regional Biodiversity Partnership
- Co-ordinator, Black Poplar LBAP, Member Grassland LBAP
- Member, Cheshire Mammal Group
- Member and Newsletter Editor, UK and Ireland Zoo Plant Group

Pat Cade, Public Relations Manager

- Member, Marketing and PR Committee, Federation of Zoological Gardens of Great Britain and Ireland
- A Director of North West Tourist Board
- Alternate Member of Council, Association of Leading Visitor Attractions (ALVA)
- Member, Chester Tourism Forum

Liz Child, Head of Visitor Services

- Alternate Member of Council (Designate), Association of Leading Visitor Attractions (ALVA)

Paul Howse, Team Leader

- Member, Cheshire Environmental Forum Agenda 21, and Wildlife Topic Group
- Member, Cheshire Regional Biodiversity Partnership
- Member, Sustainable Cheshire Forum
- Member, Cheshire Mammal Group

Stephen McKeown, Head of Education Services

- Member, Executive Committee, International Association of Zoo Educators (IZE)
- Member, Education and Exhibit Design Committee, European Association of Zoos and Aquaria (EAZA)
- Member, Education Committee, Federation of Zoological Gardens of Great Britain and Ireland

Jayne Quinn, Personnel Manager

- Member, Chester Personnel Advisory Group (chaired by ACAS)

Penny Rudd, Registrar

- Council Member, Cheshire Wildlife Trust: Member, Cheshire Wildlife Trust Personnel Committee
- Secretary/Co-ordinator, Fauna and Flora International North West Group
- Member, Reaseheath College of Agriculture's Board of Governors, and Animal Care Course Industrial Liaison Group
- Member, Liverpool University / Chester College Steering Group for BSc and HND, Animal Behaviour
- Harvest Mice Co-ordinator for Cheshire Wildlife Trust Biodiversity Plan Breeding Programmes
- Member, rECORD biodiversity recording, The Regional Record Centre for Cheshire and the Wirral

Sarah Ruks, Education Officer

- Regional Co-ordinator for the North West, Zoo Federation Education Committee

Stephanie Sanderson, Veterinary Manager

- Council Member, British Veterinary Zoological Society
- Member, Veterinary Advisory Group, Federation of Zoos of Great Britain and Ireland,

37Mark Sparrow, General Curator : Botany and Horticulture

- Member, Board of Directors for PlantNet (botanical documentation committee)
- Member, European Zoo Plant Group Committee
- Member, Conference Programme Committee, Association of Zoological Horticulturists

Chris Vere, Marketing Manager

- Member, *Ad hoc* Promotional Marketing Committee, Association of Leading Visitor Attractions (ALVA)
- Member of Committee, Chester (Hapsford) M56 Tourist Information Point and Cheshire Oaks Tourist Information Centre Steering Groups
- Member, Ellesmere Port and Neston Tourism Consortium

Dr Stephanie Wehnelt, Research Officer

- Visiting Lecturer, Biology Department, Chester College, University of Liverpool
- Examiner, Examining Board, 3rd Year Students of Zoology, University of Liverpool
- Organising Member, Research Group, Federation of Zoological Gardens of Great Britain and Ireland
- Member, Cheshire Mammal Group

Dr Roger Wilkinson, General Curator : Higher Vertebrates and Research

- Honorary Research Fellow, University of Keele
- Council Member, Avicultural Society
- Scientific Adviser, World Parrot Trust
- Member, Committees of World Pheasant Association and the Congo Peafowl Trust
- Member, International Management Committee for the Mountain Peacock Pheasant
- Member, British Ornithologists' Union Records Committee
- Member, Pheasant Specialist Group (IUCN/Birdlife/WPA)
- Secretary, West African Ornithological Society
- Member, Bird of Paradise Species Interest Committee
- Member, Cheshire Wildlife Trust Barn Owl Group

Alan Woodward, Team Leader

- Hon Member, Africat
- Organising Member, Africat North West Group
- Member, North West Group, Fauna and Flora International (FFI)
- Member, Survival International

In addition to those listed above, 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 page 48 and Conservation Report].

More than 40 lectures were given in the Lecture Theatre during 2001, together with numerous presentations to schools and colleges organised by the Education Division.

FFI = Fauna and Flora International, MM = Members' Meeting, SM = Special Meeting.

20 January	<i>Here be Dragons</i> Prof Michael Hitchcock (MM)
29 January	Cheshire Nature Conservation Forum (SM)
8 February	Cheshire Wildlife Trust <i>Barn Owls</i> (SM)
17 February	<i>Bushmeat in the Gola Forest</i> , Sierra Leone Glyn Davies (MM)
23 February	<i>Gorillas in the Midst of War - Veterinary Triumphs and Tragedies in Central Africa</i> Professor John and Mrs Margaret Cooper (FFI)
26 February	<i>Favourite Days Out</i> Tourism Consortium (SM)
16 March	<i>Owls and Illusions</i> Michael Leach (FFI)
17 March	<i>Enrichment - it's more than just toys - it's animal welfare!</i> Dr Stephanie Wehnelt (MM)
7 April	<i>Wildlife in Wales</i> Valerie McFarland (MM)
20 April	<i>Shark Art</i> Rolf Williams (FFI)
25 April	Chartered Institute of Water and Environmental Management (SM)
10 May	Cheshire Sustainability Forum (SM)
17 May	Association of Leading Tourist Attractions (ALVA) Council Meeting
19 May	Annual General Meeting of NEZS and Zoo Review Professor Gordon McGregor Reid and staff (MM)
18 June	EURO LENS Research conference, Dept of Optometry and Neuroscience UMIST
9-10 July	Zoo Research Symposium (SM)
4 September	<i>Jaguar - Struggle and Triumph in Belize</i> Dr Alan Rabinowitz (SM)
12 September	European Zoo Educators (EZE) post conference visit and tour (SM)



Research Officer, Dr Stephanie Wehnelt, with delegates at the two day Zoo Research Symposium which she organised in July

14 September	<i>Africat - The Kunene Lion and Leopard Study</i> Lise Hanssen (FFI)
24 September	North West Business Leadership Meeting
6 October	British Chelonian Group Meeting
7 October	Royal Photographic Society (NW Region) and Chester Photographic Society RPS Slide Portfolio (SM)
13 October	<i>The Western Indian Fruit Bats - Flying back from extinction</i> Dr Bryan Carroll (MM)
19 October	<i>Antarctica - Life in the Freezer</i> Ben Osborne (FFI)
7/8 November	Federation JMSG Passerine; Hornbill, Toucan and Touraco and Parrot TAG meetings
10 November	<i>Ultimate Killers - Uncut</i> Steve Leonard (SM)
17 November	<i>Soil, Soul and Society</i> Satish Kumar (MM)
28 November	LIFE ECONET - SM
30 November	<i>The Barrackpore Menagerie</i> Sally Walker (FFI)
1 December	<i>Zoo Outreach India</i> Sally Walker (SM)
8 December	Award of Honorary Scientific Fellowship <i>Dinosaur Relationships</i> Professor Brian Gardiner (MM)

CONSERVATION CO-ORDINATION

TAXON ADVISORY GROUP CHAIRS

Chester Zoo provides Chairs at a high level of conservation management and co-ordination. At international level staff lead three key European Association of Zoos and Aquaria (EAZA) Taxon Advisory Groups (TAGs) for endangered species (EEPs). Staff also lead two Joint Management of Species Group (JMSG) TAGs for the Zoo Federation of Great Britain and Ireland. Complementary programmes for rare species are organised on behalf of EAZA by the European Union of Aquarium Curators (EUAC) for fishes and aquatic invertebrates.

Taxon

Elephants (JMSG)
Parrots (EAZA, JMSG)
Parrots (JMSG)
Hornbills (EAZA)
Fish and Aquatic Invertebrates (EAZA/EUAC/EEP/JMSG)

Chair

Mark Pilgrim (Vice chair)
Dr Roger Wilkinson (Co-chair of JMSG)
Andrew Bagnall (Co-chair)
Dr Roger Wilkinson (Co-chair)
Prof Gordon McGregor Reid (Co-chair)

BREEDING PROGRAMME CO-ORDINATORS

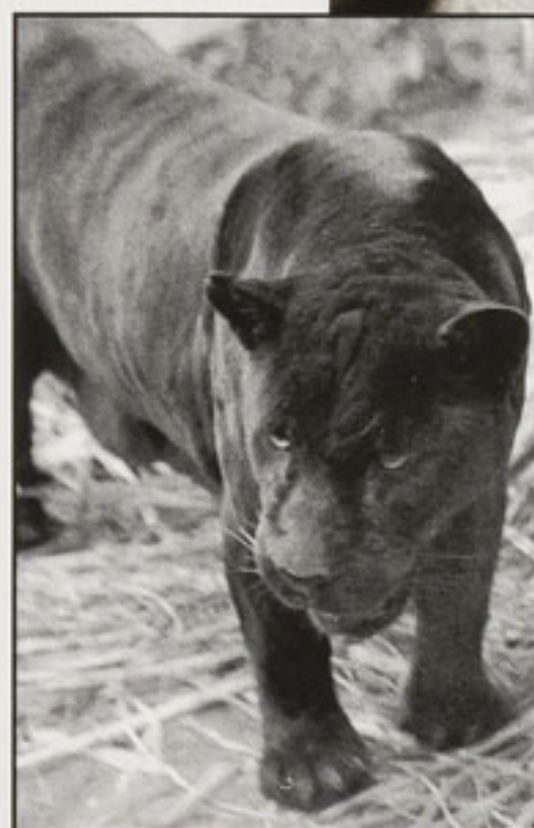
Chester Zoo is an active participant in 18 National Zoo Federation Joint Management of Species Programmes (JMSPs); and International European Endangered Species Programmes (EEPs); Studbooks (ESBs); and Registers for the co-ordination of breeding programmes within Taxon Advisory Groups (TAGs). English Nature (Government) and Cheshire Wildlife Trust (CWT) Biodiversity Action Plans (BAPs) are also supported for native species.

Species

De Brazza Monkey (JMSP)
Talapoin Monkey (JMSP)
Jaguar (ESB)
Congo Buffalo (ESB)
Gemsbok (JMSP)
West African Crowned Crane (UK Co-ordinator)
Black-winged Lory (ESB)
Yellow-backed Chattering Lory (ESB)
Palm Cockatoo (EEP)
Blue-eyed Cockatoo (ESB)
Green-cheeked Amazon Parrot (EEP)
Ecuadorian Amazon Parrot (EEP)
Mindanao Writhe-billed Hornbill (EEP)
Philippine Sail Fin Lizard (JMSP)
Tadpole Shrimp Conservation Group (EUAC/FAITAG)
Native Crayfish Conservation Group (EUAC/FAITAG)
Harvest Mice Conservation Group (CWT)
Biodiversity Recording (CWT)

Co-ordinator

David Brunger
David Brunger
Mark Pilgrim
Mark Pilgrim and Allan Reid proposed
Charles MacKenzie
Dr Roger Wilkinson
Andrew Bagnall
Andrew Bagnall
Dr Roger Wilkinson
Dr Roger Wilkinson
Mark Pilgrim
Mark Pilgrim
Dr Roger Wilkinson
Isolde McGeorge
Ian Hughes
Ian Hughes
Penny Rudd
Penny Rudd



Female black Jaguar *Ebony* came to us from Rome Zoo together with a spotted male, *Carlos*

THIRTY SEVEN OF THE CONSERVATION OUTREACH, RESEARCH AND WELFARE PROJECTS SUPPORTED BY CHESTER ZOO IN 2001		
Subject	Primary Partners/ Researcher	Details
Philippines: Conservation Programmes	William Oliver <i>Fauna and Flora International (FFI)</i>	Polillo Island and West Visayas Projects including Philippine Hornbills and Spotted Deer research support
Nigeria: Primate Programme	Professor Volker Sommer University College London	Support of major primate research programmes in Gashaka Gumti National Park
Nigeria: Hunting Dog Survey	<i>World Wildlife Fund for Nature/ Nigerian Conservation Foundation</i> Kamaya Pepeh, Yola University	Survey of Hunting Dogs in Gashaka Gumti National Park
Belize: Jaguar Research	<i>Wildlife Conservation Society</i> , New York Alexandra Zimmermann, NEZS	Jaguar surveys at Cockscomb Basin Wildlife Sanctuary, Belize
China: Giant Panda Programme	Chengdu Giant Panda Breeding Base and Chengdu Zoo University of Liverpool	Exchange visits between staff members Collaborative genetic studies investigation
Kenya: Black Rhinoceros	<i>Save The Rhino International</i> Kenya Wildlife Service	Game guards support for security and surveillance of Black Rhinoceroses in Tsavo East National Park
India: Zoo Outreach Organisation and Wildlife Information Liaison Development Society	Sally Walker <i>Zoo Outreach Organisation</i>	Support of core administration and continued support of Chiroptera (Bat) Conservation network
Malaysia: Orang utans	Chris Yarwood, NEZS, Geoff Harper, NEZS Richard Read, NEZS	Working visit of two Chester Zoo keepers and blacksmith to assist with Sepilok Orang utan rehabilitation programme
Zambia: Munda Wanga	Alan Littlehales, NEZS, Claire Lightfoot, NEZS	Working visit of two Chester Zoo keepers to Munda Wanga Zoo
Senegal: Black Crowned Cranes	Emmanuel Williams Wetlands International	Investigation of the breeding and migratory status of Black Crowned Cranes in the lower Senegal basin
Papua New Guinea: Palm Cockatoo	Dr Stuart Marsden Manchester Metro University	Research on importance of forest gardens for Palm Cockatoos and other frugivorous birds
Egypt: Tortoises	Sara Cocks, NEZS	Field research by Chester Zoo keeper on Egyptian Tortoises
UK, Chester: Chimpanzee Study	Dr Filippo Aureli, Clare Caws Liverpool John Moores University	Continued support for research into social dynamics of chimpanzee colony at Chester Zoo
Mascarenes, Rodrigues: Rodrigues Fruit Bat	Victoria Powell, NEZS	Support of PhD research on the ecology and conservation of the Rodrigues Fruit Bat
China: Yellow-throated Laughing Thrush	Roland Wirth, ZGAPs He Fen-qi, Beijing	Continuation of survey of Yellow-throated Laughing Thrushes in China
Democratic Republic of the Congo: National Parks	Dr Jo Thompson Lukuru Wildlife Research Project	Support for direct conservation activities in national parks in the Democratic Republic of the Congo
Mauritius: Echo Parakeets	Dr Carl Jones <i>Mauritius Wildlife Foundation</i>	Continued support of Echo Parakeet Conservation Programme on Mauritius
UK, Chester: Harvest Mouse	Penny Rudd, NEZS, <i>Cheshire Wildlife Trust</i>	Support for conservation breeding programme at Chester Zoo
China: Sichuan Biodiversity/ Endemic Birds Conservation	Dr Simon Dowell, Liverpool John Moores University, Dai Bo, Sichuan Forestry Department	Training programme for two Forestry Bureau staff to prepare them for management of the newly designated Laojunshan forest nature reserve.
Brazil: Buffy-headed Capuchin	Dr Jean Marc Lernoald Buffy-headed Capuchin EEP Conservation International	Support of census and distribution survey of the Buffy-headed Capuchin in the Atlantic rain forest region of eastern Brazil
Philippines: Polillo Expedition	Katie Hampson, Oxford University	NEZS Zoological Studentship support of Polillo 2001 expedition to the Philippines
Philippines: Botanical Research and Sail Fin Lizard	<i>Fauna and Flora International</i> Mimie Ledesma, Orlyn Orlanes	NEZS Philippine Conservation Biology Scholarship programme. Support for Philippine Sail fin Lizard and Cebu forest plants dynamics studies
Madagascar: Lemurs	Deborah Race	Support of fund-raising initiative for building of a lemur enclosure in Madagascar
Worldwide: IUCN Conservation Breeding Specialist Group	Ulysses Seal, CBSG	Support of CBSG activities worldwide
UK: British Veterinary Zoological Society	Derek Lyon	Support of autumn 2001 BVZS conference
Thailand: Hornbill Conservation and Research	Dr Pilai Poonswad Hornbill Research Foundation, Bangkok	Support for community based conservation and research programme in Budo-Sungai Padi National Park
UK, Bristol: Veterinary studies	Adele Williams, University of Bristol	NEZS Veterinary Studentship support for a study of <i>Yersinia</i> in marmosets
Nepal: Himalayan Mahseer	Dr Tej Kumar Shrestha	Conservation Status of Himalayan Mahseer
Philippines: Conservation Breeding Centres	Belinda Porter, NEZS Leanne Lowton, NEZS	Working visit of two Chester Zoo keepers to conservation breeding centres on Panay and Negros, West Visayas
Bolivia: Yungas expedition	Aidan McCormick University of Glasgow	NEZS Studentship support for the Yungas 2001 expedition to Isiboro National Park
Namibia: large cats	Lise Hanssen <i>Africat Foundation</i> Simon Marsh, NEZS	Financial support and secondment of Chester Zoo carnivore keeper to work with <i>Africat</i> in Namibia
Spain, Tenerife: Amazon Parrot Research	Mark Pilgrim, NEZS	Support for a behavioural study of <i>Amazona</i> parrots at Loro Parque Foundation breeding centre
Russia: Amur Tigers	Sarah Christie, Zoological Society of London, Amur Tiger EEP	Funding assistance towards crates for relocation of wild Amur Tigers
Kenya: Sweetwaters, large mammals	Chas MacKenzie, NEZS, John Frost, NEZS	Working visit of two Chester Zoo senior animal staff to Sweetwaters Reserve
Assam: Elephants	People for Animals	Support for welfare activities of PFA (India)
United Arab Emirates: Fishes	Professor Gordon McGregor Reid, NEZS Breeding Centre for endangered Arabian wildlife	Support for biodiversity planning

We were please to offer work experience training to 86 students and thank them for their contribution to the Zoo

First Name	Surname	Course and College/School/University	Home	First Name	Surname	Course and College/School/University	Home
Al-Haddad	Abdullah	Harper Adams C	Liverpool	Adam	Jarvis	ND Animal Care, Reaseheath C	Chester
Rachel	Adams	Post A Levels, Pre Vet Science	Prescot	Lyndsay	Judson	ND Animal Care, Reaseheath C	Ellesmere Port
Roy	Allen	PGCE Upper Primary, Liverpool U	Wirral	Sarah	Keats	A Levels, Yale C, Pre Zoology	Wrexham
Michael	Ashford	Retail Work Shadowing, Bishop's HS	Cheshire	Alison	Kelly	Catering and Retail, Upton HS	Chester
Stephanie	Askamp	Halicom Agricultural Centre	The Netherlands	Anna	Kettlewell	GCSEs, Stockport Grammar S, Pre Vet S	Stockport
Rachel	Avagad	Vet Science, Leahurst, Liverpool U	Wirral	Mikkel	Kibsgaard	Trainee Keeper, Aalborg Zoo	Aalborg
Tanya	Babu	Vet Science, Leahurst, Liverpool U	Wirral	James	Kippax	Botany and Horticulture, The Hammond S	Cheshire
Katy	Baker	ND in Animal Care, Reaseheath C	Malpas	Sarah	Kirkman	Veterinary Science, Bristol U	Oldham
Michael	Barker	GCSEs, Bolton S	Bolton	Elizabeth	Leather	ND Animal Care, Reaseheath C	Frodsham
Hannah	Barlow	Post Biology Degree, Conservation Edgehill C	Chorley	Jonathan	Luxton	Catering, Christleton HS,	Christleton
Victoria	Bettley	Catering, Bishop Heber HS	Malpas	Graham	Lyons	Animal Care Course	Co. Antrim
Martin	Boekweit	Catering, Ellesmere Port HS	Great Sutton	Andrew	McNelly	ND Animal Care, Sparsholt C	Hampshire
Kelly	Bradford	Animal Care, Bishop Burton C	Scunthorpe	Gemma	Morris	A Levels, Aquinas C, Pre Vet Science	Stockport
Joanne	Buckley	Post A Levels, Pre Zoology	Chester	Caroline	Murphy	Marine Environment, Glamorgan U	Ellesmere Port
Kerry	Butcher	Advanced IT, Wirral Metro C	Wirral	Selena	Musgrave	Animal Care, Bishop Burton C	Hull
Elizabeth	Camacho	Post A Levels, Pre Vet Science	Macclesfield	Helen	Needham	A Levels, Beaumont S	Hatfield
Mary	Carpenter	GCSEs, Queen's S Chester, Pre Vet Sci	Kingley	Sarah	Norris	BSc Wildlife Conservation, London U	Chester
Joanne	Carter	ND Animal Care, Reaseheath C	Chester	Becky	Nugent	Nuffield Science Bursary Scheme	Ellesmere Port
Fiona	Casson	GCSEs, Sandbach HS, Pre Zoology	Nantwich	David	Owen	A Levels, Blackburn C, Pre Vet Science	Darwen
Tina	Chamberlain	Natural Sciences, Durham U	Neston	Hayley	Phillips	Animal Care, Bishop Burton C	Hull
Tim	Chamberlain	Education, Pre Art Foundation Course, Falmouth C of Art	Melrose	Nikki	Platt	Post A Levels, Pre Veterinary Science	Sandaway
Tina	Chaplin	Animal Care, Bishop Burton C	Hull	Abigail	Porter	Retail, Ulverston Victoria HS	Ulverston
Sarah	Chapman	Post A Levels, Pre Vet Science	Leeds	Lyndsey	Prydderch	Retail, Castell Alun HS	Flintshire
Karen	Chislett	Conservation Biology, Edge Hill C	Yeovil	Ian	Ranasinghe	Aquarium, Work Shadowing	Chester
Alan	Clarke	Amenities and Gardens, Rock Ferry HS	Wirral	Victoria	Raynor	Marketing, Work Shadowing, Wirral Grammar S	Wirral
Samantha	Connor	ND Animal Care, Reaseheath C	Wirral	Gareth	Redston	Animal Behaviour, Ecology and Conservation, Anglia U	Cambridge
Emma	Curtis	A Levels, Pre Zoology	Wrexham	Yvette	Renouf	Post A Levels, Pre Vet Science	Marlow
Lyndsey	Dawson	ND Animal Care, Reaseheath C	Ellesmere Port	Francis	Robinson	Hulme Hall Hostel	Runcorn
Lyndsay	Donaldson	Post A Levels, Pre Vet Science	New Malden	Vicky	Salmon	HND Animal Care, Reaseheath C	Chester
Samantha	Duffy	Post A Levels, Pre Vet Science	Manchester	James	Sheen	Amenities and Gardens, Hawarden HS,	Chester
Miranda	Dunston	BSc Biology, Stirling U	Wakefield	Laura	Smith	BSc Zoology, Durham U	Northwich
Stephen	Durnin	HND Animal Welfare, Chester C	Stoke-on-Trent	Susannah	Tandy	Zoology, U of Wales, Bangor	Wrexham
Jennie	Evans	Education, The Meadows Primary S	Wrexham	Melissa	Thorp	BSc Animal Behaviour, Ecology and Conservation, Anglia U	Cambridge
Layla	Evans	Amenities and Gardens, Work Shadowing, Bishop's HS	Cheshire	Rachel	Tildesley	Post A Levels, Pre Vet Science	Cheadle
Diane	Folly	Personnel, RAF Cosforth, Career Transition	Albrighton	Martin	Vernon	Nat Dip Animal Care, Sparsholt C	Winchester
Daniel	Goodfellow	A Levels, Castell Alun HS, Pre Zoology	Chester	Tara	Wadding	Nat Dip Animal Care, Huddersfield C	Huddersfield
Melanie	Gretton	Vet Science, Liverpool U	Woodthorpe	Mark	Weideman	Botany and Horticulture, Remploy into Work Scheme	Warrington
Kevin	Grindley	Bishop Heber HS	Cholmondeley	Jenn	Whitehead	Post A Levels, Pre Zoology, U of Wales, Bangor	Northwich
Chloe	Harkin	Post A Levels, Pre Vet Science	West Yorkshire	Charlotte	Williams	HND Admin/Secretarial, West Cheshire C	Cheshire
Robert	Heaton	Post A Levels, Pre Vet Science	Crewe	Kenny	Wintle	A Levels, Beaumont S	St Albans
Mathew	Hennessey	A Levels, Pre Vet Science	Stoke on Trent	Emma	Young	Animal Care, West Oxfordshire C	Oxton
Joseph	Hill	Animal Care Course	Neston				
Mathew	Holloway	Retail, Work Shadowing, Bishop's HS,	Cheshire				
Tom	Holmes	Post A Levels, Pre Zoology	Denbighshire				
Sara	Humphreys	ND Animal Care, Reaseheath C	Heald Green				

We were pleased to offer research opportunities to 109 Students and Research Associates and we thank them for their support to the Zoo

First Name	Last Name	Qualification	Subject	University/College	Zoo area of study	Home
Roy	Allen	MSc	Ecology and Environmental Mngt	Liverpool Hope C	Activity budgets, Harvest mice	Wirral
Bethanie	Amey	BSc	Zoology	Liverpool	Seahorses, growth rate	St Albans
Natalie	Armson	BA	Three Dimensional Design	Manchester Metropolitan	Animal sculpture	Hinkley
Dr Filippo	Aureli		Research Associate	Liverpool John Moores	Primates, regulation of social behaviour	Bromborough
Sarah	Bache	BSc	Animal Behaviour	Chester C	Sulawesi macaques, juvenile play behaviour	Birmingham
Dr Lynda	Birke		Research Associate	Independent	Orang utans, visitor effect	Llangollen
Jane	Blackwell	BSc	Applied Zoology	Liverpool John Moores	Jaguar, enrichment	Flint
Heather	Brighton	BSc	PE and Biology	Liverpool Hope C	Chimpanzees, grooming	St. Helens
Kaye	Brown	BSc	Animal Behaviour	Chester C	Spider monkeys, social behaviour	Chester
Nicola	Brown	BSc	Applied Zoology	Liverpool John Moores	Mandrill, behaviour	Preston
Elaine	Cassar	BSc	Zoology	Liverpool John Moores	Sealions, visitor effect	High Wycombe
Clare	Caws		Research Assistant	Liverpool John Moores	Chimpanzees, hierarchy	Chester
Rebecca	Chaplin	BSc	Psychology	Chester C	Falconiformes, competitive interactions	Chester
Lynnette	Clarke	BA	Psychology	Chester C	Chilean flamingo, behaviour	Nuneaton
Elizabeth	Cole	BA	Psychology with Drama	Chester C	Chimpanzees, oestrus	Sudbury, Suffolk
Eleanor	Condon	BSc	Zoology	Manchester Metropolitan	Ruffed lemurs, reconciliation	Northallerton
Steve	Coulson		Part of long-term study	Liverpool John Moores	Invertebrates, colonisation, habitat succession	Liverpool
Victoria	Crowther	BSc	Human Biology and Psychology	Liverpool Hope C	Primates, grooming, social interactions	Runcorn
Clare	Daniel	BSc	Zoology	U of Wales, Aberystwyth	Genetic diversity	Chester
Clare	Cunningham	BSc	Zoology	Liverpool	Primates, grooming	Chorley
Emma	Davis	BSc	Zoology	Liverpool	Sulawesi Macaques, hierarchy	Woodford, Cheshire
Mark	Elley	BSc	Biological Sciences	Manchester Metropolitan	Elephants, trunk elevation	Leeds
Carol	Falkous	MSc	Evolutionary Psychology	Liverpool	Sulawesi Macaques, conflict behaviour	Huddersfield
Mandy	Farr	BSc	Animal Behaviour and Welfare	Chester C	Tigers, enrichment	Stoke on Trent
Yedra	Feltrer	MSc	Wild Animal Health	Institute of Zoology London	Felines, enrichment	Newport Pagnell
Rachel	Fenlon	BSc	Animal Behaviour	Chester C	Primates, play behaviour	Oldbury
Sarah	Fletcher	BSc	Psychology and Biology	Liverpool John Moores	Sulawesi macaques, humans, play behaviour	Heswall
Francesca	Goodhall	BSc	Zoology	Liverpool	Ruffed lemurs, reconciliation	Hatfield
Joanne	Grainger	BSc	Psychology	Chester C	Giraffes, behaviour	Bewdley
Rebecca	Green	BSc	Applied Zoology	Liverpool John Moores	Jaguars, enclosure utilisation	Middlesex
Beverly	Griffiths	BSc	Psychology and Biology	Liverpool John Moores	Primates, behaviour, hand preference	Warrington
Joanna	Harding	BA	Psychology	Chester C	Chilean flamingos, behaviour	Stagsden
Thomas	Harding	BSc	Biological Sciences	Manchester Metropolitan	Primates, behaviour, spacial use	Manchester
Rebecca	Harrison	PhD	Archaeology and Prehistory	Sheffield	Hominids, limb preference	Sheffield
Gillian	Haydock	BSc	Animal Behaviour	Chester C	Giraffes, behaviour	Nelson
Suzanne	Hayes	BSc	Animal Behaviour	Chester C	Giraffes, behaviour	Wigan
David	Henderson	BSc	Zoology	Manchester	Chimpanzees, non-vocal communication	Dorking
Kimberley	Hockings	BSc	Zoology	Liverpool	Chimpanzees, social behaviour	Bournemouth
Rachel	Hodgson	BA	Psychology	Chester C	Chilean flamingos, behaviour	Sheffield
Sally	Hodgson	BSc	Zoology	Liverpool	Blue-eyed cockatoos, time budgeting	Thetford
Michelle	Holford	MSc	Evolutionary Psychology	Liverpool	Humans, behaviour, conflict	Devon
Christopher	Holloway	BSc	Applied Zoology	Liverpool John Moores	Caribbean flamingo, parental behaviour	Valley, Anglesey
Shaun	Holmes	BSc	Biological Sciences	Manchester Metropolitan	Mandrills, behaviour	Nottingham
Michael	Howell	BSc	Applied Biology	Liverpool John Moores	Cotton-top tamarins, Spider monkeys, behaviour	Manchester
Lucy	Johnson	BSc	Animal Behaviour	Chester C	Spider monkeys, enrichment	Rowley Regis
Stephanie	Jones	BSc	Applied Zoology	Liverpool John Moores	Rodrigues fruit bats, aggressive behaviour	Gaerwen, Anglesey
Kate	Jordan	BSc	Psychology	Chester C	Chimpanzees, male behaviour	Chester
Jessica	Kervella	BSc	Biological Sciences	Manchester Metropolitan	Aquarium species, behaviour	Manchester
Uzma	Khan	MSc	Animal Behaviour and Welfare	Edinburgh	Orang utans, activity levels	Pakistan
Anouska	Kinahan	PhD	Zoology	Trinity C, Dublin	South American tapirs, behaviour	Dublin
Hilde	Klepsland	BA	Tourism Management	Salford	Zoos as tourist attractions, development	Norway
Thiseas	Kokkinos	BSc	Applied Biology	Liverpool	Chimpanzees, behaviour, grooming	Athens
Nichola	Lawrence	BA	Psychology and Theatre Studies	Liverpool	Chimpanzees, mother-infant behaviour	Chester

First Name	Last Name	Qualification	Subject	University/College	Zoo area of study	Home
Penelope	Lowe	BSc	Animal Behaviour	Chester C	Seba's fruit bats, nutrition	Windsor
Sarah	Mason	BSc	Zoology	Liverpool	Time budgeting in jaguars	Herts
Kate	Maylor	BSc	Animal Behaviour	Chester C	Giraffe section, data analysis	Bebington
Christopher	MacAlister	BSc	Zoology	Liverpool	The observer stimulus	Devon
Carmen	McKenzie	BSc	Psychology	Bolton Institute	Chimpanzees, termite fishing	Workington
Michelle	McVeigh	BSc	Biology	Manchester Metropolitan	Sulawesi macaques, behaviour, aggression	Cumbria
Rehannah	Mian	BSc	Biology	Manchester Metropolitan	Zoos, education	Nottingham
Penny	Monroe	BSc	Psychology	Chester C	Macaques, play behaviour	Isle of Man
Rachel	Montgomery	BSc	Zoology	Liverpool	Sulawesi macaques, behaviour	Milngavie
James	Nicholas	BSc	Combined Biochemistry and Zoology	Liverpool	Black rhino, behaviour, oestrus	Wrexham
Collette	O'Neill	BSc	Psychology and Health	Liverpool	Chimpanzees, human, behaviour	Liverpool
Hannah	Parathian	BSc	Zoology	Liverpool	Chimpanzees, behaviour, social	St.Albans
Jaclyn	Pearson	BSc	Zoology	Liverpool	Lions, tigers, enrichment	Leek
Sarah	Perry	BSc	Zoology	Liverpool	Felids, enrichment	Stoke on Trent
Elizabeth	Poll	BSc	Psychology and Zoology	Liverpool	Orang utans, behaviour, social	Chorley
Victoria	Powell	PhD	Conservation Biology	Manchester Metropolitan	Rodrigues fruit bat, conservation	Chester
Claire	Price	BSc	Psychology	Liverpool	Spider monkeys, enrichment	Eastbourne
Linzi	Priest	BA	Photography	Wolverhampton	Primates, photography	Rowley Regis
Eileen	Raeside	BSc	Zoology	Liverpool	Rodrigues fruit bats, behaviour	Tipton
Louise	Robinson	BA	Archaeology and Prehistory	Sheffield	Primates, behaviour, social	Durham
Sally	Robinson	BSc	Zoology	Liverpool	Mandrills, Campbell's monkeys, enrichment	Crewe
Angela	Ryan	BSc	Applied Zoology	Liverpool	Colombian spider monkeys, behaviour	Sutton, Surrey
Nana	Satake	BSc	Zoology	Liverpool	Primates, behaviour, social	Camberley
Alexander	Sawyer	BSc	Zoology	Liverpool	Coatis, behaviour, social	Ormskirk
Dr Colleen	Schaffner		Research Associate	Chester C	Primates, regulation of social behaviour	Bromborough
Sarah	Schofield	BSc	Psychology	Chester C	Chimpanzees, male behaviour	Chester
Rosalind	Sedman-Smith	BSc	Animal Behaviour	Chester C	Waldraap Ibis, behaviour, social interactions	Kidderminster
Laura	Sensicle	BSc	Biomedical Sciences	King's College, London	Chilean flamingos, mating behaviour	Kelsall Cheshire
Hayley	Shakesheff	BSc	Psychology	Chester C	Chilean flamingos, behaviour	Ledbury
Martin	Shaw	BSc	Psychology and Sport	Liverpool	Chimpanzees, behaviour, dominance	Middlesbrough
Claire	Shearwood	BSc	Zoology	Liverpool John Moores	Meerkats, behaviour	Chester
Ellen	Simmonds	BSc	Zoology	Liverpool	Chimpanzees, reconciliation	Nottingham
Andrew	Skeath	BSc	Psychology and Sociology	Liverpool	Primates, hand preference	Shipston-on-Stour
Laura	Smith	BSc	Zoology	Durham	Jaguars, space utilisation	Northwich
Lucilla	Spini	DPhil	Biological Anthropology	Oxford	Chimpanzees, juvenile behaviour	Oxford
Anna	Stamp	BSc	Psychology and Health	Liverpool	Jaguars, enrichment	Wirral
Michael	Smith	BSc	Zoology	Liverpool John Moores	Free flying birds, feeding behaviour	Sheffield
Jo	Stanway	BSc	Animal Behaviour and Welfare	Chester C	Otters, enrichment	Biddulph, Staffs
Donna	Stenton	BSc	Psychology	Chester C	Chimpanzees, behaviour	Chester
Donna	Stenton	BA	Psychology and Drama	Chester C	Chimpanzees, alpha male dominance behaviour	Riddlesden, W Yorks
Jennifer	Tarry	BSc	Psychology	Chester C	Chimpanzees, behaviour	Chester
Jennifer	Tarry	BA	Psychology and Drama	Chester C	Chimpanzees, behaviour, offspring	Leicester
Rosemary	Taylor	BSc	Zoology	Liverpool	Bird species, behaviour	Leigh
Kokkinos	Thiseas	BSc	Applied Biology	Liverpool John Moores	Chimpanzees, behaviour, dominance	Greece
Claire	Thomas	BSc	Applied Zoology	Liverpool John Moores	Capuchin monkeys, foraging behaviour	Runcorn
Joanne	Thorne	MSc	Evolutionary Anthropology	Durham	Ring-tailed lemurs, reciprocal altruism	Bristol
James	Treanor	BSc	Biology	Liverpool John Moores	Californian sealions, land use	Stalybridge
Daniel	Trueman	BSc	Human Biology	Leeds	Primates, handedness	Oldham
Claire	Turney	BSc	Applied Zoology	Liverpool	Sulawesi macaques, behaviour	Harpenden
Martin	Urquhart	BSc	Animal Behaviour	Chester C	Spider monkeys, social bonding	Chester
Claire	Waldron	BSc	Psychology	Liverpool	Jaguars, behaviour	Durham
Bridget	Waller	MSc	Evolutionary Psychology	Liverpool	Chimpanzees, social behaviour	Folkstone
Katherine	Way	BSc	Biological Sciences	Manchester Metropolitan	Sulawesi macaques, post-conflict behaviour	Winchester
Shaun	Williams	BSc	Animal Behaviour	Chester C	Ring-tailed lemurs, referential signalling	Wolverhampton
Kerry-Anne	Woodbine	BSc	Zoology	Liverpool	Californian sealions, breeding behaviour	Norwich
Sara	Wren	BSc	Animal Behaviour and Welfare	Chester C	Fresh-water stingrays, social interactions	Wrexham
Isabella	Villano	DPhil	Anthropolgy / Primatology	Oxford	Chimpanzees, Bonobos, behaviour	Oxford

Chester Zoo strongly supports conservation, animal welfare, education and science through the numerous publications of staff, students and associates. A selected list is given but, for reasons of space, first degree theses are mainly excluded. An index and copies of these are held in the Library.

Aureli, F and Schaffner, C (2001) Wild and zoo experiences: The benefits of integrating behavioural research from captivity and the field. **In:** S Wehnelt and C Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research*. North of England Zoological Society, UK: 80.

Austin, R and Wehnelt, S (2001) Social interactions and burrow occupancy in a captive colony of adolescent tuatara *Sphenodon punctatus*. *Zoo Federation Research Newsletter* 2 (1): 2.

Bagnall, A (2001) ABWAK in America. *Ratel* 28 (1): 1-4.

Bagnall, A (2001) Subspecific variation of the Chattering lory (*Lorius garrulus*) and its implications for captive management. **In:** S Wehnelt and C Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research*. North of England Zoological Society, UK: 82-89.

Bailey, G (2001) Elephant enrichment. *Chester Zoo Life* (Autumn 2001): 6.

Baines, C and Hosey, G (2001) Interactions between Sulawesi macaques (*Macaca nigra*) and human visitors at Chester Zoo. *Zoo Federation Research Newsletter* 2 (3): 1.

Beilfuss, R (November 2000) Saving the Jewel of the Sahel. *International Crane Foundation Quarterly Newsletter* 26 (4): 2.

Best, D (2001) *The effectiveness of using a restricted range of Chaetodon species as indicators of coral reef habitat with reference to behaviour in the Wakatobi Marine National Park, Indonesia*. Chester Zoo Studentship report, North of England Zoological Society, UK.

Bird, S, ed (2001) *Zoo Plant Group Newsletter* (June 2001).

Bird, S, ed (2001) *Zoo Plant Group Newsletter* (December 2001).

Bird, S (2001) Creating South America. *Chester Zoo Life* (Spring 2001): 8.

Brunger, D (2001) Reproductive behaviour of female De Brazza's monkeys *Cercopithecus neglectus* at Chester Zoo. *Zoo Federation Research Newsletter* 2 (4): 3.

Brunger, D (2001) Reproductive behaviour of female De Brazza's monkeys *Cercopithecus neglectus* at Chester Zoo. **In:** S Wehnelt and C Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research* [poster abstract]. North of England Zoological Society, UK.

Caws, C and Aureli, F (2001) Temporal changes in chimpanzee behaviour during space restriction. *Zoo Federation Research Newsletter* 2 (4): 2.

Caws, C and Aureli, F (2001) Temporal changes in chimpanzee behaviour during space restriction. **In:** S Wehnelt and C Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research* [poster abstract]. North of England Zoological Society, UK.

Cocks, S (2001) Saving the Egyptian Tortoise. *Chester Zoo Life* (Summer 2001): 16-17.

Crumpler, M, Wehnelt, S and Reid G McG (2001) Freshwater sting rays (Potamotrygonidae) bred at Chester Zoo Aquarium. *Proceedings of the First International Elasmobranch Husbandry Symposium*. Orlando, Florida, USA, October 2001 [abstract].

Davis, N, Schaffner, C and Smith, T (2001) Preliminary validation of cortisol assay in Spider monkeys at Chester Zoo. **In:** S Wehnelt and C Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research* [abstract]. North of England Zoological Society, UK: 117.

Dentith, K (2001) In search of the Bengal tiger. *Chester Zoo Life* (Autumn 2001): 22.

Dibb, S and Simkin, L (with Vere, CMN) (2001) Chester Zoo - Combining Marketing and Conservation. *The Marketing Casebook: Cases and Concepts* (2nd Ed). Thomson Learning, London: 164-179.

Garnier, JN (2001) *Non-invasive reproductive monitoring of Black rhinoceros females in the wild: Patterns of fertility and the influence of environmental factors*. PhD thesis in Veterinary Medicine. University of London.

Gaskell, C and Reid, G McG (2000) Oliver King: A distinguished scientist, he pioneered ideas in animal welfare. *The Guardian* (January 2000).

Khan, U (2001) *An evaluation of diet and the activity levels of captive Orang utans: A comparison with wild conspecifics*. MSc thesis in Applied Animal Behaviour and Animal Welfare. University of Edinburgh.

Livingstone, S R (2001) *University of Glasgow Trinidad Expedition 2000*. Chester Zoo Studentship report, North of England Zoological Society, UK.

Mackenzie, C, Blake, S and Rhino Team (2001) Enrichment for rhino. *Chester Zoo Life* (Winter 2001): 8.

Marsden, S J, Pilgrim, J D, and Wilkinson, R (2001) Status, abundance and habitat use of Blue-eyed Cockatoo *Cacatua ophthalmica* on New Britain, Papua New Guinea. *Bird Conservation International* 11: 151-160.

Marsh, S (2001) The Environmental Enrichment Group and its activities at Chester Zoo. **In:** S Wehnelt and C Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research* [abstract]. North of England Zoological Society, UK: 17.

Martin, JE (2000) *The effect of rearing on the behaviour and personality of captive chimpanzees*. PhD thesis in Philosophy. University of Manchester.

McGeorge, I (2001) Glimmer of hope for a threatened species. *Chester Zoo Life* (Winter 2001): 23.

McGeorge, I (2001) It's no honeymoon for the Aruba Island Rattlesnake. *Chester Zoo Life* (Autumn 2001): 23.

McKeown, S and Howse, P (2001) Entering the Twilight Zone Bat Exhibit at Chester Zoo. *American Association of Zoos and Aquariums Journal* (October 2001): 9-10.

McKeown S, (2001) The effect of foot and mouth disease on zoos in the UK. *Journal of the International Zoo Educators' Association* 37: 20-21.

McKeown, S (2000) 1999 European Zoo Educators' Conference. *Journal of the International Association of Zoo Educators* 36: 24-25.

McKeown, S (2001) Assault on the senses. *Chester Zoo Life* (Spring 2001): 9.

McLeman M and Wehnelt S (2001) Space utilisation of Seba's short-tailed bats *Carollia perspicillata* in a free-flight enclosure at Chester Zoo under different light conditions. *Zoo Federation Research Newsletter* 2 (2): 1.

Metcalf, J (2001) *The Nosy Hara-Radama Islands Survey Initiative*. Chester Zoo Studentship report, North of England Zoological Society, UK.

Morris, A (2001) Echos of Mauritius. *Chester Zoo Life* (Summer 2001): 12-13.

Morris, A (2001) Birds and bats. *Chester Zoo Life* (Autumn 2001): 21.

Morris, P (2001) Web TV - when will it become part of our regular viewing? *Chester Zoo Life* (Autumn 2001): 18.

Nixon, S (2001) Living with gorillas. *Chester Zoo Life* (Winter 2001): 16-17.

Pilgrim, M (2001) Ecuadorian Amazon (*Amazona autumnalis lilacina*) EEP Annual Report 2000 **In:** B Hiddinga and K Brouwer (eds). *EEP Yearbook 1999/2000 including proceedings of the 2000 EAZA Conference Aalborg, 19-24 September 2000*. EAZA Executive Office, Amsterdam: 167-169.

Pilgrim, M (2001) Black rhino and red elephants. *Chester Zoo Life* (Winter 2001): 14-15.

Powell, V (2001) Research on Rodrigues. *Chester Zoo Life* (Autumn 2001): 20.

Powell, V (2001) The distribution, dispersal and conservation of the Rodrigues fruit bat *Pteropus rodricensis* - a brief report. *Zoo Federation Research Newsletter* 2 (3): 3.

Powell, V (2001) Population status, feeding ecology and conservation of the Rodrigues fruit bat (*Pteropus rodricensis*). **In:** S Wehnelt and C Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research*. North of England Zoological Society, UK: 79.

Rees, P A (2001) The history of the National Elephant Centre, Chester Zoo. *International Zoo News* 48 (3): 170-183.

Reid, G McG (2000) Review: R McConnell 'Land of Waters: Explorations in the Natural History of Guyana, South America'. *Fish and Fisheries* 1 (4): 360-361.

- Reid, G. McG. (2001) Keynote address: 'The role of biotechnology and low temperature biology in wildlife conservation'. *Proceedings of the Society for Low Temperature Biology Annual Scientific Meeting, April 2001*. Putteridge Bury Conference Centre, University of Luton, UK.
- Reid, G. McG. (contributor, 2001) *From the Forest to the Sea: biodiversity connections from Guinea to Togo*. Proceedings of the conservation priority setting workshop for the Upper Guinea forest ecosystem, held in Ghana, 1999. Washington: Conservation International.
- Reid, G. McG. (2001) Biotechnology. In C. E. Bell (ed) *Encyclopaedia of the World's Zoos 1*. Fitzroy Dearborn, Chicago, USA: 134-136.
- Reid, G. McG. and Hall, H. (2001) EAZA Fish and Aquatic TAG Annual Report 2000. In B. Hiddinga and K. Brouwer (eds) *EEP Yearbook 1999/2000 including proceedings of the 2000 EAZA Conference Aalborg, 19-24 September 2000*. EAZA Executive Office, Amsterdam: 15-20.
- Reid, G. McG. and Hall, H. (2001) Fish and Aquatic Invertebrate Taxon Advisory Group (FAITAG). In M. Farrell and N. Bemment (eds) *Joint Management of Species Programmes Annual Report 2000*. The Federation of Zoological Gardens of Great Britain and Ireland, London, England: 17-22.
- Reid, G. McG. (contributor, 2001) *Results of the Conservation Projects Identification Workshop for Europe and Africa*. Köln, Germany, 3-5 July. World Association of Zoos and Aquariums.
- Reid, G. McG. (2001) La conservation dans l'histoire et l'évolution des aquariums publiques. *Bulletin de l'Institut océanographique, Monaco*. No. spécial 20, fascicule 2: 83-89.
- Reid, G. McG. (2001) Commercial sharks: the global rise of aquariums versus responsibility for conservation. In Reid, G. McG. and Jaques, F. (eds) *Proceedings of the 3rd International Conference on Zoo Marketing*. World Association of Zoos and Aquariums/European Association of Zoos and Aquaria: 81-84.
- Reid, G. McG. and Jaques, F. (eds) (2001) *Marketing 21st Century Zoos and Aquariums*. CD-Rom of Proceedings and Workshops 1997-2001. WAZA/EAZA.
- Rowlands, T. (2001) Raising Oliver - A very tall tale! *Chester Zoo Life* (Spring 2001): 6.
- Rowlands, T. (2001) Rearing maned wolves. *Chester Zoo Life* (Winter 2001): 6-7.
- Russell, H. (2001) Jaguar car meets jaguar cat! *Chester Zoo Life* (Winter 2001): 12-13.
- Sanderson, S. (2001) Protecting our animals from foot and mouth disease. *Chester Zoo Life* (Summer 2001): 14.
- Schaffner, C. (2001) The Social Life of a Spider Monkey. *Chester Zoo Life* (Summer 2001): 6-7.
- Shrestha, TK. (2001) *Conservation Status of the Mahseer in the Himalayan Rivers of Nepal*. Chester Zoo Studentship Report, North of England Zoological Society, UK.
- Spini, L., Sanderson, S. and Ormerod, N. (2001) Chester Zoo Chimpanzee (*Pan troglodytes*) Breeding Centre: A brief demographic profile for 1989-2001. In: S. Wehnelt and C. Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research*. North of England Zoological Society, UK: 126-136.
- Spooner, N., Shaw, D. and Crumpler, M. (2001) The Supporting Cast for Spirit of the Jaguar. *Chester Zoo Life* (Spring 2001): 18-19.
- Struebig, M. (2001) *Voluntary work in Tanjung Puting National Park, Kalimantan, Indonesia*. Chester Zoo Studentship report, North of England Zoological Society, UK.
- Struebig, M. (2001) Who says money doesn't grow on trees? *Chester Zoo Life* (Autumn 2001): 12.
- Turk, LMH. (2001) *The estimated population and habitat preference of the sun birds, flower peckers and white eyes on Buton Island, South East Sulawesi*. Chester Zoo Studentship report, North of England Zoological Society, UK.
- Vere, CMN. (2001) Chester is changing. *ZOOstoday* (Autumn/Winter 2001). Independent Zoo Enthusiasts Society, UK: 6-12.
- Walker, S. (2001) *Jaguar House at Chester Zoological and Botanical Gardens*. ISSN 0971-6378 Zoos' Print, 16 (8), August 2001: 1-3.
- Wehnelt, S. and Hudson, C. (eds) (2001) *Proceedings of the 3rd Annual Symposium on Zoo Research*. North of England Zoological Society, UK.
- Wehnelt, S., Langford, D. and Laven, C. (2001) The Andean Condor - A Symbol of Power and Grace. *Chester Zoo Life* (Spring 2001): 12-13.
- Wehnelt, S., Rees, P. and Spooner, N. (2001) *The new elephant exhibit at Chester Zoo - Combining high husbandry and welfare standards*. International Elephant and Rhino Research Symposium, Vienna, Austria, June 2001 [abstract].
- Whitbread, S. (2001) *Motty the Hybrid Elephant at Chester Zoo*. *Independent Zoo Enthusiasts Society* 17 (Summer 2001): 12-15.
- Wilkinson, R. (contributor, 2001) *Blue-eyed Cockatoo Bird Conservation International* 11 (3). Bird Life International, Cambridge University Press.
- Wilkinson, R. (2001) Bird Review. *Chester Zoo Life* (Spring 2001): 16-17.
- Wilkinson, R. (ed) (2001) *Supporting Conservation Worldwide*. North of England Zoological Society, UK.
- Wilkinson, R. (2001) Chester Zoo. In C. E. Bell (ed) *Encyclopaedia of the World's Zoos 1*. Fitzroy Dearborn, Chicago, USA: 230-236.
- Wilkinson, R. (2001) Chester Zoo Bird Review 2000. *Avicultural Magazine* 107 (2): 69-75.
- Wilkinson, R. (2001) EAZA Parrot TAG Annual Report 2000. In B. Hiddinga and K. Brouwer (eds) *EEP Yearbook 1999/2000 including the proceedings of the 2000 EAZA Conference Aalborg, 19-24 September 2000*. EAZA Executive Office, Amsterdam: 137-139.
- Wilkinson, R. (2001) Quest to Paradise, Papua New Guinea. *Chester Zoo Life* (Winter 2001): 10-11.
- Wilkinson, R. (2001) Palm Cockatoo (*Probosciger aterrimus*) EEP Annual Report 1999. In B. Hiddinga and K. Brouwer (eds) *EEP Yearbook 1999/2000 including the proceedings of the 2000 EAZA Conference Aalborg, 19-24 September 2000*. EAZA Executive Office, Amsterdam: 143-144.
- Wilkinson, R. (2001) Blue-eyed Cockatoo (*Cacatua ophthalmica*) ESB Annual Report 1999. In B. Hiddinga and K. Brouwer (eds) *EEP Yearbook 1999/2000 including the proceedings of the 2000 EAZA Conference Aalborg, 19-24 September 2000*. EAZA Executive Office, Amsterdam: 151.
- Wilkinson, R. (2001) *Blue-eyed Cockatoo (Cacatua ophthalmica) ESB Studbook Fourth Edition - Data current to 31/12/2000*. North of England Zoological Society, UK.
- Wilkinson, R. (2001) *Blue-eyed Cockatoo (Cacatua ophthalmica) European Studbook, Fourth ESB Edition*. North of England Zoological Society, UK.
- Wilkinson, R. (2001) Working for Hornbills in Thailand. *EAZA News* 36: 14-15.
- Wilkinson, R. (2001) First class chicks. *Chester Zoo Life* (Autumn 2001): 10.
- Wilkinson, R. (2001) Hornbills in Thailand. *Chester Zoo Life* (Autumn 2001): 11.
- Wilkinson, R. (2001) Blue-eyed cockatoos in New Britain. *Avicultural Magazine* 107 (4): 146-148.
- Wilkinson, R. and Bagnall, A. (2001) Parrot TAG. In M. Farrell and N. Bemment (eds) *Joint Management of Species Programme, Annual Report 2000*. Federation of Zoological Gardens of Great Britain and Ireland, London, England: 28-29.
- Williams, S. (2001) Arabian Birdlife (Spring 2001): 20-21.
- Wood, E. M. (2001) *Collection of coral reef fish for aquaria: global trade, conservation issues and management strategies*. Marine Conservation Society, UK.
- Woodward, A. and Carnivore Team (2001) Sealion Beach. *Chester Zoo Life* (Autumn 2001): 8-9.
- Woodward, J. (2001) I didn't know the animals could read! *Chester Zoo Life* (Autumn 2001): 7.
- Woolham, A. (2001) Management of Blue-eyed Cockatoos at Chester Zoo. In R. Wilkinson and A. Bagnall (eds) *JMSP Parrot TAG Annual Report 1999/2000*. North of England Zoological Society, Chester, UK.
- Yarwood, C. (2001) Zoo help for wild Orang utans. *Chester Zoo Life* (Summer 2001): 18-19.
- Yarwood, C. (2001) Social enrichment for Orang utans. In: S. Wehnelt and C. Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research* [abstract]. North of England Zoological Society, UK: 167.
- Zimmermann, A. (2001) Jaguars and Ranchers. *Chester Zoo Life* (Summer 2001): 10-11.
- Zimmerman, A. (2001) Conservation@ChesterZoo - The International Programme. *Chester Zoo Life* (Spring 2001): 10-11.
- Zimmermann, A. (2001) The role of zoos in conservation. In: S. Wehnelt and C. Hudson (eds) *Proceedings of the 3rd Annual Symposium on Zoo Research* [abstract]. North of England Zoological Society, UK: 78.

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



North of England Zoological Society

The Society would like to thank everyone who helped during one of the most difficult years in our history - Council, Members, Fundraising Advisory Board, Development Board, National Contact Group, Patrons, Benefactors, Individual and Corporate Adopters, Permanent and Seasonal Staff, Work Experience Students, Visiting Researchers, the Media, Chester City Council, Ellesmere Port and Neston Borough Council, Cheshire County Council, North West Tourist Board, North Wales Tourism, Consortia Members, our Volunteers and our many Visitors and Friends. In particular we would like to acknowledge all those who gave us donations or goods during and after the six week period of closure as a precaution against foot and mouth disease. It is wonderful to realise just how much support we have. **Thank you one and all!**

We are also extremely grateful to our Suppliers and Contractors for so much effort. In particular, we wish to thank *McCormicks* and *Read Construction Ltd*, for finishing the *Spirit of the Jaguar* on time, despite the constraints of the biosecurity measures in place because of foot and mouth disease.

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

©Chester Zoo 2002
This Report may be freely
copied and stored by
electronic means in the
interests of conservation
and study, without further
formal permission

For further information please write to:
The Director
Chester Zoo
Caughall Road
Upton-by-Chester
Chester CH2 1LH

Tel: 01244 380280
Fax: Administration 01244 371273
Fax: Animal Division 01244 381352
E-mail marketing@chesterzoo.co.uk
internet www.chesterzoo.org

Design and origination by
MailBook Publishing
Widnes, Cheshire
0151 423 6012

Printed by Stephens and George
on 80% recycled paper

Carlos, the spotted male Jaguar (above) and the black female Ebony, came to us from Rome Zoo in March to be the first inhabitants of Spirit of the Jaguar

North of England Zoological Society Gold Medallists



1994 - The first Gold Medal of the Society was awarded to Dr Jane Goodall in our Golden Jubilee Year for her services to zoology, especially for pioneering research work in Africa with the chimpanzees at Gombe.



1995 - Dr Michael Brambell, Zoo Director from 1978 - 95 was the second person to be honoured. His period as Director saw the Zoo fully established as a major conservational organisation.



1998 - Sir David Attenborough was our third medallist, and enchanted us with his presentation of his life's work in communicating natural history. The medal was presented by our President, His Grace, The Duke of Westminster.



1999 - Deputy Prime Minister. The Rt. Hon. John Prescott MP received the Gold Medal for his distinguished contribution to conservation and the environment.



2000 - Dr Lee Durrell, Honorary Director of the Durrell Wildlife Conservation Trust was awarded the Gold Medal for her lifelong services to zoology and conservation. She had previously visited the Zoo in 1987, giving a long-remembered illustrated lecture with her husband, Gerald Durrell.

The sidebar design has been created by Vic Sankey of Mailbook Publishing from a photograph of Carlos' unique spot pattern.