



# 1996 ZOO REVIEW

*Annual Report of the North of England Zoological Society*

nineteen ninety six



**Mission**

The Mission of Chester Zoo is to promote conservation by the breeding of rare and endangered animals and by educational, recreational and scientific activities.



*Karha has delighted our visitors all through the year*

North of England Zoological Society  
Chairman's **PREFACE**

This has been the most successful trading year for the zoo since 1989 and with cash flow surpassing all records. It has also been notable for making great progress in furthering the strategic aims of the Society. In the important areas of conservation, animal welfare, education and interpretation as well as service to the public, our achievements have been remarkable and are reported in detail in the pages which follow.



Our year-end visitor number of 869,222 represents a 14% increase on 1995, and confirms Chester Zoo's position as the North West's premier outdoor tourist attraction. The surplus generated of £350,000 enables us to increase investment in the zoo. At the same time we have reduced our overdraft burden by some £400,000. We have continued to provide excellent value for our visitors by the introduction of new animal exhibits and have updated and improved older ones. In retailing and catering, the *Ark* shop and *Oasis* restaurant provide visitors with bright, modern services as they enter the zoo through the splendid new entrance off the A 41. This was formally opened by The Lord Mayor of Chester, Councillor Lilian Price.

The commercial success of 1996 has been matched by the high national and international recognition achieved by the zoo as a vigorous scientific organisation. During the year, staff have hosted specialist meetings and have been sought after speakers at international conferences.

Their contribution to the better understanding of the scientific and other issues surrounding the world's threatened species (many of which are represented in the collection) places Chester Zoo at the forefront of world wide conservation initiatives.

All this is being achieved at a time of both internal and external changes. Within the zoo, staff reorganisation has been carried out both as a result of retirements and the establishment of new posts. The Director has finished his first year in office at a turbulent time. The uncertainty existing last year regarding the proposed *Deep Sea World* development has been replaced with the certainty of this major new animal attraction being established a short distance away. We have reached a business-like accord with *Deep Sea World* and must learn to live successfully with competition. Our response is to make the zoo a most exciting and memorable outing for our visitors in the region, at a price that ensures good value for money. Our high achievements this year confirm that we are indeed capable of delivering just that.

In accordance with our mission statement, we will continue to strive for excellence in the care of our animals, in services to the public and in the furtherance of scientific understanding. I congratulate the Director, staff and volunteers for making 1996 such a resounding success.

With the opening to the public of our spectacular *Monkey Islands* in 1997, visitors will have the most exciting and lively welcome as they start their tour!

*Beatrice J Jones*  
Chairman



*A moment of quiet over the canal towards the Giraffe paddock as Mia takes food from the windlass*

Chairman's Preface	2	Zoo Lectures and Conferences	36
Affiliations	3	External Consultants and Advisors	37
1996 Highlights	4	Information Technology	38
Director's Overview	5	1996 Accounts - Council Report	39
1996 Summary	6	Responsibilities of Council	40
Presidency and Council	8	Auditors' Report	40
Committees and Terms of Reference	9	Financial Activities	41
Management Organisation	10	Balance Sheets	42
Staff List	11	Cash Flow	43
Volunteer List	12	Notes to Accounts	44
External Committees	13	Financial Overview	47
The Zoo Environment / Health and Safety	14	Worldwide Activities	49
Performance Indicators	15	Livestock Review	
Veterinary Review	16	Conservationally Sensitive Species List	
Conservation Review	17	Explanation of codes used	50
Animal Division - Mammals	18	References	50
Animal Division - Birds	19	Mammals	51
Animal Division - Herpetofauna	20	Birds	51
Animal Division - Aquarium	21	Reptiles	52
Animal Division - Animal Supplies	21	Amphibians	52
Animal Division - International Collaboration	22	Fishes	52
Animal Division - Conservation Co-ordination	23	Invertebrates	52
Animal Division - Conservation Outreach	24	Summary	52
Animal Division - Conservation Science	25	Animal Stocklist	
Zoo Research Students	26	Text Listings	53
Zoo Work Experience Students	27	Summary	53
Zoo Publications and Theses 1996	28	Mammals	54
Education Division	30	Birds	55
Estates Division	31	Reptiles	57
Finance & Administration Division	32	Amphibians	58
Marketing Division	33	Fishes	58
Membership and Adoptions	34	Invertebrates	59
Donations, Grants and Development	35		

**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.**

Registered Charity No. 306077

Licensed under the Zoo Licencing Act 1981

## PARTNERS IN CONSERVATION

The Zoo is a member of:



Federation of Zoological  
Gardens of Great Britain and  
Ireland



World Zoo  
Organisation



European Association of  
Zoos and Aquaria



Joint Management of  
Species Programmes

Member of  
**IUCN**  
The World Conservation Union

International Union for the  
Conservation of Nature

## PARTNERS IN TOURISM

The Zoo is a member of:



ENGLAND'S  
North West  
A Region for all Seasons

North Wales Tourism



YORKSHIRE  
TOURIST BOARD



ASSOCIATION OF  
LEADING VISITOR  
ATTRACTIONS

Favourite Days Out Consortium. Welsh Borderlands Consortium.  
Vale Royal Tourism. Merseyside Tourism and Conference Bureau.  
South Cheshire Tourism Development Association.  
North Shropshire Tourism.

## elephants

The success of the Elephant Section staff in hand rearing the baby elephant **Karha** guaranteed a successful year for the zoo. After her media debut on the prestigious BBC *Blue Peter* programme when more than 143,000 youngsters voted to select her name, we obtained coverage from around the world. We persuaded *Blue Peter* to return for her first birthday. Her weight was now 355 kilos - so we weighed her against a whole class from neighbouring Acresfield Primary School. They were heavier - but the margin was a bare 31 kilos!



## giraffes

**Mia**, the giraffe, was born in May 1996, our first for 17 years. Her mother is **Samara**, and **Cormac** is her father. We very much welcome the additional interest that she has generated. A sixth giraffe, **Geraldine**, joined the collection from Whipsnade later in the year.



## condors

In December we completed the new **Condor Cliffs** aviary, built on the site of the former brown bear enclosure. With generous funding help from the estate of his aunt, the late Sally Duchess of Westminster, we naturally asked our President, His Grace the Duke of Westminster, to open it. Here the Director welcomes the Duke (right), with our Chairman, Beatrice Jones on the left.



Showing that our conservation efforts can be directly relevant to this country, we have been successful in breeding endangered **Sand Lizards** on a new vivarium site in East Zoo. This was opened in May by the outgoing Lord Mayor of Chester, Councillor Richard Short. Here the Lord Mayor and Lady Mayoress examine a tiny adult Sand Lizard. The funding for the enclosure included grants from English Nature, World Wide Fund for Nature (WWF), the Countryside Council for Wales, the European *Life* project and the Herpetological Conservation Trust.

We completed the signage of the new **Main Entrance** with a series of life-size animal shapes, designed by Turtle Graphics, who have also provided the site signage for **Condor Cliffs** and the **Let's Make Centre**.

The new Lord Mayor of Chester, Councillor Lilian Price performed the official opening of the new entrance and **Ark** shop.



Photo: Andrew Price

## Let's Make Centre



▲ The new **Let's Make Centre** in Jubilee Square. The Education Division will benefit greatly from this well designed new facility

It was opened in December by John Mercer, Managing Director of NWS Bank, whose generous grant made the building possible.



The year was full of positive changes in every area, which is a good omen for the future! Our growing partnership with the City of Chester was highlighted by the outgoing and incoming Lord Mayors (Councillors Richard Short and Lilian Price) kindly opening, respectively, the new Sand Lizard vivarium and the completed Entrance Complex and Ark shop. We made major improvements to other exhibits and facilities, both on the public side and behind-the-scenes. The Animal Division achieved a remarkable 'baby boom' in 1996 headed, of course, by the successful rearing of *Karha*. The other babies include lion cubs, camels, oranges, a giraffe (the first for many years), penguins, sand lizards (only months after the exhibit was established), seahorses and many more. Scientific study has continued in many areas, including on primates in Africa and the Zoo continues to support many conservation and fieldwork projects at home and overseas. We have hosted important conferences including the *UK Elephant Workshop* and *New Horizons in Aquatic Animal Management* involving aquatic invertebrates, fishes, amphibians, reptiles, birds and mammals! A large number of animal movements in and out of Chester have taken place nationally and internationally in 1996. In doing this, we continue to improve the genetic viability of our stock and send our offspring to other zoos for breeding programmes. Animal Supplies continued to provide good quality food and bedding at economical rates.

In the Estates Division there has been an emphasis on working to ever higher standards and on setting realistic targets for achievement and sticking to them. We have sometimes brought in specialist contractors to support the established staff, to speed up the process of renewal and to allow us to tackle a greater diversity of jobs at once. There has been unprecedented building activity and we are investing more in our 'product', by concentrating on far better animal exhibits. Major projects completed this year right on target include the: Entrance Complex and Sand Lizard vivarium (see above), Talapoin/Lemur enclosures, the Condor Cliffs aviary, Monkey Islands phases 1 and 2 and the Elephant Zero-handling facility (a key health and safety project for staff and visitors). High visitor levels produced a strong cash flow which allowed us to fund several 'extra' schemes that were not on the list for completion this year, including: *Karha's* nursery, Przewalski's Horse hardstanding and walled enclosure, double-glazed windows throughout entire Reptile area, new Aquarium Roof, new Reindeer Shed, new Pelican Shed, refurbished catering outlets, extensive land drainage and electrical projects, new animal kitchens and rear Gatehouse (formerly 'time office') improvements. Last but not least, the demolition of the old Jubilee Kiosk colonnade marks the end of an era. Maintenance work has not been overlooked, with the 'squeaking door syndrome' receiving full attention. More than 300 maintenance jobs were completed in 1996, clearing practically all outstanding requests, some dating back over two years. Very few jobs that were on the list at the beginning of the year remain (except the Director's loose door handle!). The Gardens have had another good year, collecting awards for Chester in Bloom and North West in Bloom.

The image of the Zoo has been modernised by a new Ark logo, signifying biodiversity and conservation. Along with this came a new letterhead, badges, visitor identification systems and the new style annual report. The Oakfield visitor reception area has also been refurbished and updated. There have been productive

developments in marketing strategy this year and great strides forward in public relations, including excellent TV coverage of *Karha* on Blue Peter; and an active programme of other events and openings, well covered in the media. Customer service is constantly being improved and 1996 saw the arrival of electric scooters for disabled visitors. Contact with the visitors is being improved with collaborative initiatives such as the Penguin keepers' talks at feed time. The Zoo Guide continues to sell well and independent sources rate it as 'the best in the country'. Chester Zoo is now marketing on the Internet and has so far had over 8000 enquiries to our excellent web site - which gained a 'Gold Paw' award! An attractive well-marketed zoo translates into excellent visitor numbers: which, at more than 869,000, is the best in recent years and up 119,000 + (or 14%) on last year. This places us along with London Zoo as the top wildlife attractions in the country. Adoptions and memberships continue to rise with 10,000 members now on our register (originally the target for the millennium!). Other typically buoyant performances are seen in catering (with, for example, *Oasis* cafeteria sales up 23%) and the Ark shop (sales up a staggering 51% thanks to Alan Jones and his team). Overall, the pence per head visitor spend is up a healthy 32%.

We warmly welcomed Stephen McKeown as Head of Education. The Library now officially reports through Education, with a back-up service now in place for our Librarian, Lynn Wilkinson. There have been major improvements in the quality and quantity of animal interpretation, signage and graphics-with these processes becoming increasingly slick and computerised. We are looking to further develop the Information Technology aspects of education in 1997. The volunteer programme is as active as ever, culminating in probably the most enjoyable Christmas Journey ever organised, with wide-ranging staff input! National Tiger Week activities were a great success, but the highlight of the year was the completion of a new *Let's Make Centre*, allowing staff and volunteers to work with children and other visitors on animal-related craft activities.

A particular emphasis has been placed on the benefits of staff training funded by the Zoo. Several staff have passed the City & Guilds Zoo Animal Management Certificate with credits and distinctions and several more continue to study through a sponsored correspondence course. Gardeners are, for the first time, taking horticultural NVQ qualifications. Many established and seasonal staff have attended a variety of day courses and conferences and, notably, have benefited from our well-organised Customer Care days. Health and Safety training courses including one on Construction Design and Management (CDM) regulations have been completed. Staff from all divisions have had overseas travel experience in their specialities and, wherever possible, the Zoo has also supported personal training initiatives to gain set qualifications, including diplomas, degrees and higher degrees in zoological research. Staff have been involved more than ever before in planning and project development. Computerisation continues throughout the zoo and network and internet links will continue to improve electronic communication, within the Zoo and externally.

1996 has seen a new Financial Controller, Mike Johnson, and a new Security Officer, Marc Boardman. Both have made significant changes to the role of their departments and many new procedures have successfully been implemented to increase the efficiency of the Zoo. We have made major inroads into improving the Zoo's position in relation to our VAT liabilities. We have also applied for external funding from the Lottery Funds. We created the new post of Development Manager in 1996 and John Regan was appointed to concentrate on fund-raising activities in 1997.

Overall, the Zoo has had a tremendously successful financial year with a tidy surplus. These excellent results have significantly reduced our bank overdraft facility and allowed us to complete, even accelerate, our demanding programmes of improvement. Certainly, animals remain 'our only shareholders' and we will continue to invest heavily in 'our product', the Zoo, in 1997.

*Dr Gordon McGregor Reid*  
Zoo Director

FUNCTIONS	OBJECTIVES	HIGHLIGHTS
<p><b>ANIMALS</b> To manage, care for and exhibit the Society's animal holdings for the purpose of conservation, education and benign scientific study. To engage in wildlife conservation programmes at home and abroad with like minded bodies.</p>	<ul style="list-style-type: none"> <li>■ To improve the management, planning, development and welfare of the Zoo's collection.</li> <li>■ Select the best balance of species so as to support objectives in conservation, education and science and also to match reasonable public expectations.</li> <li>■ Play an active role in supporting national and international zoo programmes in conservation and science.</li> </ul>	<ul style="list-style-type: none"> <li>■ <i>Karha</i>, first Asiatic cow elephant to be born and reared in the UK.</li> <li>■ First Frozen Zoo flask established in the Zoo.</li> <li>■ First Buffy-headed Capuchins born, a UK first.</li> <li>■ First breeding of Pink Pigeons, Blue Throated Conures and Pudu at Chester.</li> <li>■ First second generation captive breeding of Tadpole Shrimp - Britain's rarest crustacean.</li> <li>■ Baby boom including giraffe, lions, penguins and seahorses.</li> <li>■ Best Orang utan breeding record in Europe.</li> <li>■ Hosting of <i>UK Elephant International Conference/Workshop, New Horizons in Aquatic Animal Management and Breeders' Genetic Workshop</i>.</li> <li>■ Opening of Sand Lizard enclosure.</li> <li>■ Opening of <i>Condor Cliffs</i> enclosure.</li> </ul>
<p><b>EDUCATION</b> To provide education services and materials for schools, colleges, universities and other interest groups. To interpret the collection for visitors by provision of appropriate signage and other devices. To organize resources to meet these aims, including the volunteer programme. To support education outreach programmes at home and abroad.</p>	<ul style="list-style-type: none"> <li>■ Increase knowledge, awareness and empathy for animals and their environment, and the role and work of the Zoo for the general public, schools, colleges of higher education and professional educators at all levels.</li> <li>■ Expand the Zoo's interpretation, information and library services.</li> <li>■ Provide a worthwhile educational input in selected habitat countries to support conservation.</li> </ul>	<ul style="list-style-type: none"> <li>■ Interpretative signage for the Sand Lizard, Andean Condor and other exhibits.</li> <li>■ Successful running of Business Studies/Tourism and Leisure courses for GCSE, A Level and GNVQ students.</li> <li>■ Raising £2,000 for tiger conservation in nature during the <i>'Tiger Week'</i>.</li> <li>■ Mounting and exhibition in association with HM Customs and Excise to raise public awareness of international trade in endangered species.</li> <li>■ Completion and opening of new <i>Let's Make Centre</i>.</li> <li>■ Successful revision of <i>Christmas Journey</i> and route.</li> </ul>
<p><b>ESTATES &amp; GARDENS</b> To maintain and develop the fabric of the Zoo, upgrading existing facilities and developing new concepts for the changing Zoo environment. To ensure that the Zoo's grounds are maintained to the highest standard for animals, visitors and employees and that the Society meets all the criteria laid down by legislation, including Health and Safety and environmental considerations.</p>	<ul style="list-style-type: none"> <li>■ Efficient use of utilities.</li> <li>■ Maintain maximum use of the buildings and environs.</li> <li>■ Upgrade and refurbish the infrastructure.</li> <li>■ Construct new capital projects to the highest quality with maximum efficiency and economy.</li> <li>■ Service requests for maintenance and the supply of materials.</li> </ul>	<ul style="list-style-type: none"> <li>■ Completion of entrance complex.</li> <li>■ Completion of <i>Condor Cliffs</i> and the free range Talapoin/Lemurs exhibits.</li> <li>■ Installation of automated gates for Elephant Zero Handling.</li> <li>■ Execution of the first and second phases of <i>Monkey Islands</i> development comprising of road diversions, construction of large islands, and new entrance including new monkey enclosure, kitchen storage and mess room facilities.</li> <li>■ Winning two awards for the gardens - North West Region <i>Britain in Bloom</i> and <i>Chester in Bloom</i>.</li> </ul>
<p><b>FINANCE &amp; ADMINISTRATION</b> To provide financial control, accounting, personnel, office and security services. To manage visitor and staff entrance gates and stores. To help manage and develop the overall planning and budgeting process and support fundraising initiatives.</p>	<ul style="list-style-type: none"> <li>■ Plan, budget and manage overall Zoo cash flow.</li> <li>■ Provide financial information for Council and management.</li> <li>■ Efficiently manage personnel, secretarial functions, offices, security and health and safety matters.</li> <li>■ Advise on financial aspects of all zoo developments.</li> <li>■ Administer the Staff Pension Fund.</li> </ul>	<ul style="list-style-type: none"> <li>■ Finalised management information system on gate monies.</li> <li>■ Successful overdraft facility management during a period of high capital expenditure.</li> <li>■ Preparation and development of business sensitivity analysis.</li> <li>■ Review of Pension Fund arrangements initiated.</li> </ul>
<p><b>MARKETING</b> To achieve visitor attendance targets through effective advertising, promotional and public relations activities. To achieve trading targets through high quality retailing and catering operations. Through effective public relations, enhance the stature and presence of the Society. To provide quality information services to visitors, potential visitors and opinion formers.</p>	<ul style="list-style-type: none"> <li>■ Maximise Zoo income by achieving/exceeding budgets.</li> <li>■ Making sure that visitors so enjoy their visit, that they are motivated to return, and leave knowing something of our work.</li> <li>■ To improve visitor services, keeping the Zoo in the forefront of major tourist attractions.</li> <li>■ Sustain membership and adoptions growth.</li> </ul>	<ul style="list-style-type: none"> <li>■ Huge success in publicising <i>Karha</i>, the baby elephant, with 143,000 children voting to name her on BBC <i>Blue Peter</i>, with enormous and continuing media interest all year.</li> <li>■ Silver Award in the Large Visitor Attraction section of the North West Tourist Board Awards. Special Certificate in Duke of Westminster's Awards for Business &amp; Industry.</li> <li>■ Restoring dignity and independence to visitors with mobility difficulties through the launch of the 4 wheel scooter scheme at the Gatehouse.</li> <li>■ Bigger and better <i>Zoo Life Magazine</i> and new visitor and group functions literature.</li> <li>■ Year round through-ticketing rail/bus service achieved with <i>Merseyrail Electrics</i>.</li> <li>■ Enhanced value winter bounce-back ticketing.</li> </ul>

## PERFORMANCE

## DIRECTIONS FOR 1997

- All major animal exhibition projects completed on target, including *Condor Cliffs* and *Monkey Islands* phases 1 & 2.
- All major infra-structural projects completed, including elephant zero-handling.
- Divisional Structure reviewed and new post of Administrative Manager established.
- More than 70 scientific papers and reports produced.
- Senior keeper Steve Hogarth completed successful pilot field study of Chimpanzees in Gashaka Gumti.
- Director conducted successful field trip to Central Mexico.
- Two staff members pass City & Guilds Animal Management Course with Distinction.

- Appoint new Chief Curator
- Full specification, plans and work to begin on *Bat Cave* and *Penguin Pool* projects.
- Completion of *Monkey Islands* project.
- Completion of *Alligator Pool* and *Aztec Temple* project.
- First stage planning for *Hippo Lagoon* project.
- Conference on 'Monkeys, Apes and Man'.
- Review Veterinary Laboratory and associated arrangements.
- Review of Animal Supplies Department.

- Information and assistance provided to over 60,000 students and teachers.
- Over 9,500 hours of volunteers' time donated to the Zoo.
- Numerous interpretation projects successfully completed in co-operation with Animal Division.
- Divisional Structure review and major reorganisation of physical facilities for staff and volunteers.

- Develop new class contact based education programme responding to needs of teachers in schools with more structured feedback process.
- Develop standards for as fully integrated interpretation scheme.
- Introduction of additional activities in new *Let's Make Centre*.
- Revision of content of evening outreach talks delivered by volunteers to include more information on the Zoo's role in conservation.
- Form stronger links with tertiary education establishments.
- Develop IT projects.
- Transfer library services.

- Record number of capital and revenue projects undertaken and completed in one year.
- Computer advancement using databases for buildings and services records.
- Improved efficiency in visitors' car parking, to a rate of one every three seconds, involving five overflow car parks.
- Nine members of gardening staff attending NVQ II Amenity Horticulture course.

- Improve departmental communications on planning within and outside the Division.
- Encourage departmental initiatives and group projects.
- Increase computer awareness and training within the Division and reorganise Divisional offices to improve efficiency.
- Complete major *Monkey Islands* project.

- Most successful commercial year in the history of the zoo.
- Timely presentation of accounting reports, and prompt payment of all suppliers and creditors.
- Completion of 1996 new style SORP Accounts.
- Recruitment and training of appropriate seasonal staff across the Zoo.
- Planned enhanced personnel function.
- Successfully concluded complex business negotiations with *Deep Sea World*.

- Appoint new Personnel Manager.
- Support and develop the new Fund-Raising Department.
- Complete the local area network (LAN) for PC's.
- Initiate review of staff pay and grading.
- Review office accommodation.
- Control progress in capital expenditure budgets for the year.
- Follow through on Pension Fund review.

- Best visitor figures for five years, best surplus since 1989 and best cash flow on record.
- Retailing buoyancy restored, with sales per head 33% above 1995.
- Membership through the 10,000 target three years ahead of time.
- Both catering departments exceeded budget, and growing success of lecture hall bookings.
- *Internet* marketing site up and running well, which gains 'Gold Paw' award.
- Best ever year for media coverage.
- International Marketing Conference planned.

- Consolidate gains from 1996, in terms of building our business through publicity for the baby elephant and other arrivals, so that entire operation is strengthened.
- Greater media budgets for creative investment in the compelling visitor proposition 'Chester Zoo - always new'.
- Comprehensive review of catering operations.
- Develop in-house videography skills.
- Run a large scale visitor survey.
- Relaunch the *Rainbow* retail operation as a walk-in shop.
- Organise International Marketing Conference with Danish colleagues.

*The President*

His Grace,  
The Duke of  
Westminster  
OBE, TD, DL  
The 6th Duke  
continues the  
Grosvenor family  
support for the  
Society and  
officially opened  
the *Condor Cliffs*  
aviary in December.

*Vice Presidents*

Dinah, Lady  
Tollemache

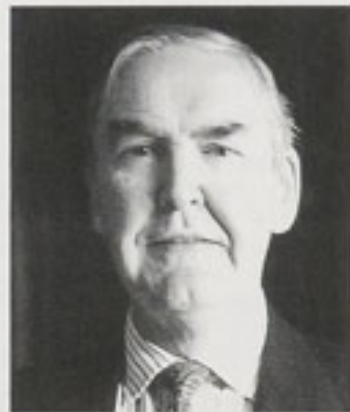
A former Member  
of Council until  
1983, and a lifelong  
zoo enthusiast.  
Lady Tollemache  
became one of our  
first Vice Presidents  
in 1987.



Professor Emeritus  
J O L King  
BSc(Agric), MVSc,  
PhD, FRCVS, C Biol,  
F I Biol  
Chairman of Council  
1972 - 1986. Former  
Dean of the University  
of Liverpool's  
Veterinary Faculty at  
Leahurst. He became a  
Vice President in 1987.

*The Council\**

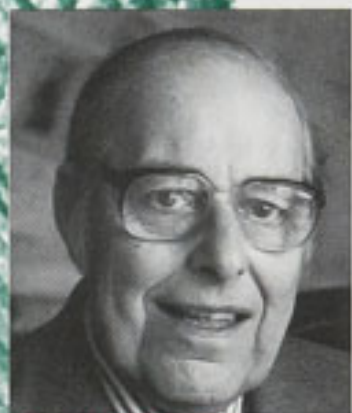
*Chairman.*  
Mrs B J Jones  
BSc  
Chairman since  
1991.  
Lecturer in  
Chemistry.



*Vice Chairman*  
Mr J H Howatt  
FCA  
Vice Chairman  
since 1986.  
Northwich-based  
executive  
recruitment  
consultant.



Mr A R Barnes BA,  
FCA, CPA (K)  
Chairman of the  
Finance Committee.  
Managing Director of  
business based in  
Hawarden, Wales.



Dr D A P Cooke  
FRCGP, FRPS  
Retired General  
Practitioner in  
Ellesmere Port.  
Wildlife  
photographer.  
Advisor GB &  
England  
swimming teams.



Miss J P Dixon  
C Chem, FRSC  
Retired Research  
Chemist. Wildlife  
photographer.



Miss K Edwards  
BSc  
Joined Council in  
1996. Zoology  
graduate. Manager of  
market support for  
merchant bank in  
London. Active  
supporter of the Junior  
Members' Club.



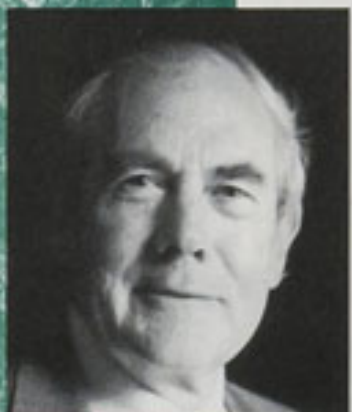
Professor  
B G Gardiner  
BSc, PhD, DSc,  
PLS  
Joined Council in  
1996. Professor of  
Zoology at King's  
College, University  
of London.  
President of the  
Linnean Society of  
London.



Mrs E M  
Livingstone  
Chairman of the  
Programmes and  
Membership  
Committee.  
Senior nursing  
sister in Greater  
Manchester.



Mr C M Mahon  
MSc  
Joined Council in  
1996. A graduate in  
Environmental  
Science. He is  
Director and Head  
of Conservation of  
the Cheshire  
Wildlife Trust.



Mr J B Makinson  
TD, MA  
Joined Council in  
1996. A retired  
solicitor from  
Chester and a long  
term supporter of  
the Society.



Mr N K  
Maybury  
MA, DM, FRCS  
Consultant  
Surgeon in  
Greater  
Manchester.



Mr T Williams  
Assistant General  
Manager,  
Chester-based  
finance company.



Mr N J W Wilson  
Continues a long-  
standing family  
link with the  
Society. Managing  
Director of  
company in  
Winsford, Cheshire.



Mr P J  
Wisniewski  
BSc, MSc  
Zoologist. Centre  
Manager of the  
Wildfowl and  
Wetlands Trust,  
Martin Mere,  
Burscough, Lancs.

\*See page 39 for changes to Council in 1996

*Committees of the North of England Zoological Society and their Terms of Reference**Finance Committee\**

Recommends financial policy to Council.

This includes reviewing pricing policy, revenue and capital budgets, long term forecasts, long and short term borrowing and lending, the allocation of financial surpluses and, at least annually, to meet the external auditors to discuss audit findings.

Rennie Barnes (Chairman)  
Hamilton Howatt  
Beatrice Jones  
John Makinson  
Tony Williams  
Nick Wilson  
Dr Gordon McGregor Reid (Director)  
Michael Johnson (Staff)  
Alan Sykes (Staff)  
Chris Vere (Staff)

*Remuneration Committee\**

Determines remuneration and conditions of service of the Director, Financial Controller and other Heads of Division.

Beatrice Jones (Chairman)  
Rennie Barnes  
Hamilton Howatt

*Programmes & Membership Committee\**

Responsible for the programme of meetings, talks, lectures and other events for members and the general public. To concentrate on achieving an identifiable formula for NEZS meetings and to pursue the goal of achieving the status of NEZS as a forum for debate and discussion of appropriate conservational and biological issues. Advises Council on membership policy.

Elizabeth Livingstone (Chairman)  
Jean Dixon  
Kathryn Edwards  
Hamilton Howatt  
Beatrice Jones  
Maria Warrington  
Dr Gordon McGregor Reid (Director)  
Stephen McKeown (Staff)  
Chris Vere (Staff)  
Alan Woodward (Staff)  
Maureen Allsopp (Secretary)

*Scientific & Veterinary Committee\**

Members	Staff
Keith Maybury (Chairman)	Dr Gordon McGregor Reid (Director)
Dr John Baker	Keith Brown
Dr John Charles-Jones	Michael Crumpler
Brian Coles	Don Dinning
Dr David Cooke	Nick Ellerton
Brian Edwards	Mark Pilgrim
Brian Livingstone	Neil Spooner
Dr Spenser Madden	Dr Roger Wilkinson
Chris Mahon	Penny Rudd (Secretary)
Pat Wisniewski	

*Consultants*

Derek Lyon (Gatehouse Veterinary Hospital)  
Noel Walker (Gatehouse Veterinary Hospital)

To advise Council on the exhibition and conservation policy of the Society, to monitor animal husbandry and veterinary care of the animal collection, and to advise on scientific and Health and Safety matters.

*Pension Fund**Trustees*

Beatrice Jones (Chairman)  
Dr Gordon McGregor Reid (Director)  
Jean Dixon  
Alan Du Cros  
Michael Johnson (Staff)  
Tony Williams

Advisors Bill Bowman  
Wm M Mercer Ltd  
David Somers  
Nikko Capital Management (UK) Ltd

To manage the superannuation fund scheme and authorise payments from there in accordance with its deed and the instructions of Council. To advise Council on matters concerning Pension policy.

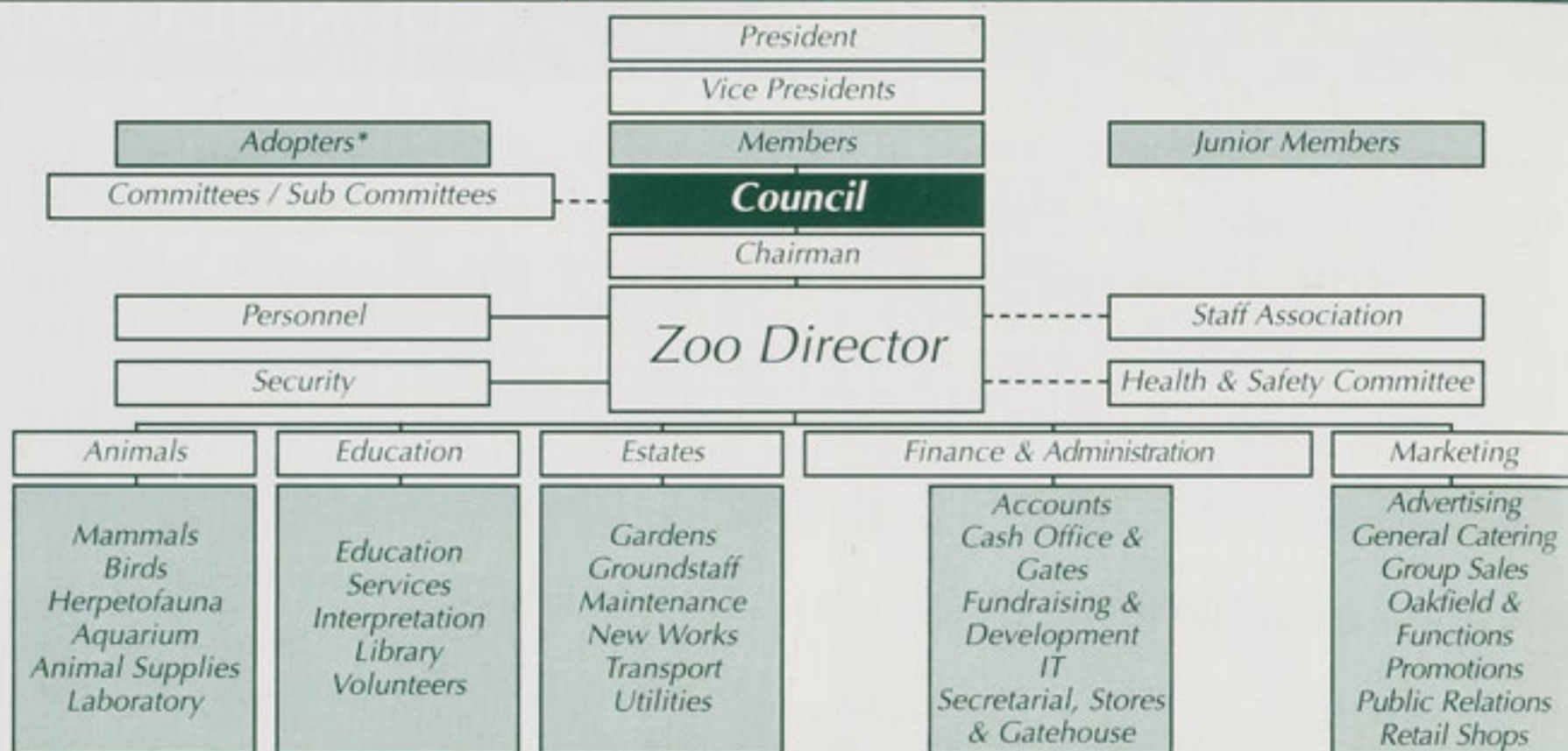
*Zoo Estates Panel*

To act as liaison between the Society, its Land Agents and the tenants of Society land.

Society	Denton Clark & Co.
Dr Gordon McGregor Reid	Michael Scott
Michael Johnson	Julian Mellis
Steve O'Brien	

\* Sub committees of Council

# North of England Zoological Society MANAGEMENT ORGANISATION



# North of England Zoological Society MANAGEMENT GROUP

**Marc Boardman**  
Security Officer

**Jayne Quinn\*\***  
Personnel Manager

**Dr Gordon McGregor Reid**  
Zoo Director and Chief Executive

**Julie Whitear**  
Director's Assistant & Oakfield Manager

**Vacant\*\*\***  
Chief Curator

**Stephen McKeown**  
Head of Education Services

**Steve O'Brien**  
Estate Engineer

**Michael Johnson**  
Financial Controller & Company Secretary

**Chris Vere**  
Marketing Manager

**Nick Ellerton**  
Curator of Mammals

**Eric Rudman**  
Head Gardener

**John Regan**  
Development Manager

**Pat Cade**  
Public Relations Officer

**Dr Roger Wilkinson**  
Curator of Birds & Research Co-ordinator

**Alan Sykes**  
Deputy Financial Controller

**Sue Clews**  
General Catering Manager

**Keith Brown**  
Herpetologist & Systems Analyst

**Penny Rudd**  
Administrative Manager (Animals)

**Alan Jones**  
Retail Sales Manager

These members of staff attend the fortnightly management team meeting

\* Adopters may or may not be members  
 \*\* wef 24th March 1997  
 \*\*\* Post advertised March 1997

**Director's Department**

*Director of Chester Zoo*  
Dr Gordon McGregor Reid,  
BSc, PhD, CBiol, FI Biol +

*Director's Assistant and  
Oakfield Manager*  
Julie Whitear, Dip Anim Mgt,  
AIQPS

*Personnel Manager  
(wef 24th March 1997)*  
Jayne Quinn, BA, MIPD,  
PG Dip HRM, Dip RSA

*Security Officer*  
Marc Boardman

**Finance &  
Administration Division**

*Financial Controller  
& Head of Division*  
Michael Johnson,  
MA, FCA, FCMA, MIMC

*Deputy Financial Controller*  
Alan Sykes, FCA, Dip BA

*Personnel Manager*  
Penny Rudd, BA, Dip RSA+

*Computer Systems Analyst*  
Keith Brown, Cert Adv Comp Sci +

*IT Assistant*  
Lorraine Ellison ☐

*Assistant Security Officers*  
Mervyn Garside\*  
Bruce West +

*Accounts Supervisor*  
Carol Campion

*Accounts & Cashiers*  
Chris Capner  
Sue Davies  
Wendy Davies\*  
Sylvia Delves\*  
Doreen Farnell  
Carmel Pearson  
Lorraine Richardson

*Development Manager  
(wef 1st Jan 1997)*  
John Regan, BA, MA, MICFM

*Membership Secretary*  
Maureen Allsopp

*Adoptions Secretary*  
Mary McManus\*

*Stores & Gatehouse Manager*  
Peter Thompson +

*Store Keepers*  
James Andrewes +  
Mark Fallon +  
John Green +

*Telephonists*  
Barbara Carr\*  
Marie Lewis  
Eunice Manning

*Timekeepers*  
James Andrewes +  
Mark Fallon +  
John Green +  
Peter Hutchins +

*Office Cleaner*  
Sue Read +

**Education Division**

*Head of Education Services  
& Head of Division*  
Stephen McKeown, BSc, PGCE

*Librarian*  
Lynn Wilkinson, ALA\*

*Administration & Teachers*  
Joan Butler\*  
Linda Davenport, LLB  
Heather Dibb\*☐  
Mark Powleson, BA  
Sara Ruks, BSc\*

*Secretary*  
Teresa Gibson, BA +☐

**Animal Division**

*Curator-in-Chief  
& Head of Division*  
Dr Gordon McGregor Reid,  
BSc, PhD, CBiol, FI Biol +

*Administrative Manager- (Animals)*  
Penny Rudd, BA, Dip RSA +

*Veterinary Laboratory Officer  
& Safety Officer*  
Don Dinning +

*Divisional Secretary*  
Karen King-Sharp

*Administrative Assistant*  
Teresa Gibson, BA +☐

*Curator of Mammals*  
Nick Ellerton

*Mammal Section Co-ordinator*  
Neil Spooner

*Research Associate*  
Dr Adam Britt, MSc, PhD,  
Dip Anim Mgt

*Student Coordinator, Mammals*  
Alan Woodward

*Mammal Keeping Staff*  
Shane Blake  
Nigel Brooks

Dave Brunger, Dip Anim Mgt  
Ian Cardiff, BSc, MSc  
Mark Cleave, Dip Anim Mgt  
Joyce Dodd

Gary Easton, Dip Anim Mgt  
John Frost, Dip Anim Mgt  
Dave Hall

Steve Hogarth, BSc, MSc, Dip Anim Mgt  
Paul Howse, BA, Dip Anim Mgt  
Mick Jones

Chris Lavender  
Andrew Lenihan

Chas MacKenzie, Dip Anim Mgt  
Ross Meredith, Dip Anim Mgt  
Phil Molyneux, Dip Anim Mgt

Niall Ormerod  
Ray Packwood, Dip Anim Mgt  
Ruth Parker, Dip Anim Mgt

Beryl Ramsay  
Rachel Roberts, Dip Anim Mgt  
Tim Rowlands

James Thwaite, BSc  
Phil Whalley, Dip Anim Mgt  
Terry Whittaker

John Willis  
Chris Yarwood, Dip Anim Mgt

*Curator of Birds &  
Research Co-ordinator*  
Dr Roger Wilkinson, BSc, PhD

*Avicultural Deputy*  
Mark Pilgrim, BSc

*Bird Keeping Staff*  
Karen Davies☐  
Stuart Davies

Darren Langford, Dip Anim Mgt  
Nick Manning  
Wayne McLeod

Roger Merry  
Paul Morris, Dip Anim Mgt  
Bruce West +

Steve Williams, Dip Anim Mgt  
Andrew Woolham

*Herpetologist*  
Keith Brown, Cert Adv Comp Sci+

*Reptile Keeping Staff*  
John Lannin\*☐  
Isolde McGeorge  
Claire Morris, Dip Anim Mgt

*Aquarist*  
Mike Crumpler

*Aquarium Keeping Staff*  
Justin Bell, Dip Anim Mgt  
Garry Dodd\*☐

*Acting Supervisor,  
Animal Supplies*  
Tony Hutchinson

*Animal Supplies Staff*  
Andrew Foxall  
Ken Newey

*Pest Controller*  
Colin Humphries\*

**Estates Division**

*Estate Engineer  
& Head of Division*  
Steve O'Brien

*Project Engineer*  
Ken Roberts, CEng

*Divisional Secretary*  
Helen Smith, AIQPS

*Maintenance Foreman*  
Ray Morrison

*Planning Supervisor*  
Peter Owens

*Maintenance*  
Ian Blythe  
Chris Bridges

Dave Holder  
Denis Kinsella  
Anthony Lennon

Paul Lindop  
Joe Parry  
Richard Read

George Scott  
Larry Shepherd  
Jason Spencer

Nick Young

*Head Groundsman*  
Peter Hughes

*Groundstaff*  
Joyce Cole  
Hazel Dean

Stephen Gilyeat  
Ray Head  
Mark Hughes

Peter Hutchins +  
Cyril Jones  
Malcolm Lloyd

George O'Connor  
Peter Powell

*Head Gardener*  
Eric Rudman

*Deputy Head Gardener*  
John Johnson

*Foreman Gardener*  
Chris Williams

*Gardens*  
Peter Braithwaite  
Keith Done

Robert Duncan  
Mark Hargreaves  
Paul Harrison

Gwyn Hewitt  
Richard Hoddinott  
Paul Leach

Al Millington  
Ray Newey  
Steve Newey

Colin Pritchard  
John Richardson  
Nigel Wood

*Transport and Plant Engineer*  
Peter Bartley

*Plant & Equipment*  
Brian Goss  
Bernard McCone

*Monorail & Boats*  
Darren Paech  
Peter Quayle

Derek Toms

*Retired - 1996*  
Arnold Johnson

*Staff Leaving in 1996*  
Gavin Bourchier

Jim Forrest, BEd  
Derek Jones  
Mark Jones

Chantelle Lindop  
Ian Roberts  
Mark Roberts

Charlie Romer

**Marketing Division**

*Marketing Manager  
& Head of Division*  
Chris Vere, MBE, TD, MA

*Public Relations Officer*  
Pat Cade, MIPR

*Divisional Secretary*  
Pauline McKee

*Group Sales Manager*  
Jane Lawson

*Group Sales Assistant*  
Sue Thomas\*

*Oakfields & Functions Manager*  
Richard Casson

*Oakfield & Functions Assistant  
Manager*  
Richard Jobson, BA

*Oakfield Chef*  
Liam Adamson

*Oakfield Second Chef*  
Dave Cowley

*General Catering Manager*  
Sue Clews

*Assistant Catering Manager*  
Brian Lloyd

*Chef Supervisor*  
Ian Patten

*Second Chef (wef 1st Jan 1997)*  
Ken Oakley

*Catering Supervisors*  
Johanna Glossop  
Phyllis Keay

Debbie Lenihan

*Staff Canteen Supervisor*  
Barbara Smith

*General Catering*  
Rachel Don\*  
Darren Keay\*

*Retail Sales Manager*  
Alan Jones

*Assistant Retail Sales Manager*  
Susanne Stanton

*Merchandise Controller*  
Wendy Locker

*Retail Supervisor*  
Celia Long

*Retail Sales Assistants*  
Sally Bratchell\*  
Brenda Jones\*

Gaynor Robinson

\* denotes Part-time  
+ denotes Dual Responsibilities  
☐ denotes Short Term Contract

**Staff Association 1996**

*Committee Chairman*  
Chas MacKenzie

*Vice Chairman & Gardens*  
John Richardson

*Groundstaff*  
Peter Powell

*Keepers*  
Mick Jones  
Roger Merry

*Retail & Catering*  
Wendy Locker

*Maintenance*  
Brian Goss

*Education & Administration*  
Linda Davenport

We are eternally grateful for the commitment of our 80 volunteers. Under the direction of Education Division, they are trained to give guided tours and run the various craft centres throughout the Zoo. They spend many hours talking to and educating our visitors to say nothing of the huge amount of work that goes into the *Christmas Journey* each year. We also owe a big 'thank you' to the 15 strong County Council Employment Training Team. **Well done to you all!**

*Dr Gordon McGregor Reid*  
*Zoo Director*

Ron Ackroyd	Mary McManus
Thelma Ackroyd	Iris Markham
Carol Anderson	Joan Mead
Claire Atkinson	Ian Mellor
David Banks	Maureen Miles
Julie Bates	Alice Milner
Roland Baulcomb	Bill Milner
Margaret Bell	Sarah Molyneaux
Cynthia Bergstrand	Pippa Mottershaw
Jane Bie	Jean Needham
Violet Brickland	Mollie Neville
Eric Chesworth	Joan Norman
Brian Cox	Ian Ogden
Margaret Cox	Maurice Panter
Glenys Crossley	Brenda Passey
John Denerley	Eileen Perry
Peter Duxbury	June Potter
Hazel Edwards	Linda Powell
Bett Ellwood	Sonia Price
Margaret Fairweather	Christine Ronaldson
Mavis Fazey	Margaret Rushton
Michael Fieldhouse	Sheila Ryan
Dorothea Fisher	Peter Sansom
Bill Fletcher	Sarah Sansom
Margaret Fletcher	Jean Schofield
Tracey Green	Edna Scovell
Annabelle Grey	Jean Seddon
Harry Halliwell	Margaret Shilliday
Gill Hanks	Joan Springett
Heather Harrison	Neil Stuart
Rose Harrison	Geoffrey Taylor
Janet Henderson	Ivy Thompson
Di Holbrook	Alison Todd
Neil Holbrook	Debbie Tong
Lynn Jones	Vikki Turtle
Geoffrey Knapp	Dennis Vickers
Ann Lighten	Maurice Whitehead
Margaret Lister	Alan Whitwell
Don Lloyd	Stella Wilkinson
Bill Longworth	Noel Williams

### Cheshire County Council



#### EMPLOYMENT TRAINING PERSONNEL

*Painting & Decorating*  
*Project Manager*

Ken Barker

*Supervisor*

Les Doyle

*Operatives*  
*(NVQ I, II and III)*

Sidney Baines

Andrew Brown

Jose Cappelán

Lee Huntingdon

Dave Jenkinson

Leslie Jones

Roy Jones

Norman Maddocks

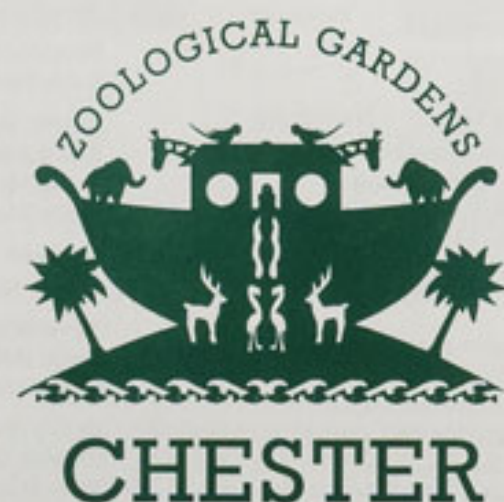
Alan Rean

Ismail Sahin

Tony Sharrock

John Sing

Alan Thomas



## STAFF ON EXTERNAL COMMITTEES

Dr Gordon McGregor Reid  
Director

- President, British Cichlid Association.
- Member of Council and of the Membership & Licensing Committee of The Federation of Zoological Gardens of Great Britain and Ireland.
- Member of Council, The Linnean Society of London.
- Member of Council and Conservation Committee, Fauna and Flora International.
- Member of World Conservation Union (IUCN) UK Committee and Species Survival Commission.
- Member of Captive Breeding Specialist Group, World Conservation Union (IUCN) and Fish Specialist Group.
- Member of the Joint Management of Species Committee, The Federation of Zoological Gardens of Great Britain and Ireland.
- Member of Research Committee, European Association of Zoos and Aquaria (EAZA).
- Member of European Union of Aquarium Curators.
- Member of the World Zoo Organisation/ International Union of Directors of Zoological Gardens.
- Member of the World Zoo Organisation (IUDZG) Marketing & Education Group.
- Member of Council, Association of Leading Visitor Attractions (ALVA).
- Editorial Committee *Aquarium Sciences & Conservation*.

Julie Whitear  
Director's Assistant

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

Nicholas Ellerton  
Curator of Mammals

- Member of the Captive Care Committee, Primate Society.
- Member of Joint Management of Species Committee, The Federation of Zoological Gardens of Great Britain and Ireland.
- Chairman of the Fauna and Flora International North West Group.

Dr Roger Wilkinson  
Curator of Birds

- Honorary Research Fellow, University of Keele.
- Member of Council, Avicultural Society.
- Member of the Joint Management of Species Committee, The Federation of Zoological Gardens of Great Britain and Ireland.
- Member of Pheasant Specialist Group (IUCN/Birdlife/WPA).
- Member of Committees of the World Pheasant Association and the Congo Peafowl Trust.
- Secretary to the West African Ornithological Society.
- Member of UK Zoo Federation Research Group.
- Member of Cheshire Wildlife Trust Barn Owl Group.

Mark Pilgrim  
Avicultural Deputy

- The Amazona Society UK Scientific Officer.

Penny Rudd  
Administrative Manager (Animals)/Personnel Manager

- Member of Reaseheath College of Agriculture's Animal Care Course Industrial Liaison Group.
- Secretary/Co-ordinator of the Fauna and Flora International North West Group.
- Member of the Advisory, Conciliation and Arbitration Service (ACAS) Chester Personnel Group.

Stephen McKeown,  
Head of Education Services

- Vice Chairman of the Education Committee, The Federation of Zoological Gardens of Great Britain and Ireland.

Linda Davenport  
Education Officer

- Chairman, Zoo Volunteer Education Organisers' Forum.

Pat Cade  
Public Relations Officer

- Member of Marketing & PR Committee, The Federation of Zoological Gardens of Great Britain and Ireland.
- A Director of the North West Tourist Board.
- Member of Council, Association of Leading Visitor Attractions (ALVA).

In addition to those listed above, several staff are Chairmen 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 Conservation Co-ordination report on page 23).

### *General legislation affecting the Zoo*

We continue to meet and surpass our strict obligations under the Zoo Licensing Act 1981 (see below) and the Dangerous Wild Animals Act 1976; and to achieve best standards in relation to the regulatory authorities such as the Ministry of Agriculture, Fisheries and Food (MAFF), and the newly formed Environment Agency. This agency subsumes the National Rivers Authority and is responsible for monitoring our effluent discharges to Finchett's Gutter, a tributary of the River Dee.

We have commenced negotiations with the planning authorities (Cheshire County Council and Chester City Council) on our statutory position within the Cheshire Structure Plan and The Local Plan. The final outcome of this will be to establish the broad planning, development and land use opportunities for the Zoo well into the next century.

*Dr Gordon McGregor Reid*

*Zoo Director*

### *Health & Safety*

The Society's commitment to health, safety and welfare of its staff and those affected by its operations remains unaltered. To the best of its knowledge and belief, the Society meets the requirements of the 1974 Act and subordinate legislation ~ such as the Zoo Licensing Act and European framework directives ~ that concern its day to day operations. The Health and Safety at Work Act (HASWA) applies to those staff employed by the Society. The Zoo Licensing Act (ZLA) lays down standards for welfare of animals, visitor safety and amenities. We also have to responsibly cover those areas of safety that have a bearing on liability.

In broad safety terms, the Society is externally monitored under three main areas:

- \* Health and Safety (local authority officials)
- \* Zoo Licensing Act (local authority and specialist inspectors appointed via the Department of the Environment )
- \* Employee and Public Liability (insurance inspectors)

In most instances, the provisions of the HASWA and the ZLA overlap such that conflict seldom arises. All legislative requirements from both acts are now incorporated in basic planning strategies. This ensures a state of the art end product. This will be especially evident on the completion of the *Monkey Islands* construction project - the first major scheme to be developed under the new Construction, Design and Management (CDM) health and safety regulations.

Certainly, Chester Zoo has a committed safety approach to forward planning. 'Only the best is good enough' has become the basic safety motto throughout the Society's operations in every sphere where we are regulated.

During the year, the Zoo's team of first aiders, assisted by St. John Ambulance Brigade during the main season, dealt with 1023 requests for first aid. Of these, 789 were visitors and 234 were staff. A total of 93 were referred to hospital for further treatment. As the 1997 season approaches, first aid activities will be centred in a new purpose-built first aid station, situated between the *Ark* Shop and the elephant building. The station comprises a waiting room, toilet for disabled visitors, treatment room and stretcher area.

This year saw the demise of the lone worker alarm system due to rapidly changing technology. Communication is vital to operational efficiency: the need to protect lone workers or those working in areas of increased risk is a legal requirement. To satisfy both instances, it was decided to purchase private mobile radios (PMR's) which operate on four channels. One channel has been dedicated to emergency use only for rare events such as an animal escape or monorail breakdown. All PMR's have been configured to include an alert facility in conjunction with voice communications. PMR's are issued on a team basis. Should the necessity arise, operating the alert facility on any PMR diverts all units to the emergency channel. The identity of the distressed PMR is displayed on all units, thus allowing an immediate response from the emergency team.

Under the requirements of the management of Health and Safety at Work Regulations 1992, employers are required to provide information, instruction and training for employees. To this end, many training initiatives have been started in 1996 and the Society's ongoing commitment to training has been given the highest priority.

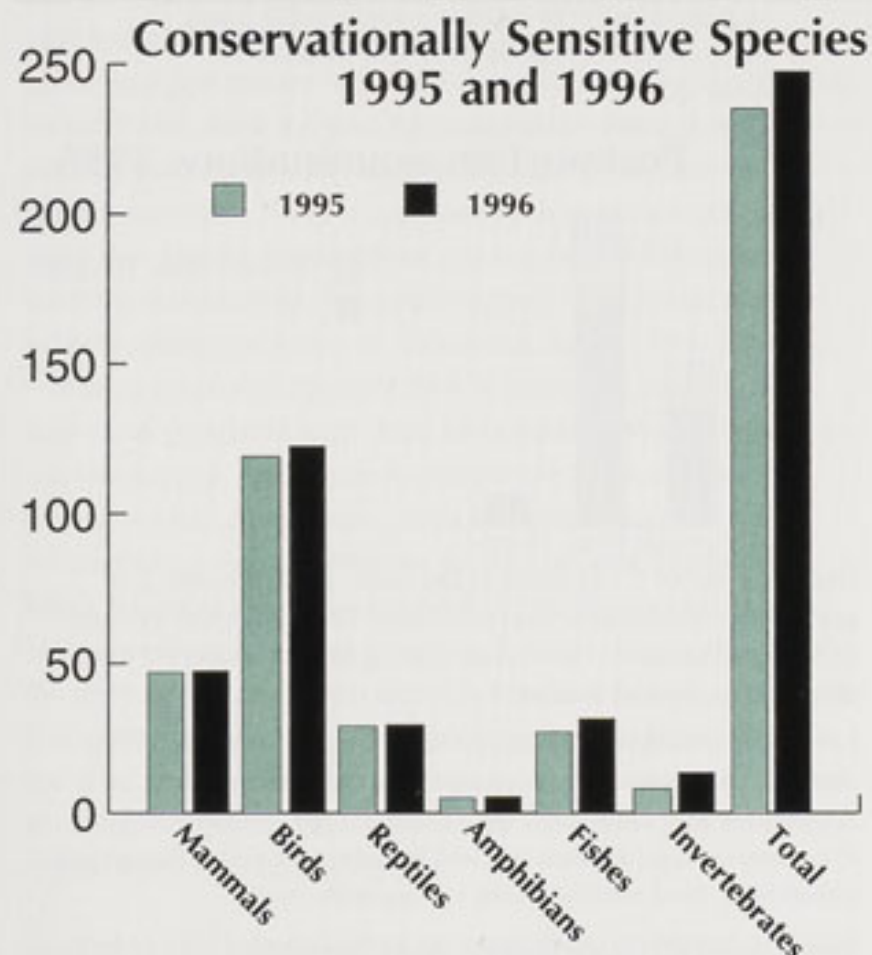
*Don Dinning*

*Safety Officer*

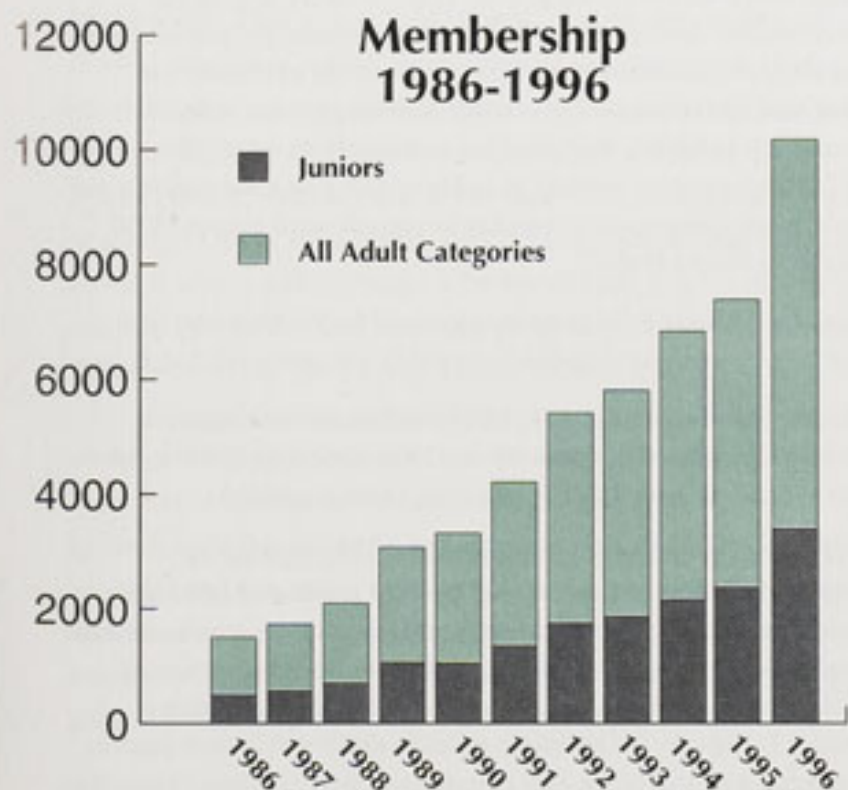
We are starting to perform against 'benchmarks' being established by the Association of Leading Visitor Attractions (ALVA).

Here are just some 'benchmarks' where annual cross comparisons can be valuable in seeing trends in the overall operation of the Society.

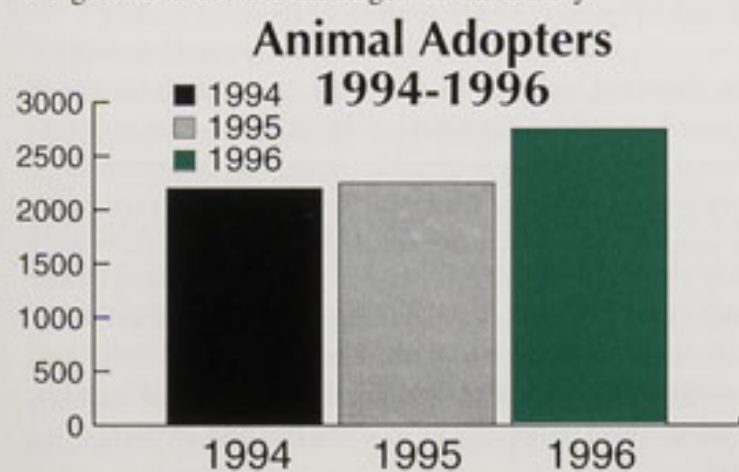
For 1996 we have selected six indicators



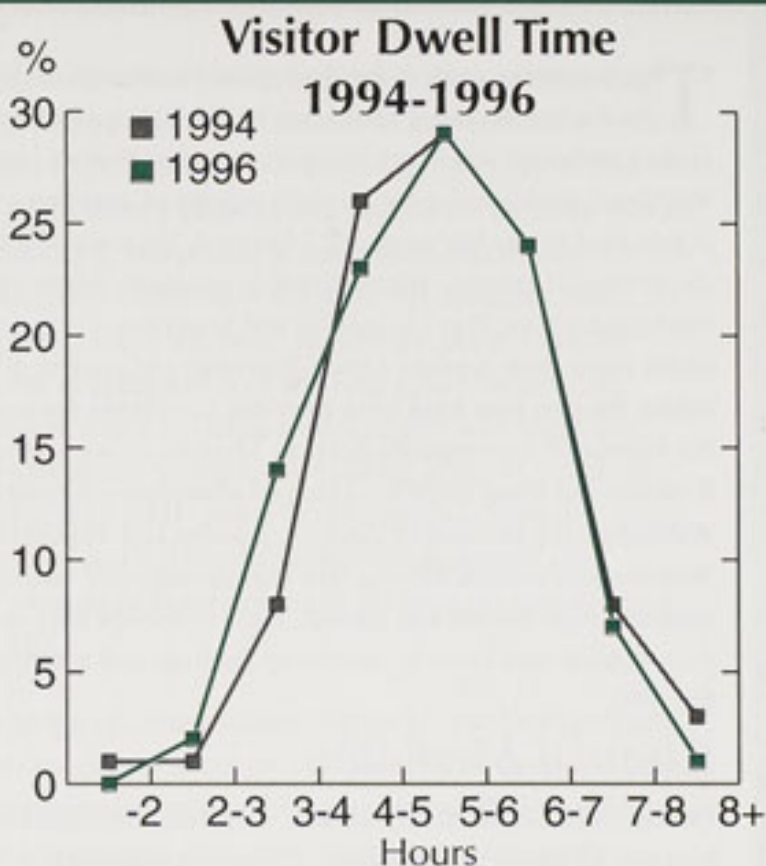
1. Just under half of the total species in the collection are now classified as conservationally sensitive. There has been an important increase in the number of endangered invertebrates, and smaller increases in birds and fishes. There have been no major changes in mammals or reptiles.



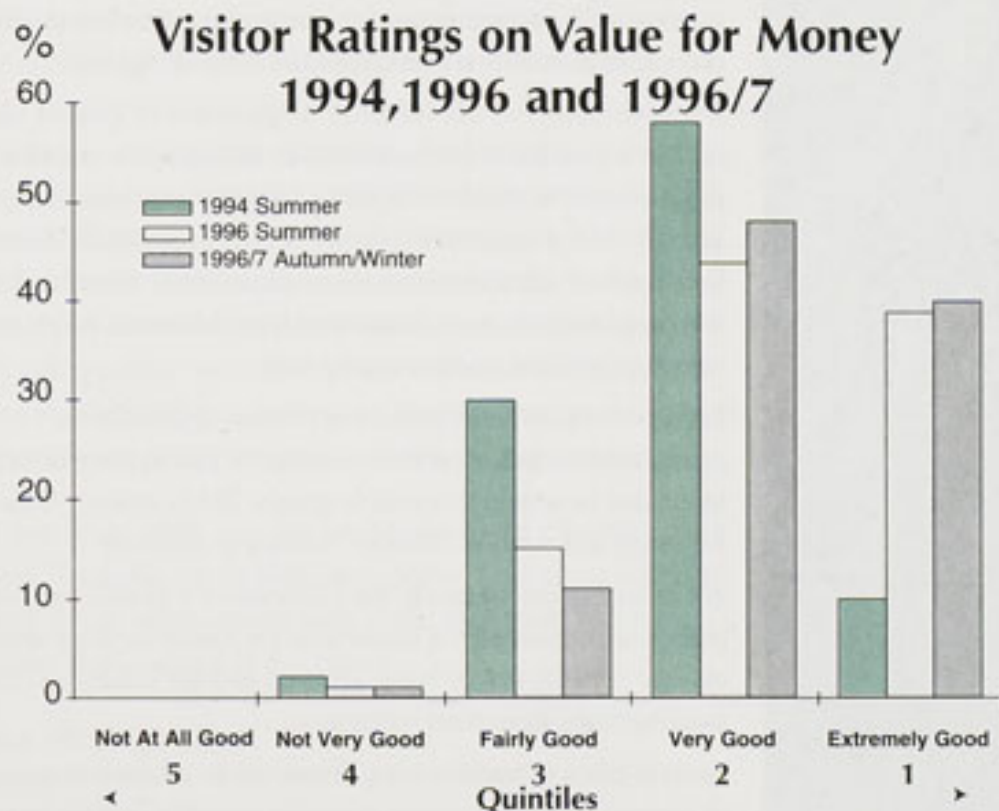
2. There has been a very large increase in the number of members and junior members in 1996, with the combined total now over 10,000 for the first time. The growth in 1996 is the largest in our history.



3. The number of animal adopters has risen by 17%, 1996 vs 1995.



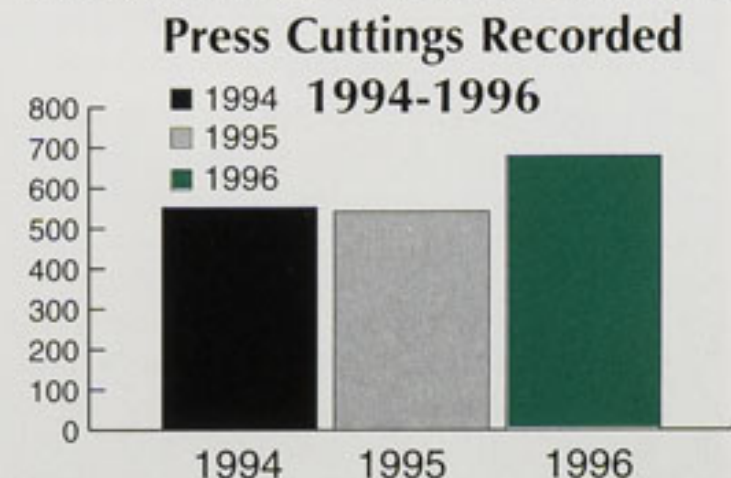
4. We have maintained high season dwell time 1994 - 1996. The mean is around 5 hours.



5. Value for money ratings give a good indication of perceived performance. There have been three recent studies: Summer 1994, Summer 1996 and Autumn 1996/Winter 1997.

The two later studies show a welcome upward move in value for money, with the highest rating ('extremely good') around four times larger than 1994. Over four fifths of visitors gave ratings in the two highest quintiles ('very good'/'extremely good'). The increase in these two higher quintile ratings has transferred from the 3rd quintile rating ('fairly good').

The more recent studies were the work of Zoo registered students, Derek Snee (MBA dissertation, University of Warwick) and Lesley Beard and Kerry Thompson (HND project, Wirral Metropolitan College). Our thanks to them.



6. The growth of around a quarter in the number of recorded UK press cuttings in 1996 vs the 1994/5 level reflects the interest in the baby elephant Karha, and a generally higher public profile. Based on a simple count (unduplicated), there is no attempt to weight by readership or assess the space 'value'.

The veterinary work at the Zoological Gardens is, and has been for the last 30 years, contracted to the local veterinary practice at the Gatehouse Veterinary Hospital, Lavister, Rossett, near Wrexham. Additional input on some aspects of veterinary pathology is provided by the University of Liverpool, Veterinary Pathology Department, Leahurst, Wirral. Regular veterinary audits are conducted via the Zoo's Scientific and Veterinary Committee which meets every three months. Other diagnostic and analytical services during the past year have been provided by various departments of the Veterinary Investigation Service, Ministry of Agriculture, Fisheries and Food (MAFF), Grange Laboratories (Chester and Wetherby), the Institute of Zoology, London and Vet-Gen Europe, Winchester. Practical training was also provided for veterinary students, from Britain and abroad. This review has been compiled from clinical case records, laboratory findings and autopsy reports for 1996.

### Clinical Medicine

During 1996 the Veterinary Officer dealt with 236 mammal, 289 bird and 41 reptile clinical cases. Follow-up treatments to the case load brought the total number of visits to 1,830. Additional advice was given regarding husbandry, anthelmintic drugs, export and import cases and treatments for minor cases. Routine on-going preventative medicine procedures are detailed below.

It was necessary to use chemical restraint and/or general anaesthesia on 104 occasions to perform clinical, radiographic and/or surgical procedures. The Asiatic Elephants (*Elephas maximus*) are, on average, blood sampled every two weeks to establish vitamin E levels and/or other haematological parameters. Oestrous detection and pregnancy are now established from hormonal levels in urine samples collected by the keeping staff.

Routine vaccinations continue in Felidae against feline panleucopenia and viral rhino-tracheitis, and against clostridial infections in certain susceptible groups (Red Lechwe, *Kobus lechwe kafuensis* and Arabian Gazelle, *Gazella g. arabica*).

All incoming psittacines to the collection are initially quarantined and closely screened via blood tests for psittacine beak and feather disease (PBF) before being allowed into the collection. Several positive cases have been euthanised.

Several cases of translocation, importation, quarantine and/or export of various important conservationally sensitive species have been dealt with e.g. female Asiatic Lion, *Panthera leo persica* to Moscow; Buffy-headed Capuchins, *Cebus apella xanthosternus* from Brazil; male Asiatic Lion to London and returned and male Orang utan (*Pongo pygmaeus abelli*) Pulu from Perth, Australia in December 1996.

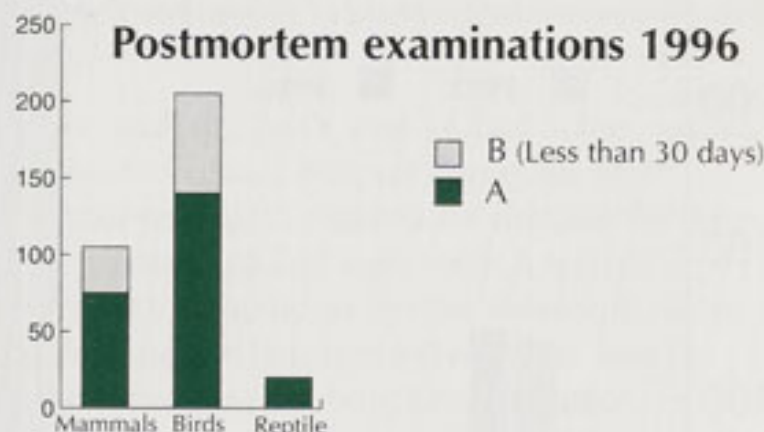
During the year many Scimitar-horned Oryx (*Oryx dammah*) were blood tested for bovine virus diarrhoea (BVD). Several animals gave positive results for BVD antigen. However extensive laboratory examinations at the Central Veterinary Laboratory failed to culture the virus. It was concluded therefore that the results were false positives due to a possible *Oryx pestivirus*.

The Veterinary Officer in conjunction with the help of the Equine Clinical Department of the Veterinary Faculty, Liverpool were involved, together with the keeping staff, in the hand-rearing and associated veterinary problems with the successful nurturing of *Karha* - the Zoo's Asiatic Elephant calf (born 19/12/95). A detailed résumé of *Karha's* birth and subsequent hand-rearing were discussed at the 1996 Elephant Keepers' Workshop (Lyon, 1996). To date, *Karha* is progressing well and is still being hand-reared, but attempts at the long process of weaning are underway!

### Pathology

The main objectives of carrying out postmortem examinations are:

- to ascertain the cause of death and to enable suitable action to be taken to prevent further losses
- the acquisition of pathological data pertinent to exotic species.



During the period 1 January to 31 December 1996 inclusive, 338 postmortem examinations were performed. The above chart indicates three animal groups in two classes. Among these, a total of 62 were destroyed for humane reasons.

Losses due to bacterial disease accounted for approximately 23% of deaths in all species. Bacteria routinely encountered included: *Escherichia* spp., *Salmonella* spp., *Klebsiella* spp., *Aeromonas* spp., *Pseudomonas* spp., *Yersinia* spp. and *Mycobacterium* spp. Fungal/yeast infections (3% of total) were due to *Aspergillus* spp.

Deaths attributable to injury and/or accidental causes (13%) include intra and interspecific aggression, collision or ensnarement with enclosure structures and losses to predatory mammals such as fox and stoat.

Parasitic losses were recorded at 2%. This low figure reflects the positive benefits derived from the programme of strategic preventative anthelmintic treatment routinely carried out by the veterinary and keeping staff. However, owing to collection management in fixed locations, it is inevitable that some losses will and do occur. These tend to be caused by certain endemic parasites such as *Syngamus trachea* and *Ascaridia* spp. *Haemoproteus* and *Leucocytozoon* were seen in blood smears from Snowy Owls.

Neoplasia accounted for 2% of cases and viruses for 1% (Bantams). One case of feline spongiform encephalopathy (FSE) was seen in an Ocelot.

No disease due to nutritional or metabolic imbalances was diagnosed (0%). This figure has fallen annually (cf. 20%+ during the 1980's), due largely to much improved dietary provision and management.

This year's report cannot be completed without highlighting the impending retirement of Don Dinning from the position of Laboratory Technician and D G Lyon would like to add his tribute to Don's career at Chester Zoo. Don came to the Zoo in 1969 from the Royal School of Tropical Veterinary Medicine, Edinburgh. His initial job was that of Veterinary Laboratory Technician, a position which was in later years to be combined with that of the Zoo's Health and Safety Officer. During the formative years of the Veterinary Department, Don was responsible for all bacteriological and parasitological work and some haematological examinations of clinical and pathological specimens. Currently, to satisfy British Standards of Quality Control, the Zoo's Laboratory work is carried out by commercial enterprises who have the required/necessary accreditation. However, during all his time at the Zoo, Don maintained and kept extremely precise and detailed records of all veterinary clinical and pathological cases, and was responsible, along with the Veterinary Officer in producing a more detailed annual Veterinary Laboratory Report than is now required, (refer to *Chester Zoo Annual Veterinary Laboratory Reports, 1968 - 1984*) D G Lyon would like to express his sincere thanks and gratitude to Don for his invaluable assistance and professionalism during this association with him during the last 28 years. The Veterinary Practice extends best wishes to him for a very happy retirement from his veterinary duties! Albeit he will still be involved part time in safety aspects in 1997.

Derek Lyon Consultant Veterinary Surgeon  
Don Dinning Veterinary Laboratory Officer

This year the total number of rare and endangered species in the animal collection reached 247, or 47% of our entire holdings (refer to Livestock Review). We had predicted in 1995 that we would not approach this figure before the end of the millennium. Indeed, it is sobering to recall that only 20 years ago a very few species were listed as conservationally sensitive. Some of this sharp increase has come about through well advised and scientifically managed curatorial policies for species selection. There is a presumption in favour of holding those rare species for which we can organise worthwhile breeding programmes. We will, wherever appropriate and feasible, substitute a rare for a common animal. This does not of course mean that the collection is becoming progressively duller and populated with 'little brown jobs'! Many distinctive and charismatic species are in greater need of help than their more abundant counterparts, such as Asiatic Lion (versus African Lion), Asiatic Elephant (versus African Elephant), Black Rhinoceros (versus southern White Rhinoceros) and Mauritius Kestrel (versus Common Kestrel). Another reason for the increase in our conservationally sensitive holdings is simply that more and more kinds of animal species are being added to the official lists, as the human population grows and as habitats are being destroyed. Hence species in the Zoo which used to be common are now becoming rare.

When it comes to breeding rare and endangered species Chester Zoo is a world leader. Indeed, Chester originated the detailed conservation appraisal system presented in our Livestock Review and we do not know of any other Zoo who can match our records! This year's 'baby boom', led by the rearing of *Karha*, reinforces a justifiable pride in our operation. For example, our success with Bornean and Sumatran Orang utan births brings the total number successfully raised at Chester to fifteen, five of which were in the last three years. Not too many years ago Orang utan births were a rarity which made headline news. Today, such births for Chester at least are thankfully not unusual. We know that breeding programmes really can make a difference to the global populations of many species. This year, three young Scimitar-horned Oryx were produced within a zoo community programme that has involved reintroductions to their native habitat in the semi-desert belt of West Africa. Indeed, Scimitar-horned Oryx became largely extinct in nature by 1970 and the entire wild population now comprises of reintroduced stock. Closer to home, we have had some early success in breeding the northern form of the Sand Lizard, now critically endangered on the nearby Ainsdale Dunes.

Not only do we support collaborative breeding programmes we also coordinate them on a national and international basis (see page 23). Conservation science remains a high priority with numerous post-graduate or post-doctoral projects being supported (see page 25).

Dr Adam Britt is typical of a new breed of staff who combine good quality zoo keeping with academic research. In this case, a study of lemur behaviour in zoos and in the wilds of Madagascar. This is in order to investigate the behavioural skills of those different groups of study animals to see what lessons can be learned for possible future reintroduction programmes. Avicultural Deputy, Mark Pilgrim, is another member of staff engaged in doctoral research. He aims to clarify the obscure taxonomic status of the highly endangered Lilacine Amazon Parrot. Lilacines exist as a member of geographically separate populations in South America which may or may not be

biologically distinct and which might, on some criteria, be regarded as separate species. Clearly, there would be important conservation implications if this proves to be the case. In order to unravel the mystery Mark is analysing their DNA as well as studying anatomy, behaviour, vocalisations and ecology. My own researches on freshwater fishes of the Guinea-Congo region of Africa have led me to review the entire basis for assessing the zoogeographical and hence, to a degree, the conservational status of fishes in this region (see page 29). These are just some examples of exciting projects which may well produce long term conservation benefits. Scientific study through school and university student programmes also increases, often concerning research projects on conservation (see page 26).

A diverse range of 'conservation outreach' type field projects have been supported (see page 24). Sometimes these are funded with the assistance of external bodies such as WWF or English Nature. In other cases, direct zoo funding makes a real difference, as with the Philippine Spotted Deer (*Cervus eldii*) programme. There has also been a useful first field survey in Mexico for near extinct, livebearing goodeid fishes. Chester Zoo funding through the IUCN Conservation Breeding Specialist Group provides a general community support base for a wide range of conservation initiatives. For example, this year CBSG conducted population and habitat viability analyses (PHVA's) for: Komodo Dragon, Javan Hawk-Eagle, Namibian Cheetah, Kirtland's Warbler, Formosan Black Bear, Peninsular Pronghorn, Lion-tailed Macaque, Baird's Tapir, Indian Gharial and many others. Such assessments are fundamental to the development of effective conservation management plans involving zoos and wildlife agencies in the habitat countries.

Last, but not least, 1996 saw the establishment of Chester's first 'frozen zoo' flask for preserving rare sperm. This is yet another example of action taken now which could well have major conservation implications in the future.

*Dr Gordon McGregor Reid*  
Zoo Director



*Cryobiology Flask - our first 'Frozen Zoo'*

This was of course the year of successfully rearing *Karha*, the female Asiatic elephant calf born in December 1995. The elephant keepers and our veterinary advisors have shown the utmost dedication to this baby. The combination of experience, skill and attention to detail have ensured that *Karha* was successfully hand-reared from birth.

However, *Karha's* birth should not completely overshadow some other notable births and arrivals within the Mammal Department. For example, the Rodrigues Fruit Bats group continued to expand at an encouraging rate, enabling us to send 25 (15 male, 10 female) animals to Bristol Zoo. A new free flight bat exhibit is presently being planned in order to manage the Rodrigues Fruit Bats and Sebas Bats in greater numbers. Hopefully our visitors will enjoy a true nocturnal experience, sharing the same area as the bats.

The Ring-Tailed Lemurs and Red-Ruffed Lemurs, as usual, successfully reared young on their island exhibits. The long awaited arrival of the very rare Buffy-headed Capuchins occurred early in 1996. Immediately, the two pairs mated and two infants were born. Sadly one, a female, was stillborn. This critically endangered species is only held in three European collections and at the Rio Primate Centre in Brazil. These animals are the property of the Brazilian Government and Chester was a major contributor to their recovery programme. Zurich Zoo and Mulhouse Zoo are the other contributors to this successful project.

Three female chimps were born, of which one failed to survive. One male and one female Bornean Orang utans were also born. The adult Bornean Orang utan *Lola* and her infant were placed on loan at Dublin Zoo in the hope that the females there will learn to rear their own infants. A male Sumatran Orang utan was sent to Chester from Perth Zoo, Australia, to pair with our two young females. Since *Oscar* and *Ramona*, the adult Sumatran Orang utans, are no longer compatible, they have been split. *Ramona* has gone to France to be paired with a younger male and *Oscar* is to go to Liberec in the Czech Republic to join a younger female.

The Asiatic Lions produced three more cubs, all male! The male *Jake* also visited London where he sired another litter of cubs. The onager herd produced one male and two female foals. This species of wild ass, though endangered, has never received the attention it deserves in management programmes. If it had been 'blessed' with a few stripes, I am sure everybody would show an interest in this wonderful animal!

Baby female giraffe *Mia* was the first to be born in the collection for 17 years. We also received two young female giraffes to add to our expanding herd. New additions to the collection were two male Lowland Anoa, the smallest of all the wild cattle. Hopefully two females will arrive in 1997.

The Scimitar-horned Oryx herd produced one male and two female calves. Only reintroduced groups now survive in this animal's original home range - so captive breeding really does work.

The Black Rhino group has seen a considerable amount of 'inter zoo' movement. The male *Parky* was sent to Port Lympne Zoo where he has sired one female calf, with another due shortly. He has now returned to Chester. The male *Kingo* from Port Lympne proved overly aggressive to our females so, sadly, no pregnancies occurred with this move. He has now returned to Port Lympne. However, we are expecting a rhino birth in June 1997 from our young female *Pangani*, who is on loan from Frankfurt Zoo.



*Rhino paddocks*

The year's most important and dramatic change was at the Monkey House. This has been 'gutted' in preparation for complete refurbishment. This long awaited upgrading has completely changed the concept of the original building. Only five or so species will be maintained in the new complex which incorporates three huge islands and a big enclosure. It is hoped to manage these animals in large groups. The founding species are the Mandrill, Lion-tailed Macaque, Buffy-headed Capuchin, Black Spider Monkey and Sulawesi Crested Macaque. Work was well under way in 1996, and the completed building is due to open in the summer of 1997.

The weather was kind to us! All in all, it was a good year.

*Nick Ellerton*

*Curator of Mammals*

Highlights of 1996 were our first successful breedings at Chester of Pink Pigeon and Blue-throated Conures. Other important breedings included Humboldt's Penguins, Red-crowned Cranes, West African Crowned Cranes, Congo Peafowl, Wrinkled Hornbill, Red-fronted Macaws, Lilacine Amazon, Green-cheeked Amazons, Cuban Amazons, Blue-eyed Cockatoos, Yellow-throated Laughing Thrushes and Bali Starlings.

New arrivals included Meller's Ducks and South Georgia Pintails, White-naped Cranes, Masked Lapwings, Blacksmith's Plovers, Orange-fronted Fruit Doves, Green Wood Hoopoes, Red-winged Laughing Thrushes, Blue Whistling Thrushes, and a Spangled Cotinga.

The White-naped Cranes arrived as a sibling pair. We shortly expect to receive an important (genetically under-represented but old) wild-caught male to pair with the young egg-laying female. Since 1991, our Red-crowned Cranes have bred a total of nine chicks and the EEP (co-ordinated European Programme) now recommends slowing down breeding by this pair. We hope to establish a pair of rare Siberian Cranes at Chester. After several years without breeding we are happy to report rearing two West African Crowned Cranes. The Crowned Plovers also reared chicks. White-faced Scops Owls, Spectacled Owls, Snowy Owls and Barn Owls were reared. Ferruginous Pygmy Owls laid fertile eggs but none hatched.

Congo Peafowl, Edwards' Pheasant, Satyr Tragopans, Golden Pheasants, Red-legged Partridge and a Bare-faced Curassow were bred. Grey-headed Chachalacas hatched a chick in the free-flight Tropical Realm but this was not reared. Blyth's Tragopan and Mountain Peacock Pheasant laid for the first time but neither hatched chicks. We came close to rearing Blue Crowned Pigeons, when a chick hatched in the incubator and fostered under Java Doves survived for five days. We artificially incubated and hand-reared a Nicobar Pigeon - the first pigeon we have successfully hand-reared from hatching.

Fourteen Waldrapp Ibis were parent-reared. However, we are still working to determine the conditions necessary for Humboldt's Penguins to consistently parent-rear. Only two of twelve chicks left under their parents were reared while all twenty-three taken for hand-rearing were successfully reared. Two pairs of penguins re-nested in November bringing the number of hatchings this year to a record 39! Twenty youngsters have already travelled to Jurques Zoo, France to establish a new colony. However, success has bred its own problems and Chester's penguins may now be genetically over-represented in other zoos. Hopefully, we may obtain under-represented stock from elsewhere and concentrate on breeding from them.



Six Caribbean Flamingos and three Chilean Flamingos were successfully reared. Hawaiian, Red-breasted and Emperor Geese all reared their own youngsters. Other waterfowl bred included Black-necked Swans, Black-billed Whistling Ducks, Ruddy Shelducks, Chiloe Wigeon, Ringed Teals, Rosy-billed Pochards, Mandarin Ducks, Carolina Wood Duck and North American Ruddy Ducks.

Chester had the first UK breeding of Pied Imperial Pigeons back in 1964 but this was not repeated here again until two chicks were reared this year. Other pigeons bred included Speckled Pigeons, Rock Doves, Crested Bronzings, Common Bronzings, and Diamond Doves. Luzon Bleeding Heart Pigeons and Superb Fruit Doves hatched chicks but neither were reared.

Four Blue-eyed Cockatoos were reared. Vogelpark Walsrode now joins Rotterdam Zoo, Paignton Zoo, Paradise Park, Tierpark Berlin and Loro Parque in receiving birds from Chester to assist the European Studbook programme. We were fortunate to exchange one of our male White-tailed Black Cockatoos for a female from Rotterdam Zoo. Red-fronted Macaws, Blue and Yellow Macaw, Blue-throated Conures, Slender-billed Parrakeets, Derbyan Parrakeets, Greater Vasa Parrots and one Eclectus Parrot were bred. Two Thick-billed Parrots and a Yellow-naped Macaw were hatched but unfortunately not reared. We have recently received Mount Apo Lorikeets and look forward to working with these in 1997. White-cheeked, Red-Crested and Schalow's Turacos and Violet Plantain Eaters were bred. Trumpeter Hornbills again reared two chicks and the Wrinkled Hornbills reared one youngster.

Lilac-breasted Rollers bred for the first time at Chester. Red-billed Blue Magpies, Superb Starlings and Asian Glossy Starlings reared chicks and one Royal Starling was successfully hand-reared. Ten Bali Starlings were bred from one pair by a combination of parent and hand-rearing. After several years of unsuccessful breeding attempts by the Yellow-throated Laughing Thrushes, we removed eggs for artificial incubation - this proved successful with three chicks being hand-reared from the eggs.

Plumbeous Redstarts, White-rumped Shamans, Pekin Robins, Mexican House Finches, and Java Sparrows were all bred. Although Gouldian Finches and Cordon Bleu hatched chicks, neither were reared.

Our most important developments in exhibit presentation were the *Condor Cliffs* aviary and initiation of keeper commentaries during public penguin feeds. These have proved to be very popular, so many thanks are due to our hard-working and enterprising keepers!

*Dr Roger Wilkinson*

*Curator of Birds*

*Penguin chicks walk through the gardens*

This year saw an increased emphasis on environmental improvements for the welfare of our animals. Many enclosures had major changes and, as well as appealing more to the visitors, the inhabitants certainly noticed the difference. Nowadays, it is not enough to house reptiles or amphibians in conditions that are pleasing to us. They have specific requirements that must be catered for in the interior design and control of their environments. A good example of this type of work is the much improved Tuatara exhibit. The benefits of such schemes should be increasingly evident in the coming years with improved vitality and breeding.

Certainly our breeding results for 1996 have been very good with Thailand Water Dragons, Giant Madagascar Day Geckos and Leopard Geckos all producing large numbers of very healthy youngsters. Snakes, too, have been active with Honduran Milk Snakes and Cuban Boas producing young. We are now looking to be involved in a reintroduction programme for Aruba Island Rattlesnakes, from off the coast of Venezuela. We are also engaged in a snake anti-venom project with the Liverpool School of Tropical Medicine.

Our group of young Dwarf Crocodiles showed signs of impending maturity by exhibiting breeding behaviour that resulted in an excellent attempt at nest building. It took the female more than two months to build the nest choosing from a variety of substrates supplied by the staff.

The new Sand Lizard enclosure has settled down with all of the species of plants blooming in the year. This had the added advantage of attracting insects which serve as pollinators for the plants (some of which are rare or uncommon) and food for the lizards. Although under licence we were only able to have five

specimens (two males and three females) to house in the new enclosure, they all settled in well. From the small number of adults and the time of the year, we really did not expect any breeding. But eggs were laid and, although the young hatched very late in the year, we were able to rear some. The winter provided the real test for the original adults. They emerged safely from hibernation in March 1997, just as this report was being prepared for the printers. Thus we hope that the long term prospects for a breeding and reintroduction programme look good.

The improvement in our amphibian collection continues with the acquisition of several species of Poison Arrow Frogs. We have had very good breeding results from this beautiful and endangered group. Hopefully, improved exhibits will enable us to display some of our amphibian species that are currently held off-show. Although small, the collections of land invertebrates are doing extremely well, with good breedings of Macleay's Spectre, Spiny Stick Insects and Jungle Nymphs. Our colony of African Fruit Beetles is increasing in numbers and we have sent specimens to various collections. Partula Snails are also doing well and we are proud to have had some of the Chester bred Partula being successfully returned in 1996 to their native habitat in the Pacific Islands.

Behind-the-scenes, a new kitchen was installed, while front-of-house, all the rotten windows were replaced with new double-glazed units. Improvements to the Tropical Realm are continuous and benefit the collection and the public.

A major scheme for 1997 will be a new Alligator pool, incorporating an Aztec temple!

*Keith Brown*  
*Herpetologist*



*Young Sand Lizards*

It has been a busy year in the Aquarium, with staff attending numerous Fish and Aquatic Invertebrate Taxon Advisory Group [FAITAG] meetings country wide. These groups are primarily for the conservation of Tadpole Shrimps, Cichlids, Seahorses and endangered Livebearer species. The seven Livebearer species we hold are all producing plenty of youngsters. Our Seahorses are still breeding well, with offspring sent to Anglesey Sea Zoo, Bristol Zoo, Seahorse Nature Aquarium in Exeter, Liverpool Museum Aquarium and Cotswold Wild Animal Park. We also plan to supply seahorses to London Zoo Aquarium, County Hall Aquarium, London and Madrid Zoo Aquarium in Spain. We assisted in the production of an English Nature Species Action Plan for Tadpole Shrimps - Britain's rarest freshwater crustacean, now being bred successfully at Chester.

We attended Aquatic shows in Doncaster and Manchester, joining the *Aquarian* (Pedigree Petfoods) team of Dr David Ford and Dr David Sands, talking to the public about the work of the TAG, and the endangered species that we keep here in the Aquarium. *Aquarian* were kind enough to sponsor our attendance at the European Union of Aquarium Curators (EUAC) conference which was hosted by Munich, Salzburg and Innsbruck. Justin Bell gave a paper on FAITAG and the conservation work that we are doing at Chester. Many new contacts were made with other Aquaria and this initiative has certainly put

Chester Zoo Aquarium on the European map. *Aquarian* also generously sponsored the all-colour, new Aquarium Guide which went to press in late 1996.

During the year a film production company, *Atlas Adventures*, spent a few days filming in the Aquarium for a series of programmes on conservation and endangered species for Japanese television. The *Granada TV* weatherman, Fred Talbot, read the weather forecast in front of the fish tanks and the Aquarium was also a very popular part of a special *Aquatic Theme Evening* for visitors in June.

We have assisted HM Customs and Excise at Manchester Airport on a number of occasions, helping to identify suspect marine fish imports. As a result, an illegal shipment of hard coral was seized, and later put on deposit at Chester. Three information panels have been developed by Justin Bell, and have been up on the inside wall of the Aquarium. They cover the Lake Victoria Breeding programme, fish sperm cryopreservation, welfare problems with 'painted fish' and microsatellite genetic markers as an aid to conservation.

Finally, the Aquarium now has a new pitched roof. This will stop the chronic leaks caused by cracks in the original flat concrete roof, and will keep the building warmer and drier throughout the winter.

*Mike Crumpler*

*Aquarist*

## North of England Zoological Society ANIMAL DIVISION **ANIMAL SUPPLIES**

Jim Forrest, our Animal Supplies Officer for nearly 20 years, departed at the end of 1996 to take up a new post in Scotland. We wish him all success! Tony Hutchinson has since taken over as Acting Supervisor of Animal Supplies.

Being out of sight of the rest of the zoo, the Animal Supplies Department's role is often underestimated. It is responsible for the sourcing, purchasing and distribution of an enormous variety of different foodstuffs and bedding materials from baby foods to bags of sawdust. Diverse requests for everything from 'small and specialised' to 'bulky and common' are all catered for, with a total of some 1000 tonnes of food and bedding being supplied in 1996.

In the interests of economy, great emphasis is placed on utilising bulk purchases, seasonal availability and the food industry's surplus supplies. Striking the balance between quality and economy is not easy, but together with bulk acquisitions of carrots, fodder beet and potatoes, over 300 tonnes of quality fruit and vegetables were bought for £53,000 in the year. In addition, more than 400

tonnes of hay, straw and lucerne were obtained at a cost of £45,000. Thirty tonnes of herring and sprats were bought for £10,000 and about 40 tonnes of meat, chickens and rabbit for nearly £20,000. The very specialised bagged, dry diets required for some animals cost more than £60,000 and totalled 165 tonnes. The equally special needs of many birds and reptiles, particularly during the breeding season, also have to be catered for. Several hundred thousand meal worms, crickets, and frozen units were bought in. These were in addition to the 90,000 locusts and 20,000 rats and mice bred in-house during the year.

To assist in the storage of all these items, a new racking system was recently installed to complement the existing fork lift truck. Near the end of the year, the department took delivery of a medium sized van, sporting some unique animal-oriented artwork, designed by Hannah Lawson. This vehicle will be an essential component in our additional role in the national and international transport of zoo animals.

*Tony Hutchinson*

*Acting Supervisor for Animal Supplies*



The North of England Zoological Society has, for many decades, had a high international standing involving extensive collaboration with zoologists and conservationists throughout the world. The great strengthening of this collaboration continued through the year (see p49).

The Director attended this year's International Union of Zoo Directors Meeting hosted by Denver Zoo, USA. We hope that within the next decade Chester Zoo itself will host this prestigious event. European Association of Zoos and Aquaria meetings took place in France involving curatorial staff and our aquarium staff attended the European Union of Aquarium Curators meeting in Germany. Other zoo staff to visit the United States during the year were Senior Bird Keeper, Wayne McLeod and Debbie Lenihan, Catering Supervisor, who took part in the UK Zoo Federation tour. An international meeting of the Congo Peafowl Trust to discuss the breeding possibilities for this endangered bird was held in New York and attended by our Curator of Birds, Dr Roger Wilkinson.

Our Herpetologist Keith Brown travelled to Brazil to discuss collaborative projects including snake anti-venom research. Retail and catering staff visited Emmen Zoo in Holland to look at marketing techniques. Mammal keeper, Dave Brunger carried out a tour of primate facilities in European zoos in the Autumn.

Chester welcomed Professor Hilary Fry, an eminent authority on African birds, in February of 1996. Dr Roger Wilkinson is working with Professor Fry on a new book on African ornithology. Other bird experts who visited Chester included Eric Peake (a well known avicultural artist), Dave Blynn (a distinguished parrot breeder from the USA), and Scott and Anne Swengal from the International Crane Foundation, in Wisconsin, USA. Chester Zoo has a history of good breeding success with cranes, particularly the endangered Red-crowned Crane.

Senior mammal keeper Mick Jones and Assistant Retail Manager Susanne Stanton visited India in September on a Zoo-assisted tour. India has always had close conservational links with Chester Zoo and we continue to give financial and training support to Zoo Outreach India. This is co-ordinated by Sally Walker in India, who visited Chester during the year. Nibha Namboodiri an elephant mahout trainer from Zoo Outreach spent one month on a UK visit early in the year. Gautam Dey (ex-Director of Madras Zoo) visited in April on a course commissioned by the British Council with ODA funds on the planning of projects for biodiversity conservation for Government of India officials. Chester Zoo assisted him in his researches on 'The Role and Management of Zoos in the UK: possible lessons for India'.

Chief Chitambo 4th from Zambia visited the Zoo in March with Dr Barry Stevens-Wood of Manchester Metropolitan University, to discuss wildlife outreach projects.

We continue to carry out field work in the Gashaka Gumti National Park, Nigeria, with Senior Primate Keeper, Steve Hogarth and Research Associate, Adam Britt studying the chimpanzees in the park. This work is supported by the Nigerian Conservation Foundation and WWF (UK).

Many meetings of Taxon Advisory Group members and studbook co-ordinators were held throughout the UK and Europe in 1996 and attended by several of our animal staff. The UK Elephant Workshop, which is run by Neil Spooner and Karen King-Sharp here at Chester (and which is chaired by the Director) has grown from strength to strength over the last decade. It now receives international acclaim with many overseas delegates taking part. Among this year's speakers were Dr V Krishnamurthy, a renowned elephant veterinary expert from India (*see picture below*) and Dick Montali, Head of Veterinary Pathology at the National Zoo, Washington, USA.

Representatives from overseas zoos who visited Chester in 1996 included: Mr M Cochrane, a Council member of Taronga Park Zoo, Australia; Mr & Mrs Lebreton, Directors of Champrepus Zoo, France; Mike Gould, a veterinarian from Hamilton Zoo, New Zealand; Sbraka Milan from Zoo Liberec, Czech Republic; Mr G van Eben, Antwerp Zoo in Belgium; Monsieur and Madame Ourry and Monsieur and Madame Carbonnel, Directors of Jurques Zoo, France and Dr Raul Pineda Lopez, University of Queretaro, Mexico. Some of these visits were made in conjunction with the international movement of animals for breeding programmes.

As you can see from our conservation outreach table on page 24, we co-ordinate or support a great variety of field projects both in the UK and overseas. An important new development in international collaboration took part this year when Dr Reid was invited, at the

expense of the Mexican authorities, to travel to Mexico and advise them on matters of fish conservation, and other zoological matters. We are now establishing relationships with the Mexican universities to develop breeding programmes for endangered Mexican fishes and looking at other animal and plant conservation projects for the future.



*Dr Krishnamurthy meets Karha*

*Taxon Advisory Group Chairmen*

Chester Zoo provides Chairmen at a high level of co-ordination to lead four key Zoo Federation Taxon Advisory Groups ('TAGs'), as members of the Zoo Federation Joint Management of Species Group (JMSG) for Britain and Ireland.

Taxon	Chairman
Elephants (JMSG)	Nick Ellerton
Deer and other Cervids (JMSG)	Nick Ellerton
Parrots (EEP, JMSG)	Dr Roger Wilkinson
Fish and Aquatic Invertebrates (JMSG, EUAC)	Dr Gordon McGregor Reid

*Breeding Programme Co-ordinators*

Chester Zoo is an active participant in 15 national (Federation Joint Management of Species Programmes or JMSP's) and international (European Endangered Species Programmes or EEP's) studbooks and registers for the co-ordination of breeding programmes.

Species	Co-ordinator
Chimpanzee	Nick Ellerton
De Brazza Monkey (JMSP)	David Brunger
Talapoin Monkey (JMSP)	David Brunger
Gemsbok (JMSP)	Charlie McKenzie
Palm Cockatoo (EEP)	Dr Roger Wilkinson
Blue Eyed Cockatoo (European non EEP)	Dr Roger Wilkinson
Spectacled Owl (JMSP)	Roger Merry
West African Crowned Crane (JMSP)	Dr Roger Wilkinson
Green-cheeked Amazon Parrot (EEP)	Mark Pilgrim
Lilacine Amazon Parrot (EEP)	Mark Pilgrim
Cuban Amazon Parrot (JMSP)	Mark Pilgrim
Prehensile-tailed Skink (JMSP)	Keith Brown
Madagascar Tree Boa (JMSP)	Keith Brown
Philippine Sail-fin Lizard (JMSP)	Keith Brown
Lake Victoria Cichlid Fishes (JMSP)	Justin Bell



*Karha meets the herd*

*23 FIELD PROJECTS SUPPORTED BY CHESTER ZOO*

SUBJECT	COORDINATOR(S)/CONTACTS	FUNDING/SUPPORTING BODY	COLLABORATING BODIES
Livebearer Fish Conservation Programme, Central Mexico	Dr G Reid	Mexican Universities	FAITAG Livebearer Conservation Group and Viviparous Society.
Tadpole Shrimp Species Recovery Programme, UK	Dr G Reid/M Crumpler/J Bell, Aquarium Dept.	English Nature/NEZS	English Nature and Zoo Federation Fish and Aquatic Invertebrate Taxon Advisory Group.
Sand Lizard Species Recovery Programme, UK	Dr G Reid/K Brown, Reptile Dept.	English Nature/CCW/WWF(UK)	English Nature with Herpetological Conservation Trust, Sefton Rangers, Cheshire Wildlife Trust, Countryside Council for Wales and WWF.
Support for Zoo Outreach, India	N Ellerton	NEZS/BAANC	CBSG / Zoo Outreach India (Dr S Walker).
Dormouse Reintroduction Programme, UK	N Ellerton P Rudd	English Nature/NEZS	Cheshire Wildlife Trust.
Captive Breeding Specialist Group	Dr G Reid/ Animal Division	NEZS	Financial support from NEZS as one of many contributing zoos.
Save the Rhino International	Dr G Reid	NEZS/Save The Rhino	Financial support from NEZS for a Northern White Rhino reserve in East Africa.
Philippine Spotted Deer Recovery Programme	N Ellerton	NEZS	Financial support <i>in situ</i> also from Mulhouse Zoo, Melbourne Zoo, Berlin Zoo.
Orang utan Conservation Lower Kinabatangan Region, Sabah, Malaysia	N Ellerton	NEZS	Busch Gardens, Chicago Zoological Society, Columbus Zoo, Denver Zoo, Topeka Zoo Wildlife Conservation Society, Zoological Society of Milwaukee.
Falklands Conservation-Penguins	Dr R Wilkinson	NEZS/Penguin TAG	Financial support from NEZS through membership and collection box.
World Parrot Trust.	Dr R Wilkinson	NEZS/ World Parrot Trust	Financial support from NEZS through interpretation display and collection box.
Red-vented Cockatoo <i>in-situ</i> conservation	Dr R Wilkinson	NEZS/EEP	Financial support from NEZS through Red-vented Cockatoo EEP programme.
Harvest Mouse Conservation Programme, UK	P Rudd	NEZS	British Museum of Natural History, New Forest Quest, Vincent Wildlife Trust and others.
Conifer Conservation Project	Dr G Reid, E Rudman (Gardens)	Sainsbury Trust Grant	Royal Botanic Gardens, Edinburgh, with Edinburgh and Paignton Zoos and Liverpool John Moores University.
British Schools Expedition Society expedition to Namibia (Anna Poultney)	Dr G Reid	NEZS	NEZS financial support. BSES & Namibian Wildlife Department.
Study of Shenandoah National Park in Virginia, USA., (Annabel Crossman)	Dr G Reid, C Vere (Marketing)	NEZS/Earthwatch & others	Placement through ARCO Young Scientists of the Year Awards. NEZS gave financial support.
Veterinary survey of Maned Wolves in Brazilian zoos	Animal Division	NEZS	NEZS Zoology Studentship funded through the Membership.
Veterinary survey of trypanosome prevalence in Warthogs (Uganda)	Animal Division	NEZS	NEZS Zoology Studentship funded through the Membership.
Ecological Survey of Seychelles Fruit Bats	Animal Division	NEZS	NEZS Zoology Studentship funded through the Membership.
Survey of Philippine Fruit Bats and Water Monitor Lizards	Animal Division	NEZS	NEZS Zoology Studentship funded through the Membership.
Feeding ecology of elephants in Ghana	Animal Division	NEZS	NEZS Zoology Studentship funded through the Membership.
Dian Fossey Gorilla Fund	Dr G Reid	NEZS	NEZS financial support.
The Environment Council	Dr G Reid, S O'Brien (Estates)	NEZS	NEZS financial support.

13 POST-GRADUATE & POST-DOCTORAL PROJECTS SUPPORTED BY CHESTER ZOO  
(Supervisor/Coordinators indicated in brackets, if applicable)

SUBJECT	RESEARCHER	QUAL.	FUNDING/ SUPPORTING BODY	COLLABORATING BODY
Chimpanzee behavioural study in Gashaka Gumti, Nigeria	S Hogarth (Dr G Reid)	PhD	World Wide Fund for Nature (UK) & NCF	WWF & Nigerian Conservation Foundation/ University of Liverpool (Dr B Stevens-Wood).
Population census of Chimpanzees in Gashaka Gumti, Nigeria	Adam Britt (N Ellerton)	Post Doctoral Research	WWF/NCF	World Wide Fund for Nature & Nigerian Conservation Foundation.
Influence of Spotted Hyaena kleptoparasitism on the large African predator guild, Zimbabwe	Alistair Pole (N Ellerton)	PhD	NEZS/MMU	Manchester Metropolitan University (Dr B Stevens-Wood).
Lemur behaviour in the context of reintroduction programmes	A Britt (Dr G Reid)	PhD	Wingate Scholarship/ BAANC	University of Liverpool (Dr R Crompton).
Conservation biology and behavioural ecology	R Meredith	MSc	NEZS/MMU	Manchester Metropolitan University (Dr B Stevens-Wood).
Taxonomic evaluation of rare Amazonian Parrots	M Pilgrim (Dr R Wilkinson)	PhD	NEZS/Amazona Society	Liverpool John Moores University (Dr Mark Willcox <i>et al.</i> ).
Survival and movement of captive bred Barn Owls in a local release programme	I Mason (Dr R Wilkinson)	MPhil	NEZS/L&D Blond Trustees	University of Keele (Dr C Hackney).
Behaviour and ecology of Helmet Shrikes in Zambia	R Stjernstedt (Dr R Wilkinson)	PhD	NEZS/MMU	Manchester Metropolitan University (Dr C Goldspink).
Ecology of African Grey Parrots in Cameroon	A Tamungang (Dr R Wilkinson)	PhD	NEZS/WWF/WAOS	University of Ibadan, Nigeria (Prof. S S Ajayi) / World Wide Fund for Nature.
Taxonomy and evolution of eretmodine cichlid fish of Lake Tanganyika	S Wheeler (Dr G Reid)	PhD	LJMU	Liverpool John Moores University (Dr P. Oakland).
Genome Resource Bank Cryobiology project	Dr G Reid	Post Doctoral Research	EU Biotechnology grant	University of Stirling, Scotland/FAO, Rome (Dr K Rana) and Institute of Zoology, London (Dr W Holt, Principal Researcher).
Microsatellite DNA in determining parentage	(Dr G Reid)	Post Doctoral Research	Fisheries Society of Great Britain	London Zoo Aquarium (Dr H Hall, Principal Researcher).
Zoogeography of the Guinea-Congo region	Dr G Reid	Post Doctoral Research	NEZS	WWF and other partners.

## 42 undergraduate and postgraduate students engaged in research projects registered in the zoo

First name	Surname	Qualification	Subject	University/College	Zoo area of study	Home
James	Barrett	BSc	Behavioural Ecology	UC Chester	Blackbuck	Norfolk
Lesley	Beard	HND	Travel & Tourism	Wirral Metro College	Winter visitors	Wirral
Charlotte	Beaumont	PhD	Zoology	Southampton	Cats	Southampton
Lesley	Bellwood	BSc	Psychology	UC Chester	Elephants	Co Durham
Jacqueline	Bishop	BSc	Zoology	London	Flamingo Lakes	Southampton
Anthony	Burt	BSc	Animal behaviour	Liverpool	Lemurs/Primates	Chester
Leah	Clift	BSc	Psychology	Liverpool	Chimpanzees	Oldham
Emily	Collyer	BSc	Biology & Psychology	UC Chester	Prairie Marmots	Shropshire
Jillian	Davies	BA	Biology	Warwick	Chimpanzees	Bebington
Amelia	Dickman	BSc	Zoology	Liverpool	Cheetahs	Exeter
Mereil	Evans	BSc	Applied Biology	Manchester Metro	Primates	Southall
Stephen	Gannon	PhD	Experimental Animation	Central Lancashire	Animal movement	Manchester
Sally	Goddard	BSc	Zoology	King's College, London	Flamingos	Newquay
Lisa	Hannah-Stewart	BSc	Zoology	Liverpool	Chimpanzees	Liverpool
Matthew	Hartley	BVetMed	Veterinary Science	Royal Vet College, London	Veterinary	Loughborough
Jason	Hender	BA	Museum Design	Lincoln & Humberside	Primate Interpretation	Humberside
Paul	Hibbert	BSc	Animal Behaviour	Bolton Institute	Meerkats	Manchester
John	Highet BSc MSc	(Already qualified)	Diets and Environmental Enrichment	(Voluntary Veterinary work)	Chimpanzees	Ormskirk
Katheryn	Hill	BA	Archaeology and Prehistory	Sheffield	Primates	Rotherham
Clare	Jones	BEEd	Biology	Liverpool	Orang utans	Liverpool
Joanna	Lawton	PhD	Biology	UC Chester	Blackbuck	Warrington
Matthew	Leach	MSc	Applied Animal Behaviour	Edinburgh	Elephants	Reading
Kirsty	Lewis	MSc	Evolutionary Psychology	Liverpool	Chimpanzees	Somerset
Victoria	Longbottom	BSc	Zoology	Liverpool	Parrots	Halifax
Amy	Lysaght	BA	Psychology	Reading	Lemurs	Shrewsbury
Joanne	Martin	PhD	Primate Behaviour	Bolton Institute	Chimpanzees	Bristol
Melanie	McAdam	MSc	Evolutionary Psychology	Liverpool	Primates	Prestatyn
Fiona	McCracken	MSc	Applied Animal Behaviour	Edinburgh	Chimpanzees	Sychdyn, Flintshire
Winifred	McKague	BSc	Biology	UC Chester	Lemurs	Chester
Sally	Medhurst	BSc	Biology	Manchester Metro	Nicobar Pigeons	Nottingham
Sophie	Naylor	BSc	Psychology	Portsmouth	Orang utans	London
Fiona	Ross	BSc	Zoology	Nottingham	Mammals	Halesown
Derek	Snee	MBA	Business Studies	Warwick	Service standards	Hawarden
Oliver	Stanger	BSc	Biological Science	Manchester Metro	Primates	Morpeth
Susan	Stulock	MPhil/PhD	Psychology & Biology	Bolton Institute	Lemurs	Bolton
Joanne	Taylor	BSc	Psychology	Leeds	Animal Housing	Ulceby, Lincs.
Kerry	Thompson	HND	Travel & Tourism	Wirral Metro College	Winter visitors	Wirral
Annella	Tindale	BSc	Psychology	Leeds	Animal Housing	Potters Bar
Kate	Wade	BSc	Psychology & Biology	Bolton Institute	Lemurs	Beverley
Rachel	Walker	BSc	Agriculture	Harper Adam UC	Marketing	Grimsby
Suzy	Wood	BSc	Zoology	Liverpool	Chimpanzees	Bristol
Kath	Worthington	BSc	Environmental Biology	Liverpool	Chimpanzees	Manchester

## 97 students using work experience at the zoo as part of their studies

First name	Surname	Course and College/ School/University	Home	First name	Surname	Course and College/ School/University	Home
Ray	Aspinall	Prep Training Cse, Wirral Metro C.	New Ferry	Janet	Lockyer	Biology undergraduate, Manchester U.	Kettering
Catherine	Atherton	[JM] Pre veterinary degree	Great Sutton	Mark	Lowrie	[JM] Pre veterinary, Frodsham High S.	Frodsham
Marrin	Baggott	Biology undergraduate, Open U.	Chester	Elizabeth	Lyon	Pre veterinary degree course	Manchester
Belinda	Barnes	Marketing and Business Studies	Willaston	Emma	Mahoney	Duke of Edinburgh's award	Wrexham
Joanna	Beal	National Diploma, Fishery Studies, Sparsholt C.	Hampshire	Ron	Mannion	Biology and PE, Hope UC, Liverpool	Wirral
Lesley	Bellwood	Psychology, UC Chester	Cleveland	Angela	Masterson	A level student, pre herpetology career	Manchester
Caroline	Bennett	[JM] Pre Marine Biology, Ellesmere Port	Little Sutton	Morna	McDowell	Pre Equine Science/Veterinary degree	Cork, Eire
Debbie	Bennett	PGCE student, Leeds U.	Leeds	Catherine	McLaughlin	Animal Science, West Cheshire C.	Birkenhead
Emma	Berran	Zoo Animal Mngt Cse, Stapeley Water Gardens	Crewe	David	McMahon	Wildlife Park Ranger, Wirral MBC.	Wirral
William	Bolton	Undergraduate artist	Oxfordshire	Raychel	Morrison	Catering experience, Ellesmere Port RC High S.	Ellesmere Port
Joanna	Brannigan	NVQ III Administration, West Cheshire C.	Chester	Jo-Ann	Mosley	Biology, Manchester U.	Midlands
Ross	Brodie	Pre university zoology.	Portsmouth	Christopher	Moss	GCSEs, pre Marine Biology, Lechlade	Gloucestershire
Philip	Brown	Post First Diploma, Animal Care, Reaseheath C.	Chester	Lesley	Mossop	Nat Dip Animal Care, Reaseheath C.	Chester
Raymond	Cobbe	Into jobs scheme - gardens	Broughton	Naomi	Mulder	BSc, Animal Management, Van Hall Inst.	Netherlands
Philip	Davies	Zoo animal management course	Aberystwyth	Marianne	Mulder	BSc, Animal Management, Van Hall Inst.	Netherlands
Stuart	Davies	Post school, voluntary work	Chester	Samantha	Munro	Pre Nat Dip, Animal Care, Hameln S.	Germany
Corinne	Day	Biology undergraduate, Manchester Metro U.	Worthing	Melissa	Murphy	Pre veterinary degree, Liverpool U.	Manchester
James	Dean	Graduate microbiologist	Staverton	Nibha	Namboodiri	Zoo Outreach Organisation, (ZOO) India	India
Linda	Devine	Animal Management, Stockholm HS.	Lidingo, Sweden	Amy	Nathan	Animal Care - pre University	Burton, Wirral
Amy	Dickman	Zoology - Liverpool U.	Exeter	Daniel	Newall	Pre college, First Diploma, Animal Care	Chester
Emily	Dukes	[JM] Frodsham High School	Frodsham	Helen	Nicholas	Nat Dip, Animal Care, Broomfield C.	Hyde
Claire	Edlington	Zoology - Bristol U.	Clitheroe	Paul	O'Donoghue	Pre Biological Sciences, Oxford U.	Wigan
Neil	Edmunds	Catering experience, Upton High S.	Chester	Rhian	Owens	Animal Care, Reaseheath C.	Elton
John	Ellinson	[JM] Ysgol Bryn Offa	Wrexham	Stephen	Oxford	Biology undergraduate, Manchester U.	Haslemere
Daniel	Fletcher	[JM] Catering experience, Christleton High S.	Chester	Emma	Pennington	[JM] Wetherhead HS.	Wirral
Jeanette	Fluitsma	BSc, Animal Management, Delft U.	Netherlands	Maria	Pettamm	[ex JM] Business Studies, Reaseheath C.	Chester
Teresa	Gibson	Post Grad Higher Dip in Admin, W Cheshire C.	Llangollen	Lisa	Pike	Nat Dip, Animal Care, South Cheshire C.	Knutsford
John	Gill	[JM] Abraham Guest S. Wigan	Wigan	Anne	Read	Veterinary undergraduate, Liverpool U.	Carlisle
Angie	Gooderham	Pre Marine Biology, Whitby High S.	Ellesmere Port	Abigail	Rosenbloom	Zoology, Bristol U.	Tarporley
Barry	Grain	NVQ III Horticulture, Reaseheath C.	Chester	Guiomar	Santamaria	Post graduate, Oviedo U. Spain	Spain
Craig	Gresty	Animal Science Course, W. Cheshire C.	Chester	Christopher	Saul	Pre veterinary degree, King's S. Chester	Chester
Myfanwy	Griffiths	Zoology, U of Wales	Lyme Regis	Elizabeth	Seed	A levels - pre zoology, Giggleswick S.	York
James	Harrison	[JM] Pre zoology, Frodsham High S.	Runcorn	Nicolette	Seltenrijch	BSc, Animal Management, Delft U.	Netherlands
Glyn	Hayes	Advanced science, South Cheshire C.	Crewe	Kate	Shaw	First Dip. Animal Care Cse, Reaseheath C.	Wallasey
Joanna	Hewitt	A Levels, pre Marine Biology/ Zoology degree	Chester	Carol	Simmons	[JM] Prenton High S.	Birkenhead
Michael	Hickson	[JM] Catering experience Stanney High S.	Ellesmere Port	Julia	Stagova	Veterinary undergraduate, Russia	Russia
Alexander	Holt	[JM] Birkdale High School	Southport	Emily	Strong	Undergrad., App. Marine Biology, Heriot-Watt U.	Edinburgh
Mike	Hopkins	A levels, pre Electrical Engineering degree	Great Sutton	Colin	Stubbs	Microbiology graduate, Wildlife journalist	London
Karl	Horton	First Dip Animal Care Cse, Reaseheath C.	Chester	Katie	Sumner	Pre veterinary degree	Neston
Dawn	Jackson	Nat Dip, Animal Care, Staffordshire Coll of Ag.	Staffordshire	Emma	Sunderland	Veterinary undergraduate, Royal Vet C. London	Nelson
Sarah	Jones	[JM] Neston County High S.	Parkgate	Sophia	Swindlehurst	Pre zoology degree, Lymm High S.	Lymm
Kevin	Jones	[JM] Bishop's High S.	Chester	Bronya	Tate	Post A Levels	Darwen
Neil	Jones	Gardening experience, Dorrin Park S.	Chester	Emma	Thorpe	Pre veterinary degree, Edinburgh U.	Southport
Hannah	Leather	[JM] Frodsham High S.	Frodsham	Lucy	Turner	[JM] Upton High School	Chester
Sally	Lee	Pre veterinary degree	Bury	Tara	Valance	National Diploma, Animal Care	Pembrokeshire
Elizabeth	Lee	[JM] Pre veterinary/army Neston High S.	Chester	Marloes	van der Vliet	BSc, Animal Management, Van Hall Inst.	Netherlands
Kevin	Lewis	A levels, pre Engineering degree	Ellesmere Port	Jenny	Vickers	Pre Equine Studies, Bristol U.	Chester
				Paul	Walker	Pre A levels, Christleton High S.	Chester
				Emily	Witty	Pre veterinary degree, Birkenhead HS.	Birkenhead
				Gayle	Wooton	Pre veterinary degree, West Kirby GS.	Heswall

[JM] = Junior member

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*Volunteers with the Elephant Experience Cart*

During 1996, 58,799 individuals came to us on organised educational visits. These ranged from nursery children to university undergraduates. We are delighted, that despite rising transport costs and other financial pressures, the Zoo continues to be valued as an educational resource.

Our 'flagship' topic was the Business Studies/Tourism & Leisure course run in conjunction with Marketing and Personnel, attracting over 1700 students and teachers throughout the year. Chester Zoo was one of the first organisations to offer this initiative, and the excellent feedback that we have had gives us great encouragement for future development.

HM Customs and Excise provided us with many confiscated items for use on our experience carts and in our teaching programme. Customs also mounted an exhibition in the zoo in July to remind people of the consequences of illegally importing animals, and restricted animal products, into the UK.

The Education Division was heavily involved in the Zoo Federation's *Tiger Week*, and with the help of other members of the staff and, of course, our volunteers, we raised a total of £2,000 which will go directly to Tiger conservation projects in nature.



*'Tiger Week'*

Our corps of some 80 volunteers managed to achieve an 18% increase in visitor contact through their various activities. Highlights of the volunteer year include the opening of the new *Let's Make Centre*, made possible through generous funding from NWS Bank and, of course, the 'Christmas Journey'. This has become

something of an institution, and in this, its ninth year, attracted over 2,600 'journeymen'. An innovation for 1996 was the involvement of various members of staff in the roles of the Kings, Father Christmas and Joseph.

Upgrading of the collection's interpretative signage is well underway, with the new, larger format enclosure labels appearing at the Sand Lizard and Condor exhibits. Education products offered for sale included the Adaptations Pack for KS 3/4 and 'A' level, the Business Studies, Leisure and Tourism Pack and video for GCSE, 'A' Level and GNVQ. Two very popular new craft activities were the 3D elephant and the *Karha* cross stitch kit.

In March, we hosted the North West Secondary Schools Head Teachers' AGM at which our education staff gave a presentation on our facilities for school students. Our in-service courses for both primary and secondary schools attracted much interest and we retained our strong links with colleges and universities. Julie Coxon, our part time support assistant, left for another job in the South of England and was replaced by Teresa Gibson. Joan Butler, one of our primary teachers, retired after four years with us but continues to work on an occasional basis in a voluntary capacity. Heather Dibbs was taken on in September as a part time primary teacher. I took up my new position as Head of Education at the beginning of November and look forward to maintaining the high standards set by the Division and to developing new directions in the future.

*Stephen McKeown*  
*Head of Education*



*Opening of the new Let's Make Centre*

The Zoo's grounds within the perimeter fence cover an area of approximately 50 hectares (110 acres) with more than 20 km (12 miles) of tarmac roads. It is no wonder people find it difficult to see the whole of the Zoo in one visit. There are 166 buildings and enclosures within the Zoo, all requiring either heating, lighting or water and, as a result, in 1996 the Zoo used:

Town Water	41,699,000 litres
Well Water	155,111,000 litres
Gas	56,422 cubic metres
Fuel Oil	330,635 litres
Electricity	1.75 million KW

The Zoo is continually upgrading its facilities and utilities, installing new heating and lighting to the far corners of the grounds. Due to the increased demand for water, we have completed planning to install an additional bore hole on the West side of the Zoo in 1997.

One of our major achievements this year is the construction of the *Condor Cliffs* aviary. This makes use of the redundant Brown Bear enclosure and has been superbly sculptured to include a cliff face. This huge exhibit is enclosed in a magnificent new netted structure, a method increasingly used throughout the Zoo. It was officially opened by His Grace, the Duke of Westminster on 17 December 1996.

Other completed projects officially opened during 1996 were: **Sand Lizard Vivarium** opened 14 May by Councillor Richard Short, the Lord Mayor of Chester. This is adjacent to the Tropical Realm. Because of the timing of the hibernation of the Sand Lizards, completion had to be done on a very tight deadline. This project was carried out in conjunction with the Herpetological Conservation Trust, English Nature, The Worldwide Fund for Nature, the Countryside Council for Wales and The European Community *Life* project.

**New Entrance Complex** opened 9 September by Councillor Lilian Price, the Lord Mayor of Chester.

**Elephant Nursery** opened 24 September by Mari Chantry. Our baby Elephant, *Karha*, has proved a great success. To make life as safe as possible for her, the East end of the Elephant House was converted into a nursery and includes a large bathing pool, complete with hot water.

**Let's Make Centre** opened 28 November by John Mercer, Managing Director of NWS Bank.

The Zoo is subject to very stringent licensing laws including for health and safety and the environment. Large allocations of funds have to be used to ensure that the Zoo maintains its facilities to meet these requirements. This year, to meet the standards of the Zoo Licensing Act, automatic gates have been installed within the elephant complex. This now means that keepers do not have to come into physical contact with the animals as they move between the house and the paddock areas.

Work has begun on our next major exhibit which is the *Monkey Islands* development and phases 1 and 2 have been completed within the year. The work includes diversions of the roadway adjacent to the original House and the

construction of three large moated islands. The outside of the building has been overlaid with smooth faced natural stone blockwork. The islands have been landscaped and magnificent waterfalls have been built, forming part of the water re-circulation system. As many trees and plants as possible have been saved in the development of the islands.

The entrance to the building has been relocated to the North gable end and a new extension added. This includes the first new monkey yard area together with modern kitchen and welfare facilities, a rest room, showers, WC and off show storage. Work is proceeding with the next phase which involves the complete internal refurbishment of the existing house in 1997. The construction has not been all plain sailing. When excavation began for the moats, large pockets of sand were found. Clay was then imported to puddle and seal the moats. This work has proved to be very successful with no leaks!

The Groundstaff deserve a big 'thank-you' as this was the first full year that the new entrance and car parks were in full flow. Visitor numbers have been in excess of 18,000 a day over some of the Bank Holiday periods. New methods of car parking have been used with vehicles parked at the rate of one every three seconds.

The railway has had another effective year, with the work carried out on the installation of the new controls for the motors proving very successful. Well done to Peter Bartley and all his team. We estimate more than 300,000 passengers used the railway this year. The Waterbus remains a big attraction with visitors although it now has some competition.

The Gardens have had a good 'blooming' year and under the guidance of Head Gardener, Eric Rudman, they achieved success by winning two awards:

- 1996 Certificate of Merit for the *Best Large Tourist Attraction*, North West in Bloom.
- 1996 Award Certificate in *Chester in Bloom* Competition for an exceptional contribution to the beauty and attractiveness of the Chester District.

To learn the latest techniques, nine of the gardening staff have undertaken training for the NVQ Level 2 in Amenity Horticulture in conjunction with Reaseheath College.

The Zoo continues to work with the Cheshire County Council Employment Training Scheme. From this a full crew of painters and decorators have been working throughout the grounds. The advantages to the Society are clear and the scheme gives the trainees excellent site experience and a renewed confidence in their skills.

**Steve O'Brien**  
*Estates Engineer*



*Monkey Islands at an early stage*

The financial arrangements of the Society have required close monitoring during this especially prosperous year, details of which appear in the accounts section. Attention has been paid, in particular, to re-planning capital and maintenance expenditures to exceed the budgeted levels.

During the winter of 1995/96 an improved capital expenditure control system was established to ensure focussing on agreed projects and on the control of spending plans. Nearly every planned project was completed and many splendid, often enhanced attractions - more than in previous years - are the result. An overdue face-lift is to the old staff Time Office entrance which has now been tastefully re-clad in pine and renamed as the Gatehouse! Maintenance and repairs have been the Cinderella of spending over the years and there is always catching up to do to keep the Zoo smart and modern. This year, nearly all maintenance requests have been dealt with.

When the Society moved into a positive cash situation at the end of July, earlier than ever before, further plans had to be laid. First, surplus funds of up to £1m had to be invested in the money market for two months. Second, a revised strategy for financial borrowing over the next year had to be established, in conjunction with greatly increased demands for cash for animal developments and capital expenditure in 1997.

During the year discussions have taken place on the Personnel function. There is a need to modernise and develop taking into account ever more complex

employment regulations and Health and Safety provisions. As a result, Penny Rudd has agreed to split her dual roles in Personnel and in the Animal Division to assume a more senior post as Animal Division Administrative Manager. Jayne Quinn has been appointed as the new Personnel Manager from 24 March 1997, with an extensive job specification.

After much investigation and review in 1996, Council decided to set up a Fund Raising Department headed by a Development Manager. John Regan took up this post on 1st January 1997. Details are given on page 35.

Much effort has continued to be put into modernising our computer capability (see page 38). Most staff now have upgraded hardware and agreement was reached to standardise on commonly used software - *WordPerfect* and *Quattro Pro* - both in the *Windows* environment. Progress with networking of computers has been slow, but 1997 should show improvements.

*Michael Johnson*

*Financial Controller*



*We now have computerised tills to speed visitors in at the new entrance*

This was the *annus mirabilis*, when all the good things happened. The success of the elephant house team in hand rearing *Karha* set the tone of success for the year and provided a springboard for Marketing. Orang utans, chimpanzees, penguins, lions, giraffes and camels all produced high profile youngsters to delight the visitors, giving us something purposeful to sell: and, of course, this in no way overlooks the important work of the other parts of the collection.

A timely coordination of the printing of leaflets across the first critical winter weeks of *Karha's* life meant that all our 1996 leaflets featured her on the cover. We inserted a four page 'extra' in the *Guide* and incorporated her on other leaflets and the cover of *Chester Zoo News* and *Zoo Life*. *Karha* joined the select band of animals who have their own TV commercial. ***Karha* has made our year.** Much of the recovery in numbers is probably due to her. The first edition of *Karha's Story*, a full colour children's book, illustrated by Hannah Lawson (now at the Royal College of Art in London), with words by Pat Cade, sold out before Christmas. Approaching a fifth of the print run was sold to bookshops and libraries across the region. Postcards, posters, T-shirts, limited edition prints and many other themed items followed to consolidate her appeal.

A year ago, we had just seen a few weeks' trading from the new *Ark* retail shop at the main entrance. This is probably the finest zoo retail site in Europe. Retail sales have risen by 33% (per head), proving investment pays off. There was additional business at Christmas through a special access to the shop from the car park.

Appropriately, The Lord Mayor of Chester, Councillor Lilian Price, was our guest to declare the new entrance and shop officially open. Happily, business at the original *Fountain* site was substantially maintained, allowing us to widen the range of stock and improve our selection of books. Guide sales were encouraging, with selective 'commando selling' on the busiest days boosting sales from a special desk at entrance. The second edition in the autumn meant we could update the map and cover picture to show *Karha* with adult elephants.

Catering results were well above budget, though takings per head have not changed. We completely refitted the *Rainbow*, making it a walk-in sundae bar, and are grateful to *Birds Eye Walls* for their support. We plan a comprehensive review of operations in 1997. But if we take the similar unresponsive position of retailing two years ago - the now proven cure is investment! Within the *Oakfield*, small but important improvements have been made, bringing better lighting and heating. The new Functions Planner gives the Group Sales Office a quality sales aid. Highlights were the *Powergen* families day and *Zeneca* safari bookings.

At last, we have completed the exterior signage of the zoo, with elegant pieces of work by Hannah Lawson on the main approach, *Chester Zoo* in (alphabetical) animal figures, and a trio of life size animals just inside the gates to reassure the unfamiliar visitor. On the M53, we now have signs at junction 10 southbound and improved local signs too. Two handsome visitor information boards have replaced much older material at the entrance.

A year ago we began the Leisure, Tourism and Marketing

presentation series with Education. These have grown (like *Karha*) with 'full house' signs often displayed.

Membership topped the 10,000 target - three years early. Adoptions are happily moving upwards again. Our thanks to Maureen Allsopp and Mary McManus for this most effective operation. Outreach work flourished, and we had a full schedule of talks to influence groups, schools and colleges as far away as South Wales. *Noah's Ark* went to Manchester, and the Lord Mayor's Shows in Chester and Liverpool and also supported specialist Aquarist exhibitions. The launch of the three electric scooters was a small triumph. Much of the credit goes to stalwart Council Member Jean Dixon for her enthusiasm and persistence. We must also thank the City of Chester's Mobility Officer, Tim Metcalfe and the City Council's Mobility Committee for funding a scooter. *Chester Mobility Centre* gave us good advice and helped with the hut. *Ross Care* from Ellesmere Port have provided a third scooter on loan. We have opened up new dimensions with this initiative.

Through the year, we were able to add to our library resources of up-to-date, broadcast quality video material taken to our direction. We succeeded in getting our own video footage on TV (and in December filmed for the BBC's *Blue Peter*). The new retail video is now ready, incorporating major achievements of the year. Our Internet site is running well. It was developed by Member, John Benbow who has been awarded a 'Gold Paw' award - the first outside North America.

Pat Cade continues to represent us with North West Tourist Board, ALVA and the Federation's PR and Marketing Committee. To all our staff - full time, part time, permanent and seasonal - a heartfelt 'thank you' for looking after an extra 100,000 visitors and doing it cheerfully and proficiently. The North West Tourist Board Silver Award, and the Special Certificate from the Duke of Westminster's Awards for Business & Industry are on show at the entrance!

*Chris Vere*

*Marketing Manager*



*New information board at the entrance*

## Membership

This has been a very buoyant year. A year ago we forecast that we could reach 10,000 members by the millennium. Thanks to 5,502 new enrolments in 1996, we achieved our target in December, with a year-end figure (all categories) of 10,173 paid up! Five members were awarded life membership, having reached the age of 60 and being fully paid up for 25 years.

The annual raffle was well supported, with the funds going to our scholarships for veterinary and zoology students.

These were selected by the Director and Curators and place a strong emphasis on fieldwork in the habitat countries: £2,406 was raised after all expenses were paid.

We had two special late night openings of the *Ark Shop* for members, when they enjoyed glasses of wine and mince pies as well as their 10% discount.

Through the year we hosted some lively speakers for the Saturday afternoon meetings which were extremely popular with our members (see page 36). Our thanks are due to all of our helpers who have supported us in so many ways during the course of the year.

**Maureen Allsopp**

*Membership Secretary*

## Adoptions

The number of individual Adoptions rose again this year to approximately 3,000. Around 200 of these are taken out by schools, youth organizations and companies. This takes the total number of individuals reached by the Adoption Scheme to more than 20,000! Many of these organizations put a good deal of effort into raising the adoption fee by sponsored walks, coffee mornings etc. A big thank you is due to them all.

More than 1,200 people attended the two *Adopter Days* in October. Favourable letters and telephone calls from adopters afterwards indicated that the 'Meet the Keeper' sessions were the highlights. The 10% discount voucher for use in the *Ark* and *Fountain* shops were much appreciated. More and more adoptions are taken out as gifts with Christmas being the most popular time.

We are most grateful to the many Tiger adopters who sent in donations to support Phil Whalley's sponsored parachute jump in May for *Tiger Week*.

**Mary McManus**

*Animal Adoptions Secretary*



'Contact session' in the indoor picnic area (below left)



Juniors try pond dipping at Lower Moss Wood nature reserve

## Junior Membership

The Junior club continued to thrive in 1996, with events that once again included old favourites such as the Contact Session, Tracks and Signs, Day with a Keeper, Summer Barbeque (this year we made a 10 metre long dinosaur on the Jubilee lawn with the help of the Chester fringe) and the Christmas party. New events for the year were our visits to the fascinating Natural History section of the Manchester Museum in February, a wonderful April day spent fossil hunting (and finding) at Wenlock Edge in Shropshire, the eight mile hike along the Wirral Way in May and a lovely day spent at South Stack and the Sea Zoo in Anglesey in June. Knowsley Safari Park hosted the Juniors in September, and Tatton Park's Rangers gave us a guided tour of the Deer Park in October. There was a new trip in November, when we visited the fascinating Nature Reserve and Wildlife Hospital at Lower Moss Wood in Cheshire. In addition, thirty juniors spent four days on a biology field trip to Rutland Water which was enormous fun. Our thanks are due to everyone who has helped us this year.

**Penny Rudd**

*Junior Club Leader*



The very popular 'contact session' (above and left)



The Council formed a Fund-Raising Task Force in 1996, which formulated a Fund-Raising Policy. This resulted in a recruitment exercise for a Development Manager. John Regan was the successful candidate.

The Zoo continues to receive much needed charitable support from both individuals and organisations alike.

The Sand Lizard vivarium has been built using very modern techniques and is a marvellous conservation project. Our thanks are due to English Nature, the World Wide Fund for Nature (WWF), the European Life project, the Herpetological Conservation Trust and the Countryside Council for Wales for their contributions (see page 4).

We have been able to add the magnificent *Condor Cliffs* aviary for our Andean Condors to our roster of attractions thanks to an extremely generous bequest of £25,000 from the estate of Sally, the late Duchess of Westminster (see page 4).

Our *Let's Make Centre*, extending a commitment to a full educational programme, was made possible by a very welcome gift of £16,000 from Chester-based NWS Bank.

A major application to the National Heritage Lottery Fund had been made for the renovation of the *Tropical Realm* and a bid for redevelopment of the Stableyard was placed with the Millennium Commission.

The growing legacy income in 1996 included a £10,000 bequest from Miss M Anderson and Miss M Thomas, which helped improve the elephant nursery facilities.

Pedigree Petfoods (*Aquarian Division*) kindly sponsored the attendance of our aquarists, Mike Crumpler and Justin Bell at the European Union of Aquarium Curators conference in Munich. *Aquarian* has also funded our magnificent new, all-colour, *Aquarium Guide* which went to press this year. Several external applications to support scientific study were successful for staff and research associates.

We must thank The City of Chester's Mobility Committee for approving a grant which bought the second of our fleet of three electric mobility scooters, and Mrs Eileen Ham whose generosity gave us the courage to go ahead with this project. *Ross Care* of Ellesmere Port have provided the third scooter on a permanent loan basis.

Major donations in 1996 included:

	£
* The Ronald and Kathleen Pryor Trust	12,000
* English Nature	12,500
* Misses Anderson & Thomas bequest	10,000
* Mr J Blewitt	3,000
* NWS Bank covent	3,200
* Countryside Council for Wales	2,000
* Primate Conservation International	2,000
* Mrs Eileen Ham (in memory of her late husband)	1,500
* Donations less than £1000	10,200
TOTAL	<u>56,400</u>

The Zoo is eager to thank and recognise all our supporters fully unless they prefer to be anonymous. Each major donor is not only acknowledged in the *Annual Report*, but individually and personally by the Director. We are especially grateful to *Kodak*, *Birds Eye Walls* and other suppliers for their continued support.

The new Development Manager, John Regan, will develop a strategic approach to encourage a wider range of support. This is likely to include:

- \* corporate and individual gifts
- \* legacy giving
- \* statutory support
- \* grants from independent grant making trusts
- \* further development of the membership and adoptions schemes.

We look forward to a steadily increasing income from these sources within the next few years.

We are grateful for the allocation of £5,000 in 1996 from the WWF as their contribution to the joint WWF/NEZS/Nigerian Conservation Foundation study of chimpanzees in Gashaka Gumti.

**Michael Johnson**  
*Financial Controller*



*Testing the Electric Scooters*

*Fifty four lectures were given in our lecture theatre, mainly on species conservation, animal welfare, and the environment.*

- 13 Jan** *Penguins - A Voyage to the Emperors*, Tony Ord. (MM)
- 2 Feb** *Conservation and Rural Development in Kyabobo National Park, Ghana*, David Bowes-Lyon & Jen Hurst. (FFI)
- 10 Feb** *Environmental and Wildlife Photography in the Tropics*, Edward Parker. (MM)
- 8 March** *Madagascar*, Tim Gunn. (FFI)
- 9 March** *The Coelacanth, a Living Fossil Fish: Its Biology and Conservation*, Professor G M Hughes. (MM)
- 13 April** *Director's Zoo Review 1995*, Dr Gordon McGregor Reid. (MM)
- 19 April** *Biology and Conservation of Sharks and Stingrays*, Dr Gordon McGregor Reid. (FFI)
- 25-26 April** *Aquatic Animal Management: New Horizons*. International Conference organised by Chester Zoo. (SM) 70 participants and 32 lectures/papers.
- 18 May** Annual General Meeting. (MM)
- 27 Sept** *UK Elephant International Conference/Workshop*, organised by Chester Zoo. (SM) 80 participants and 9 lectures/papers.
- 5 Oct** *Karha's First Year*, Derek Lyon. (MM)
- 25 Oct** *An Evening of Wolves*, Ian Redman. (FFI)
- 9 Nov** *Hilbre Island*, John Gittins. (MM)
- 29 Nov** *Voyage to the Emperors*, Tony Ord. (FFI)
- 14 Dec** *The Honey Bee - Magic, Mystery or Science*, Professor Ian Munro. (MM)

MM Members' Meetings

FFI Fauna & Flora International Meetings (NW Group)

SM Special Meeting/Conference



*Aquatic Animal Management: New Horizons*

<b>Advertising Agency</b>	Williams, Barber & Bird, Liverpool
<b>Architects</b>	NBF Partnership, Chester WK Design, Ellesmere Port
<b>Auditors</b>	Coopers & Lybrand, Liverpool
<b>Bankers</b>	Barclays Bank, Liverpool
<b>Consultant Engineers</b>	Giffords, Chester and Southampton
<b>Environmental Consultants</b>	Caldicott Morgan, Mold Environment Agency, Mold
<b>Guide Book/Zoo Life Origination and Print</b>	Rockliff Printing, Liverpool
<b>Insurance Advisors</b>	Lowndes Lambert (UK) Ltd, Manchester
<b>Interpretation Consultants, Artists and Suppliers</b>	Fred Archer, Upton by Chester Elegy Design, Wrexham The Colour Copy Centre, Liverpool Michael Coupe, Heswall Les Grandy, Heswall Hannah Lawson, London Q E D Advertising & Marketing Ltd, Manchester Colin Tudge, London Turtle Graphics, Southampton Phil Whalley, Chester
<b>Land Agents</b>	Denton Clark & Co, Chester
<b>Land Use Planning</b>	RPS Ltd, Chester and Manchester Chantrey Davis, London
<b>Legal Advisors</b>	
<i>Company Law</i>	Walker, Smith & Way, Chester
<i>Employment and Contract Law</i>	Mace, Jones, Grundy Kershaw, Liverpool
<i>European Law</i>	McKenna & Co, London and Brussels
<b>Consumer Research Consultants</b>	John Adern Associates, Manchester
<b>Pension Fund Actuaries</b>	William M Mercer Ltd, Liverpool
<b>Pension Fund Managers</b>	Fraser, Green Ltd, London Nikko Capital Management (UK) Ltd
<b>Photographic Laboratories</b>	Ness Visual Technology, Widnes, Cheshire The Colour Centre, Whitby, Ellesmere Port Peter Spears, Chester
<b>Quantity Surveyor</b>	ERP Selection and Search, Northwich
<b>Recruitment Consultants</b>	John Billing Associates, Southport
<b>Television Production</b>	The Gatehouse Veterinary Hospital, Rossett
<b>Veterinary Advisors</b>	University of Liverpool Veterinary Field Station, Leahurst, Wirral
<b>Video Production Advisors</b>	Hollywood Video, Formby, Merseyside

Information Technology or 'IT' is developing fast globally, and is affecting everyone. At Chester we have taken steps to ensure that this phenomenon is extensively utilised and incorporated into the very structure of the Zoo. New technology can make us more efficient in administration and can also enhance the services that we provide for our visitors.

Computer use within the Zoo is not new, although the earlier systems and software were very different to the ones that we currently use. During the early 1990's (light years ago in computer technology terms) exciting things began to happen. Computers became more user-friendly and capable of doing much more than 'a number crunch'. Most importantly prices began to drop, enabling the zoo to operate more and better systems.

The Zoo adopted a Software Policy to standardise and integrate the many and varied programs used within the Society. This was the first major step forward to developing an efficient IT programme that would encompass all divisions. The next step in the plan was towards communication between users and systems and this meant the development of LAN's (Local Area Networks) and a WAN (Wide Area Network). As there was already a simple network based in Administration for Accounts and Payroll, it was decided to build on the present system to network all other aspects of Administration. This will now also serve as the nucleus of the developing WAN to eventually connect users throughout the Zoo together.

As we developed the Zoo's IT plan, another major transformation in computer technology took place with the arrival of more efficient central processing units (or CPU's based on 486, Pentium and most recently, MMX technology). This allowed for true 'multi-tasking' of software to become commonplace, i.e. we could handle several different computer tasks at the same time. We were able to move forward within our IT plan and utilise the new hardware and software without the heavy financial burdens or user problems that we would have otherwise had.

Our IT strategy is open-ended and continually developing. As we head towards our internal communication goal, another extremely fast paced world has emerged: the Internet, and with it global communication. John Benbow, a Zoo member, approached us with an idea to develop a Web Site: an area on the Internet where we can display information on any aspect of the Zoo, including photographs and up-to-date news. Anyone browsing the 'Net' can look at or print out the available information. This proposed scheme was implemented this year and we now have an excellent Chester Zoo Web Site (one of the first for a zoo in Europe and probably one of the best world-wide) that has won a 'Gold Paw' award in December 1996.



*Upgrading one of our PC's*

We should see increasing benefits from the network in 1997 as a real investment in both people and computing continues with more training and improved skills. As far as IT is concerned, Chester Zoo is in an excellent position as we go forward towards the 21st century.

**Keith Brown**  
*Systems Analyst*



The following mandatory information is given in the manner required by legislation.

■ The North of England Zoological Society owns a trading subsidiary, Chester Zoo Enterprises Ltd, whose profits are covenanted to the Society. The Society is a registered charity (No. 306077), a company limited by guarantee (No. 287902), regulated by its Memorandum and Articles of Association.

■ *The Council as elected by the members are:*

Dates for those newly elected and those resigning are given:

Trustees Name	Sub committees				
	Finance	Remuneration	Pension Fund	Programmes & Membership	Scientific & Veterinary
Beatrice Jones (Chairman)	•	•	•	•	
Hamilton Howatt (Vice Chairman)	•	•		•	
Rennie Barnes	•	•			
Dr David Cooke					•
Jean Dixon			•	•	
Kathryn Edwards (May 1996)				•	
Prof Brian Gardiner (May 1996)				•	
Elizabeth Livingstone				•	
Chris Mahon (May 1996)					•
John Makinson (May 1996)	•				
Keith Maybury					•
Tony Williams			•		
Nick Wilson	•				
Pat Wisniewski					•

*Dr. John Baker resigned May 1996*

*Brian Coles resigned May 1996*

*Jeni Jardine resigned May 1996*

*Graeme Jump resigned May 1996*

*Brian Moffett (elected May 1996) resigned September 1996*

■ The registered address of the Society is Upton, Chester, CH2 1LH.

■ The principal advisors of the Society are:

Auditors Coopers & Lybrand, Liverpool

Bankers Barclays Bank plc, Liverpool

Legal Advisors Mace, Jones, Grundy Kershaw, Liverpool  
Walker, Smith & Way, Chester

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

■ The charity's objectives are to run and develop a zoological gardens. Its policy is the encouragement of people to support wildlife and particular emphasis is placed on conservation, scientific and educational aspects on an international basis.

■ The strategic direction and policies of the Society are determined by the elected Council as Trustees, with consultation and discussion with the Director of the Zoo as Chief Executive and his staff who implement policy. The Trustees have six formal meetings a year, together with an Annual General Meeting. The Council Sub-committee structure is indicated against the names (opposite).

■ The development, activities and achievements of the Zoo in 1996 are detailed fully in the Annual Report, principally in the Chairman's and Director's reviews.

■ Financial results 1996 (1995 comparative in brackets):

The net incoming resources for the year of £375,000 (£136,000) resulted from higher turnover £7,434,000 (£5,984,000) less expenses rising to £7,059,000 (£5,848,000). These figures are derived from the consolidated figures for the group. The rise of £1,211,000 in expenses is principally caused by higher depreciation charges of £979,000 (£533,000), the direct costs associated with increased trading in shops and catering £2,036,000 (£1,663,000) and increased charitable expenditure £2,801,000 (£2,486,000). The £979,000 depreciation charges include an exceptional £400,000 write-down of the Monorail, bringing the investment more in line with the net income stream it earns for the Zoo.

The Operating Activities generated a cash flow of £1,466,000 (£712,000) and which was mainly allocated to fixed asset additions of £859,000 (£819,000) and to a reduction of bank overdraft of £375,000 (£164,000 increase).

The net assets held reflect the normal fixed assets and working capital required for the zoo's trading. Donations received during the year totalled £56,000 (£48,000). The 1997 capital expenditure projects include a new concept *Bat Cave* and a completely transformed *Penguin Pool*, in addition to completion of the *Monkey Islands* development.

Deep Sea Leisure plc, a rival commercial aquarium attraction, has received a £3 million European Regional Development Grant, and has begun building within three miles of the Zoo. Opening is expected in 1998, and as reported last year, some restriction in the Zoo's activities may become necessary in relation to the effects of this.

In accordance with Section 384 of the Companies Act 1985, resolutions proposing the reappointment of the Coopers & Lybrand as auditors of the Society and to authorise Council to determine their remuneration will be put to members at the Annual General Meeting.

*Signed on behalf of Council*  
**MAR Johnson**  
*Company Secretary*  
26 March 1997

*STATEMENT OF COUNCIL'S  
RESPONSIBILITIES IN RELATION  
TO 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 those financial statements, Council is required to:

- select suitable accounting policies and apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- 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 which disclose with reasonable accuracy at any time the financial position of the Society and the group, and to enable it to ensure that the financial statements comply with the Companies Act 1985 and applicable accounting standards. It 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.

*Approved by Council and signed on its behalf by  
MAR Johnson  
Company Secretary  
26 March 1997*

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

We have audited the financial statements on pages 41-46.

*Respective responsibilities of Council and auditors*

As described opposite, the Society's Council are responsible for the preparation of financial statements. It is our responsibility to form an independent opinion, based on our audit, on those statements and to report our opinion to you.

*Basis of 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 Council in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Society'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 affairs of the Society and the group at 31 December 1996, and of the net incoming resources and cash flows of the group for the year then ended, and have been properly prepared in accordance with the Companies Act 1985.

*Coopers & Lybrand  
Chartered Accountants and Registered Auditors  
LIVERPOOL.  
26 March 1997*

**CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED  
31 DECEMBER 1996**

	NOTES	1996	1995
		£'000	£'000
<b>INCOMING RESOURCES</b>			
Turnover of charitable trading activities	3	4,353	3,538
<b>Other incoming resources</b>			
Members' subscriptions		199	136
Animal Adoptions		96	80
Donations and legacies		56	48
Property rents received - external		36	32
Property rents received - from trading subsidiary	4	297	238
Net income of trading subsidiary	4	393	186
		<u>1,077</u>	<u>720</u>
<b>TOTAL INCOMING RESOURCES</b>		<u>5,430</u>	<u>4,258</u>
<b>RESOURCES EXPENDED</b>			
Gross expenditure of charitable trading activities including exceptional depreciation	3	1,413	926
<b>Direct charitable expenditure</b>			
Animal welfare		1,779	1,643
Education		249	218
Gardens		308	302
Property maintenance		465	323
		<u>2,801</u>	<u>2,486</u>
<b>Other expenditure</b>			
Fundraising and publicity		326	284
Management and administration		515	426
		<u>841</u>	<u>710</u>
<b>TOTAL RESOURCES EXPENDED</b>		<u>5,055</u>	<u>4,122</u>
<b>NET INCOMING RESOURCES/MOVEMENT IN FUNDS</b>	5	375	136
Accumulated funds brought forward		<u>2,180</u>	<u>2,044</u>
<b>ACCUMULATED FUNDS CARRIED FORWARD</b>		<u>2,555</u>	<u>2,180</u>

All activities are continuing.

There is no material difference between the result disclosed above and that on an unmodified historical cost basis.

All the Society's income is unrestricted except for animal adoptions of £96,000 (1995 £80,000) and donations and legacies of £29,000 (1995 £26,000) all held for, or expended on, specific projects (see note 15).

The Society has no recognised gains or losses other than the net surpluses above and therefore no separate statement of total recognised gains and losses has been presented.

The notes on pages 44 to 46 form part of these financial statements.

**BALANCE SHEETS AT 31 DECEMBER 1996**

	NOTES	CONSOLIDATED		SOCIETY	
		1996	1995	1996	1995
<b>FIXED ASSETS</b>		<b>£'000</b>	<b>£'000</b>	<b>£'000</b>	<b>£'000</b>
Tangible assets	9	3,979	4,114	3,919	4,050
Investment in subsidiary company	10	-	-	-	-
		<u>3,979</u>	<u>4,114</u>	<u>3,919</u>	<u>4,050</u>
<b>CURRENT ASSETS</b>					
Stocks	11	274	255	62	53
Debtors	12	174	142	285	192
Cash at bank and in hand		68	24	62	22
		<u>516</u>	<u>421</u>	<u>409</u>	<u>267</u>
<b>CREDITORS</b>					
Amounts falling due within one year	13	1,865	2,075	1,700	1,860
<b>NET CURRENT LIABILITES</b>		<u>(1,349)</u>	<u>(1,654)</u>	<u>(1,291)</u>	<u>(1,593)</u>
<b>TOTAL ASSETS LESS CURRENT LIABILITES</b>		<u>2,630</u>	<u>2,460</u>	<u>2,628</u>	<u>2,457</u>
<b>CREDITORS</b>					
Amounts falling due from two to five years					
Finance leases - net obligations		-	168	-	168
Corporation tax	14	75	112	75	112
		<u>75</u>	<u>280</u>	<u>75</u>	<u>280</u>
<b>NET ASSETS</b>		<u>2,555</u>	<u>2,180</u>	<u>2,553</u>	<u>2,177</u>
<b>FUNDS EMPLOYED</b>	15				
Income Funds - Restricted		<u>14</u>	<u>22</u>	<u>14</u>	<u>22</u>
Income Funds - Unrestricted					
Designated funds		802	410	802	410
Other charitable funds		1,739	1,748	1,737	1,745
		<u>2,541</u>	<u>2,158</u>	<u>2,539</u>	<u>2,155</u>
<b>TOTAL FUNDS EMPLOYED</b>		<u>2,555</u>	<u>2,180</u>	<u>2,553</u>	<u>2,177</u>

The notes on pages 44 to 46 form part of these financial statements.

The financial statements on pages 41 to 46 were approved by Council and were signed on its behalf

*Beatrice J. Jones*  
Chairman of Council.

*A. Rennie Barnes*  
Chairman of Finance Committee.

26 March 1997

**CONSOLIDATED CASH FLOW STATEMENT FOR THE YEAR ENDED 31 DECEMBER 1996**

		1996		1995	
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>	NOTES	£'000	£'000	£'000	£'000
Net incoming resources		375		136	
Net interest payable		114		156	
(Profit)/Loss on sale of fixed assets		(2)		10	
Depreciation charges net of amortisation of capital grants		979		520	
(Increase) in stocks		(19)		(27)	
(Increase) in debtors		(32)		(8)	
Increase in creditors due within 1 year		166		81	
<b>Net cash inflow from operating activities</b>			<b>1,581</b>		<b>868</b>
<b>RETURNS ON INVESTMENT AND SERVICING OF FINANCE</b>					
Interest received		9		1	
Interest paid - bank and other		(54)		(88)	
Interest paid - finance leases		(70)		(69)	
<b>Net cash outflow from returns on investments and servicing of finance</b>			<b>(115)</b>		<b>(156)</b>
<b>TAXATION</b>					
<b>Net cash outflow from taxation</b>			<b>(37)</b>		<b>(38)</b>
<b>CAPITAL EXPENDITURE</b>					
Receipts of capital expenditure grants		-		76	
Receipts from disposal of tangible fixed assets		17		24	
Payments to acquire tangible fixed assets	9	(859)		(819)	
<b>Net cash outflow from capital expenditure</b>			<b>(842)</b>		<b>(719)</b>
<b>NET CASH INFLOW / (OUTFLOW) BEFORE FINANCING</b>			<b>587</b>		<b>(45)</b>
<b>LESS FINANCING</b>					
Repayments of capital element of finance leases	16	(168)		(167)	
<b>Net cash outflow from financing</b>			<b>(168)</b>		<b>(167)</b>
<b>CASH</b>					
Decrease / (Increase) in bank overdraft		375		(164)	
Increase / (Decrease) in cash at bank and in hand		44		(48)	
<b>INCREASE (DECREASE) IN CASH IN THE YEAR</b>			<b>419</b>		<b>(212)</b>

The notes on pages 44 to 46 form part of these financial statements.

## NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 1996

**1. ACCOUNTING POLICIES**

These accounts have been prepared in accordance with the Statement of Recommended Practice (SORP) for Accounting by Charities.

The following accounting policies have been applied in dealing with items which 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 1995 financial statements.

The Society's systems analyse overhead costs departmentally. The SORP calls for expenses to be analysed on an operational basis and accordingly the overheads have been apportioned on this basis.

**Basis of accounting**

The financial statements have been prepared in accordance with applicable accounting standards in the United Kingdom under the historical cost convention.

**Basis of consolidation**

The consolidated statement of financial activities, balance sheets and cash flow statement include the financial statements of the Society and its subsidiary undertaking made up to 31 December 1996 and comply with recommended practice for accounting by charities.

The net profit of the subsidiary trading company, covenanted to the Society, has been shown as a single line on the statement of financial activities. The turnover and expenses relating thereto are shown in the notes to the financial statements. Its net profit is shown after accounting for various intra-group charges. Rent paid by the subsidiary to the Society has been shown within incoming resources whereas the apportioned overheads, recharged by the Society, have been deducted from the appropriate expense line in the statement of financial activities.

**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 are included in the balance sheets at their cost to the Society.

**Freehold property**

In accordance with the practice adopted in previous years, no depreciation has been provided on freehold land or property. It is the Society's policy to maintain its property in good condition, prolonging its useful life and making any depreciation provision immaterial. Repairs and maintenance costs are charged against income in the year that they are incurred.

**2. 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. The Society is registered with the Charity Commission No. 306077. As a registered charity, the Society is entitled to claim exemption from the charge to tax on income and chargeable gains at Section 505 Income and Corporation Tax Act 1988 and Section 256 Taxation of Chargeable Gains Act 1992. In the opinion of Council no corporation tax liability arose in respect of the Society's activities in the year.

**3. CHARITABLE TRADING ACTIVITIES****Turnover**

	1996		1995	
	£'000	£'000	£'000	£'000
Zoo admissions	3,844		3,109	
Monorail and boats	257		250	
Guides and other	252	4,353	179	3,538

**Gross expenditure**

Zoo admissions	470		445	
Monorail and boats	396		376	
Monorail and boats - Exceptional depreciation (see Note 9)	400		-	
Guides and other	147	1,413	105	926
		<u>2,940</u>		<u>2,612</u>

**4. TRADING SUBSIDIARY****- CHESTER ZOO ENTERPRISES LIMITED****Turnover**

	Catering	Shops	Total	
Direct Costs	1,780	1,301	3,081	2,446
	<u>1,226</u>	<u>810</u>	<u>2,036</u>	<u>1,663</u>

**Gross profit**

Indirect Costs - property rents paid to parent company	160	137	297	238
Indirect Costs - management charges paid to parent company	208	84	292	284
Indirect Costs - other overheads	59	5	64	75

**Net profit**

Amount covenanted to the Society	127	265	392	186
			<u>393</u>	<u>183</u>

**Retained in subsidiary**

			<u>(1)</u>	<u>3</u>
--	--	--	------------	----------

**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. Grants are amortised at a rate equal to the depreciation rate applied to the asset to which they relate.

**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 installments under such leases, net of finance charges, are included with 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 statement 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.

**Turnover**

Turnover represents cash and invoiced amounts of admission charges, goods sold and services provided (stated net of value added tax).

**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.

**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 separately on the face of the statement of financial activities in any year where a sale has occurred.

## 5. NET MOVEMENT IN FUNDS

This is after charging:

Auditor's remuneration - audit (Society: £8,000, 1995 £7,000)	
- non-audit (VAT planning and advice)	
Depreciation (net of grant amortisation)	
Hire of equipment	
Interest payable - bank	
Interest payable - finance leases	

1996		1995	
£'000	£'000	£'000	£'000
	11		10
	50		19
	979		520
	14		13
54		88	
69		69	
123		157	
9	114	1	156
	3		3

Less: Interest receivable

Operating lease rentals - plant and equipment

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 £376,000. (1995: £133,000).

## 6. DIRECTORS

(a) Remuneration and expenses. The members of Council, being charity trustees, received no remuneration (1995: Nil). One trustee was reimbursed during the year for travelling expenses incurred. The aggregate amount of those expenses was £ 35. (1995: Nil).

(b) Transactions with trustees. The Society entered into contracts with 2 firms with which Trustees have business connections as detailed below:

Mr. G. K. Jump, partner, Mace, Jones, Grundy Kershaw £6,000 (1995 £ 6,000)-Legal services

Mr. J. H. Howatt, partner, ERP Selection and Search £1,000 (1995 £ Nil)-Recruitment services

(c) Trustee indemnity insurance. Insurance costing £3,000 has been taken out by the Society to protect the Society, its trustees and other officers against the consequences of any unintentional neglect or default on their part.

## 7. EMPLOYEES

(a) Aggregate staff costs

Wages and salaries

Social security costs

Other pension costs

(b) Emoluments

1996		1995	
£'000	£'000	£'000	£'000
2,656		2,512	
223		213	
143		148	
3,022		2,873	

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 £40,000 upwards was as follows:

	Number	Number
From £40,001 to £50,000	1	2
From £50,001 to £60,000	1	-

(c) Number of persons employed

The average (full time equivalents) throughout the financial year was as follows:

	Permanent	Temporary	Permanent	Temporary
Animal Welfare	55	3	55	3
Maintenance and gardens	52	10	51	13
Education	3	-	3	-
Publicity and fundraising	6	-	6	-
Catering and shops	18	48	19	42
Administration	21	5	20	4
	155	66	154	62

## 8. PENSIONS

Pension contributions are determined by a qualified actuary on the basis of triennial valuations using the projected unit method. The assumptions which have the most significant effect on the results of the valuations are those relating to the valuation rate of interest (9% p.a.), the rate of future salary inflation and future increases in Lower Earnings Limit (7% p.a.), the rate of future pension increases (4% p.a.) and the rate of future dividend growth (5% p.a.). The most recent valuation was at 31 December 1993 which showed that the market value of the scheme's assets was £1,973,000 and that the actuarial value of those assets represented 102.3% of the benefits that had accrued to members, after allowing for an increase in pensions, in line with the increase in the Retail Price Index, with effect from 1 January 1995. The contributions made to the scheme have been:

	Members	Society
6% Contributory members	6%	19.3%
3% Contributory members	3%	8.2%
Non-Contributory members	Nil	2.2%

The actuary has given it as his opinion that, provided contributions continue at the revised rates as set out above, the next actuarial valuation as at 31 December 1996 is expected to show that the resources of the scheme are likely, in the normal course of events, to be sufficient to meet in full the liabilities of the scheme as they fall due. Contributions amounting to £1,000 were due by the Society to the fund at the year end and are included in creditors (1995 £8,000 prepaid).

## 9. TANGIBLE FIXED ASSETS

	Freehold property	Buildings & enclosures	Monorail system	Machinery & equipment	Animals	Total
	£'000	£'000	£'000	£'000	£'000	£'000
<b>CONSOLIDATED COST</b>						
At 1 January 1996	581	4,468	1,496	1,411	150	8,106
Additions	-	687	2	170	-	859
Disposals	-	-	-	(38)	-	(38)
At 31 December 1996	581	5,155	1,498	1,543	150	8,927
<b>DEPRECIATION</b>						
At 1 January 1996	-	2,119	737	987	149	3,992
Provided during year	-	217	550	212	-	979
Disposals	-	-	-	(23)	-	(23)
At 31 December 1996	-	2,336	1,287	1,176	149	4,984
<b>NET BOOK VALUE</b>						
At 31 December 1996	581	2,819	211	367	1	3,979
At 1 January 1996	581	2,349	759	424	1	4,114

The net book value at 31 December 1996 represents fixed assets used for

Charitable trading activities	-	1,014	211	37	-	1,262
Direct charitable purposes	-	1,521	-	158	1	1,680
Other purposes	581	284	-	172	-	1,037
	581	2,819	211	367	1	3,979

The depreciation charged for the year to 31 December 1996 was allocated:

Charitable trading activities	-	43	550	11	-	604
Direct charitable purposes	-	145	-	110	-	255
Other purposes	-	29	-	91	-	120
	-	217	550	212	-	979

**9. TANGIBLE FIXED ASSETS (Continued)**

Animal purchases of £ 6,000 (1995 £4,000) and sales of £1,000 (1995 £4,000) have been treated as revenue transactions. Included in the total net book value of tangible fixed assets is £70,000 (1995 £587,000) in respect of the Monorail system acquired under 'finance' leases. Depreciation for the year on these assets was £517,000 (1995 £117,000). An additional £400,000 depreciation was provided in 1996 in respect of the Monorail system to reduce its net book value to £211,000. The permanent diminution in the value of this asset reflects Council's opinion of the value of the income stream generated by it. Council is of the opinion that the market value of the Society's land, property and buildings is in excess of their book values. No European Regional Development Grant was received in 1996. In 1995 £76,000 was received in respect of certain assets acquired in the year. All the tangible fixed assets included in the consolidated statement above relate entirely to the Society, with the exception of the machinery and equipment where the equivalent figures for the Society alone are:

	COST	DEPRECIATION	NET BOOK VALUE
	£'000	£'000	£'000
At 1 January 1996	1,298	938	360
Additions	154		154
Disposals	(37)	(23)	(14)
Provided during year		193	(193)
At 31 December 1996	1,415	1,108	307

**10. INVESTMENT IN SUBSIDIARY COMPANY**

The Society has a wholly owned trading subsidiary, comprising 100 ordinary £1 shares in Chester Zoo Enterprises Limited, incorporated in the UK, which operates the catering and retail activities of the zoo from outlets rented from the Society. It covenants its taxable profit to The North of England Zoological Society. Audited accounts for the year to 31 December 1996 will be filed with the Registrar of Companies. A summary of its trading results has been included in Note 4.

	GROUP		SOCIETY	
	1996	1995	1996	1995
	£'000	£'000	£'000	£'000
<b>11. STOCKS</b>				
Goods for resale	235	219	23	17
Consumables	39	36	39	36
	274	255	62	53

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

**12. DEBTORS**

	GROUP		SOCIETY	
	1996	1995	1996	1995
	£'000	£'000	£'000	£'000
Trade debtors	17	14	11	8
Intra group debtor	-	-	93	61
Other debtors	118	84	143	79
Prepayments and accrued income	39	44	38	44
	174	142	285	192

**13. CREDITORS - AMOUNTS FALLING DUE WITHIN ONE YEAR**

	GROUP		SOCIETY	
	1996	1995	1996	1995
	£'000	£'000	£'000	£'000
Bank overdraft (secured)	993	1,368	983	1,331
Obligation under finance lease	185	185	185	185
Trade creditors	388	265	337	189
Corporation tax	38	38	38	38
Other taxes and social security costs	143	160	54	71
Other creditors	29	31	21	22
Accruals	89	28	82	24
	1,865	2,075	1,700	1,860

The bank overdraft is secured by a fixed charge on the freehold property. Interest is charged at a fixed rate related to the bank base rate.

**14. CORPORATION TAX**

As the Society is a Registered Charity it had been considered that no tax liability (other than V.A.T.) arose on income. However in 1993 the Inland Revenue raised an assessment on certain of the catering and souvenir retailing activities in respect of the financial years up to 1991. A settlement figure of £225,000 was agreed, payable in 6 equal instalments of £37,500, interest free, from 1994 to 1999. Since 1 January 1992 any commercial activity which falls outside the statutory exemption for the purposes of Corporation Tax has been conducted through Chester Zoo Enterprises Ltd, which pays all its taxable profits annually to the Society by Deed of Covenant.

**15. FUNDS EMPLOYED**

	Balance 1 January 1996	New funds	Funds Utilised	Balance 31 December 1996
	£'000	£'000	£'000	£'000
<b>Restricted Income Funds</b>				
Animal adoptions scheme	-	96	96	-
Animal welfare projects	12	17	19	10
Education projects	10	8	14	4
Other capital projects	-	4	4	-
	22	125	133	14
<b>Designated Funds</b>				
Animal welfare projects	263	917	618	562
Education projects	-	44	25	19
New entrance complex	26	5	31	-
Other capital projects	121	271	171	221
	410	1,237	845	802
<b>Other Charitable Funds</b>	1,748	4,068	4,077	1,739
<b>Total Funds Employed</b>	2,180	5,430	5,055	2,555

**16. ANALYSIS OF CHANGES IN NET DEBT DURING THE YEAR**

	Balance 1 January 1996	Cash Flow in 1996	Balance 31 December 1996
	£'000	£'000	£'000
<b>Financing</b>			
Finance leases, being total financing	353	(168)	185
<b>Cash</b>			
Bank overdraft	(1,368)	375	(993)
Cash at bank and in hand	24	44	68
Total net cash	(1,344)	419	(925)
<b>Net Debt</b>	991	(251)	740

**17. FINANCIAL COMMITMENTS**

	GROUP		SOCIETY	
	1996	1995	1996	1995
	£'000	£'000	£'000	£'000
Capital expenditure, contracted for but not provided:	91	12	91	12
There is an annual commitment in respect of operating leases which expire within two to five years of:	3	3	3	3

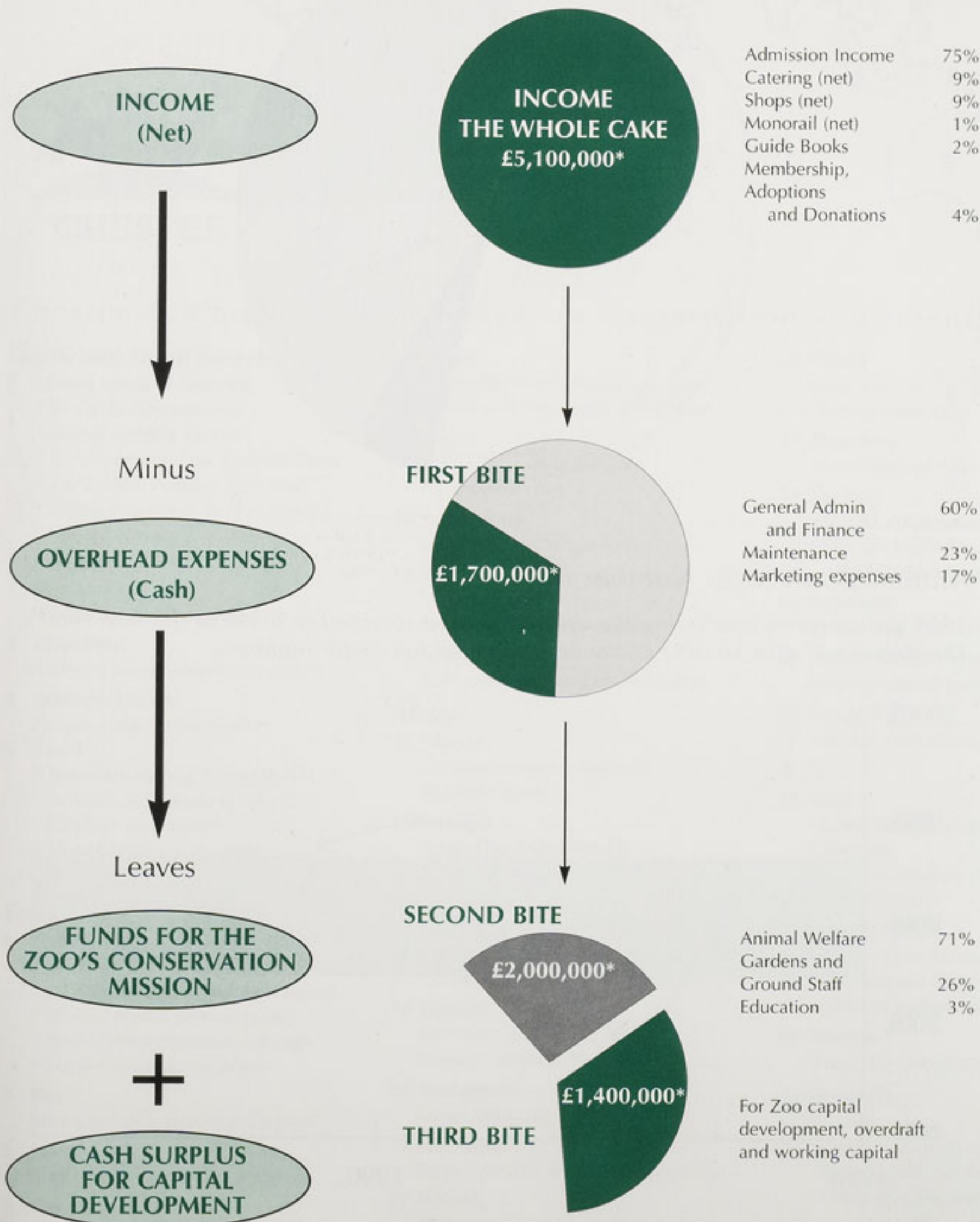
**18. CONTINGENT LIABILITIES**

In 1989, under Section 4 of the Development of Tourism Act 1969, the Society received a grant from the English Tourist Board of £40,000 towards the cost of building the new Chimpanzee House. Under certain circumstances this grant could become repayable, although no liability is expected to arise.

The financial accounts, as presented (pages 40-46), are subject to detailed technical and legal constraints.

This informal presentation is designed to explain more simply our financial situation.

The charts show where our income comes from, and what is available for conservational expenditure and capital developments after deducting overheads.

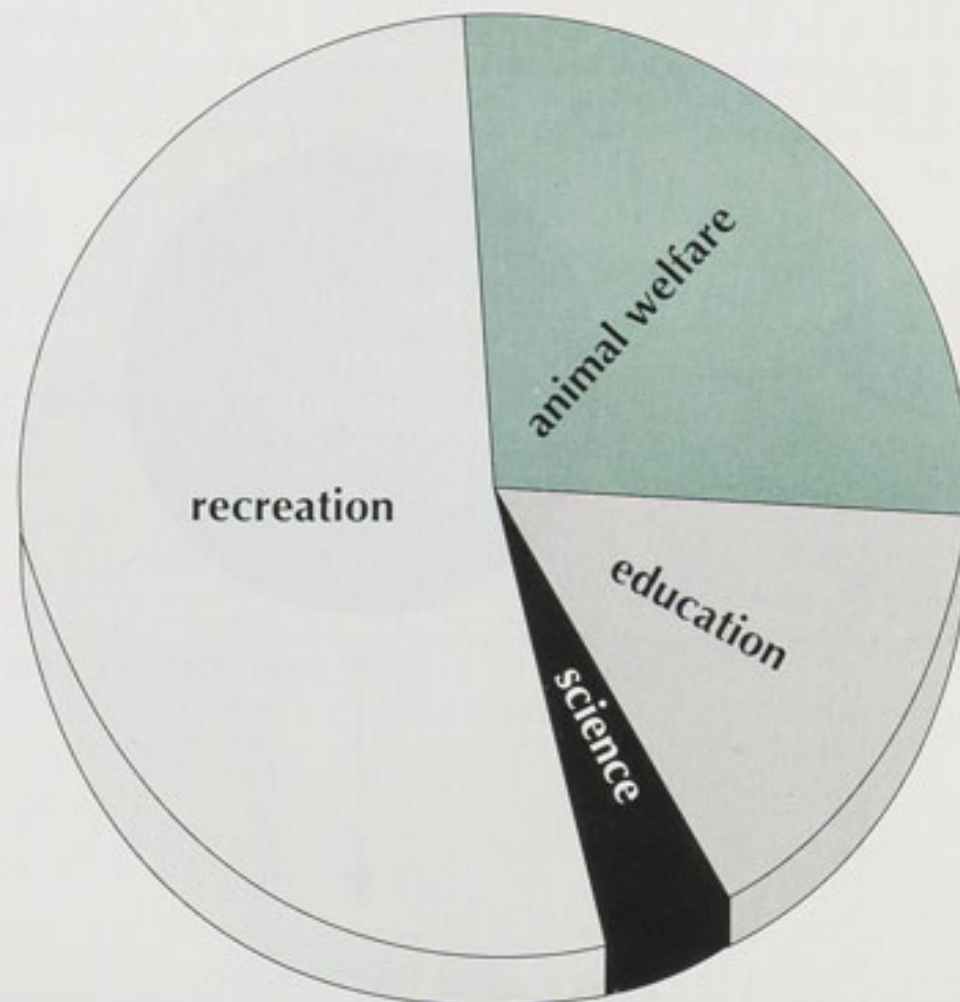


\*For simplicity, figures have been rounded.

### Allocation of Resources to Conservation

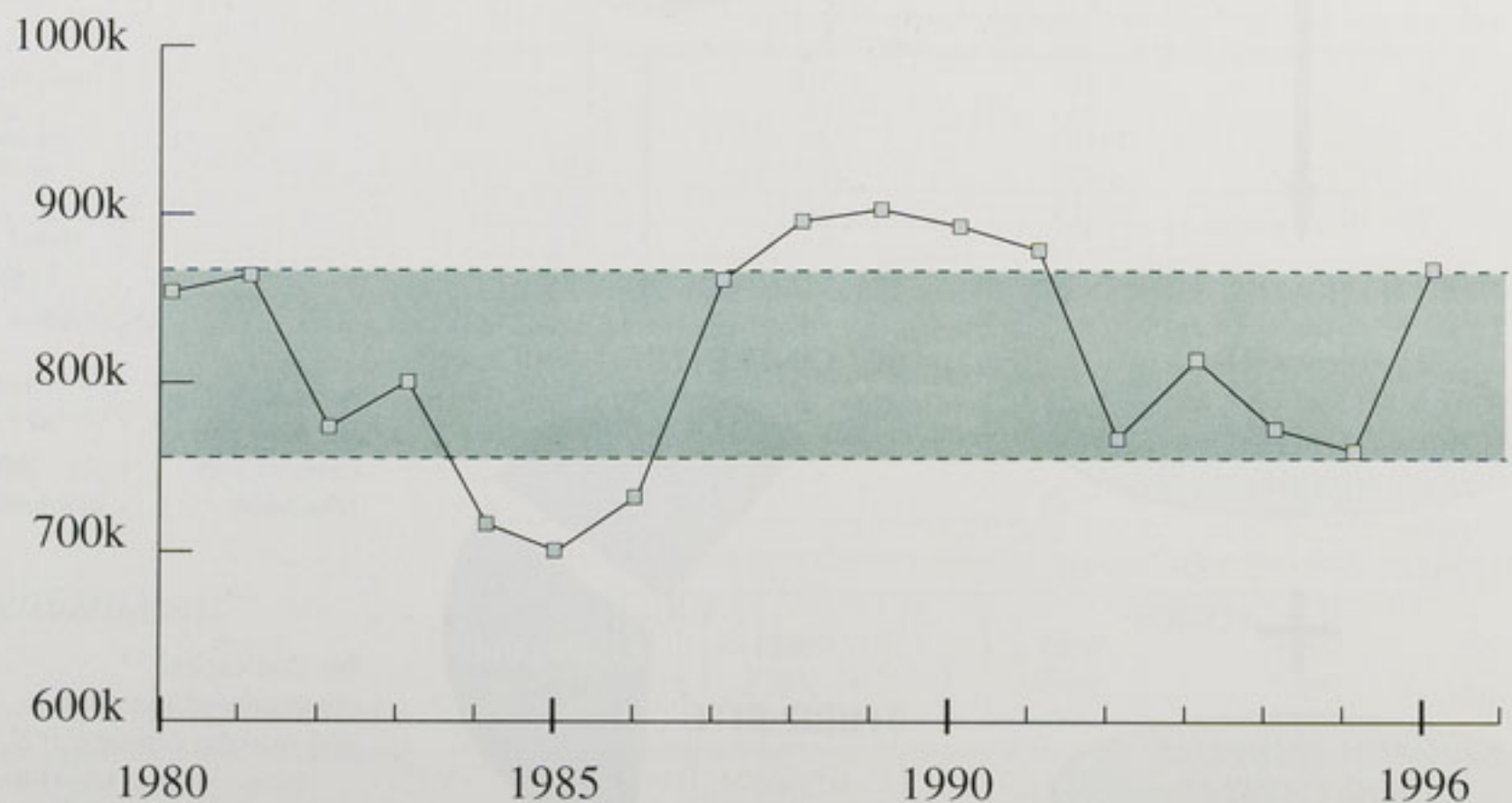
The Zoo's Mission, as given in the Preface (inside front cover - page 2) is 'to promote conservation through **animal welfare, education, recreation and science**'.

The pie chart gives a general indication of the allocation of Zoo monies to those conservational activities.



### Annual Zoo Visitor Number ('000)

1996 Visitor levels (excluding the under 3's) have returned to those of the late 1980's. The 'tramlines' give an idea of the normal range for visitor numbers.





## Chester Zoo's global involvement in conservation and scientific study

### North and South America

- 1 United States of America**  
 \* World Zoo Organisation  
 Annual Meeting, Denver  
 \* Zoo Federation Tour, Southern States  
 \* Shenandoah National Park study  
 (Young Scientist of the Year Award)  
 \* Curatorial visit
- 2 Mexico**  
 Director's visit  
 Wildlife conservation projects
- 3 Chile/Peru**  
 Andean Condor conservation project
- 4 Falklands Islands**  
 Penguin conservation project
- 5 Brazil**  
 \* Veterinary study of Maned Wolves  
 in Brazilian zoos and in the wild  
 (Zoology studentship)  
 \* Herpetologist's visit, venomous  
 snake project

### Europe

- 6 United Kingdom**  
 \* Species Recovery Programmes  
 for Tadpole Shrimp and Sand Lizard  
 \* Harvest Mouse, Dormouse and  
 Barn Owl reintroduction schemes  
 \* Conifer conservation project
- 7 Eire**  
 Work experience student to Chester
- 8 Sweden**  
 Work experience students to Chester
- 9 The Netherlands**  
 \* Work experience students to Chester  
 \* Staff visits

- 10 Russia**  
 \* Breeding loan of Asiatic Lioness  
 \* Work experience student to Chester
- 11 France**  
 \* Breeding loan of Penguins  
 \* Curatorial visits
- 12 Switzerland**  
 Curatorial and keeper visits
- 13 Germany**  
 \* Keeper's tour  
 \* Aquarium Curators meeting
- 14 Spain**  
 Work experience students to Chester

### Africa

- 15 Nigeria**  
 Chimpanzee survey fieldwork  
 (Gashaka Gumti)
- 16 Namibia**  
 Support for British Schools  
 Expedition Society
- 17 Tanzania**  
 \* Endarofita Secondary School Junior  
 Members' support for school projects  
 \* Cichlid fish study - Lake Tanganyika
- 18 Uganda**  
 Veterinary study of Warthogs  
 (Zoology studentship)
- 19 Madagascar**  
 Lemur behaviour fieldwork
- 20 East Africa**  
 Support for Save the Rhino International
- 21 Rwanda**  
 Support for Dian Fossey Gorilla fund

- 22 Ghana**  
 Feeding ecology of Elephants  
 (Zoology studentship)
- 23 Zimbabwe**  
 Spotted Hyaena behavioural study
- 24 Zambia**  
 \* Helmet Shrike behavioural study  
 \* Visit to Chester for discussions on  
 wildlife outreach projects
- 25 Cameroon**  
 African Grey Parrot behavioural study
- 26 Guinea-Congo region**  
 Zoogeographical studies
- 27 Seychelles**  
 Fruit Bat study (Zoology studentship)

### Asia

- 28 India**  
 \* ZOO Outreach support  
 \* Staff visit  
 \* Visit to Chester on British  
 Council course
- 29 The Philippines**  
 \* Spotted Deer Recovery Programme  
 \* Fruit Bat and Water Monitor studies  
 (Zoology studentships)
- 30 Malaysia**  
 Orang utan conservation project

### Australasia

- 31 Australia**  
 \* Keeper visits and exchanges,  
 Taronga Park and Perth Zoos  
 \* Orang utan breeding exchange

NORTH OF ENGLAND ZOOLOGICAL SOCIETY  
CONSERVATIONALLY SENSITIVE SPECIES LIST 1996

## EXPLANATION OF CODES USED

## 1. WORLD CONSERVATION UNION (IUCN) AND BIRDLIFE INTERNATIONAL (ICBP) CODES

**COMMERCIALY THREATENED (CT)** Taxa not currently threatened with extinction, but most or all of whose populations are threatened as a sustainable commercial resource, or will become so, unless their exploitation is regulated. This category applies only to taxa whose populations are assumed to be relatively large. In practice, this category has only been used for fish and aquatic invertebrate species of commercial importance that are being overfished in several parts of their ranges.

**CRITICAL (C)** A taxon is 'Critically Endangered' when it is facing a very high risk of extinction in the wild in the immediate future.

**DECLINING (D)** Population in moderate decline and population more than 10,000 breeding pairs or 40,000 wintering individuals.

**ENDANGERED (E)** Taxa in danger of extinction and whose survival is unlikely if the casual factors continue operating. Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction. Also included are taxa that may be extinct but have definitely been seen in the wild in the past 50 years.

**EXTINCT (Ex)** Species not definitely located in the wild during the past 50 years (criterion as used by the Convention on International Trade in Endangered Species of Wild Fauna and Flora). On a few occasions, the category Ex? has been assigned; this denotes that it is virtually certain that the taxon has recently become extinct.

**INDETERMINATE (I)** Taxa known to be 'Endangered', 'Vulnerable' or 'Rare' but where there is not enough information to say which of the three categories is appropriate.

**INSUFFICIENTLY KNOWN (K)** Taxa that are suspected but not definitely known to belong to any of the above categories, because of lack of information.

**LOCALISED (L)** Population more than 10,000 breeding pairs or 40,000 wintering birds, and neither in moderate nor in large decline, but with more than 90% of the population occurring at 10 or fewer sites (Important Bird Areas) as listed in Grimmett and Jones (1989).

**NEAR THREATENED (NT)** In a 'Low Risk' category and does not qualify for any of the categories 'Critical', 'Endangered', 'Vulnerable', etc., but are close to qualifying for the threatened categories.

**RARE (R)** Taxa with small world populations that are not at present 'Endangered' or 'Vulnerable', but are at risk. These taxa are usually localised within restricted geographical areas or habitats, or are thinly scattered over a more extensive range.

**THREATENED (T)** Threatened is a general term to denote species which are 'Endangered', 'Vulnerable', 'Rare', 'Indeterminate' or 'Insufficiently Known' and should not be confused with the use of the same term by the U.S. Office of Endangered Species. In previous volumes it has been used to identify taxa comprised of several sub-taxa which have differing status categories.

**VULNERABLE (V)** Taxa believed likely to move into the 'Endangered' category in the near future if the casual factors continue operating. Included are taxa of which most or all of the populations are decreasing because of over-exploitation, extensive destruction of habitat or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security has not yet been assured; and taxa with populations that are still abundant but are under threat from severe adverse factors throughout their range. N.B. In practice, 'Endangered' and 'Vulnerable' categories may include, temporarily, taxa whose populations are beginning to recover as a result of remedial action, but whose recovery is insufficient to justify their transfer to another category.

## 2. CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES (CITES) CODES

**APPENDIX I** includes species threatened with extinction and for which trade must be subject to particularly strict regulation and only authorised in exceptional circumstances.

**APPENDIX II** species are not necessarily now threatened with extinction but may become so unless trade is strictly regulated. Appendix II further contains so-called look-alike species, which are controlled because of their similarity in appearance to the other regulated species, thereby facilitating a more effective control.

**APPENDIX III** includes species that are subject to regulation within the jurisdiction of a Party and for which the cooperation of other Parties is needed in order to prevent or restrict their exploitation.

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## ABBREVIATED CODES

Ex = Extinct in wild form	I = Indeterminate	X = bred in indicated period
E = Endangered	K = Insufficiently known	C = Critical (by Birdlife)
V = Vulnerable	K* = Under review	NT = Listed as near threatened by Birdlife
R = Rare	D = Declining	1 = CITES I      3 = CITES III
L = Localised	S = Safe	2 = CITES II      C1 = ANNEX C1
(European status in parenthesis)		N/A = Not applicable

RE-INTRO PROG = Species held at Chester Zoo that are or have been the subject of cooperative re-introduction programmes. (X^ = English Nature Programmes)

\* Not currently in a breeding pair or group. + recent arrivals or not yet of breeding age. \*\*\* This species will be joining the collection in 1997

## MAMMALS

		IUCN	BRED	BRED	CITES	RE-INTRO
		Red List	%	< %	LISTING	PROG
1	Rodriguez Fruit Bat	<i>Pteropus rodriguesi</i>	E	X	X	2
2	Ring-tailed Lemur	<i>Lemur catta</i>	V	X	X	1
3	Black and White Ruffed Lemur	<i>Varecia variegata variegata</i>	E		X	1 X
4	Red Ruffed Lemur	<i>Varecia variegata rubra</i>	E	X	X	1
5	Silvery Marmoset	<i>Callithrix argentata melanura</i>			X	2
6	Cotton Top Tamarin	<i>Saguinus oedipus oedipus</i>	E	X	X	1 X
7	Bully-headed Capuchin	<i>Cebus apella xanthosternus</i>	V	X		1
8	Colombian Black Spider Monkey	<i>Ateles fusciceps robustus</i>	V	X	X	2
9	Lion-tailed Macaque	<i>Macaca silenus</i>	E		X	1
10	Sulawesi Crested Macaque	<i>Macaca nigra</i>	I	X	X	2
11	Mandrill***	<i>Mandrillus sphinx</i>	V	N/A	N/A	1
12	Chimpanzee	<i>Pan troglodytes</i>	V	X	X	1 X
13	Bornean Orang utan	<i>Pongo pygmaeus pygmaeus</i>	E	X	X	1 X
14	Sulawesi Orang utan	<i>Pongo pygmaeus abelii</i>	E		X	1 X
15	Marek Wolf***	<i>Chrysocyon brachyurus</i>	V	N/A	N/A	1
16	Bush Dog	<i>Speothos venaticus</i>	V	X	X	1
17	Oriental Small-clawed Otter	<i>Aonyx cinerea</i>	K		X	2
18	Margay	<i>Felis wiedii</i>	K		X	1
19	Jungle Cat	<i>Felis chaus</i>			X	2
20	Scottish Wild Cat	<i>Felis silvestris</i>			X	2
21	Ocelot	<i>Felis pardalis</i>	V			1
22	Caracal	<i>Felis caracal</i>			X	2
23	European Lynx	<i>Felis lynx</i>			X	2
24	Serval	<i>Felis serval</i>		X	X	2
25	Geoffroy's Cat	<i>Felis geoffroyi</i>			X	2
26	Asiatic Lion	<i>Panthera leo persica</i>	E	X	X	1
27	Amur Tiger	<i>Panthera tigris altaica</i>	E		X	1
28	Persian Leopard	<i>Panthera pardus saxicolor</i>	I		X	1
29	Cheetah	<i>Acinonyx jubatus</i>	V			1 X
30	Asiatic Elephant	<i>Elephas maximus</i>	E		X	1
31	Przewalski's Horse	<i>Equus przewalskii</i>	Ex		X	1 X
32	Persian Onager	<i>Equus hemionus onager</i>	E	X	X	2 X
33	South American Tapir	<i>Tapirus terrestris</i>		X	X	2
34	Black Rhinoceros	<i>Diceros bicornis</i>	E		X	1
35*	Indian Rhinoceros	<i>Rhinoceros unicornis</i>	E			1
36	Guanaco	<i>Lama guanicoe</i>		X	X	2
37	Camelid	<i>Camelid bactrianus</i>	V	X	X	
38	Chilean Pudu	<i>Pudu pudu</i>	K	X	X	1
39	Burmese Brow Antlered Deer	<i>Cervus eldi thumini</i>	V	X	X	1
40	Père David's Deer	<i>Elaphurus davidianus</i>	E		X	
41*	Lowland Anoa	<i>Bubalus depressicornis</i>	E	N/A	N/A	1
42	American Bison	<i>Bison bison</i>			X	
43	Bongo	<i>Tragelaphus eurycerus</i>	V	X	X	3
44	Katse Flats Red Lechwe	<i>Kobus lechwe katensis</i>	V	X	X	2
45	Scimitar-horned Oryx	<i>Oryx dammah</i>	E	X	X	1 X
46	Blackbuck	<i>Antelope cervicapra</i>	V	X	X	3
47	Arabian Gazelle	<i>Gazella gazella arabica</i>	V		X	

## MAMMALS ON LOAN AT OTHER ZOOS

		IUCN	BRED	BRED	CITES	RE-INTRO
		Red List	%	< %	LISTING	PROG
1	Rodriguez Fruit Bat	<i>Pteropus rodriguesi</i>	E			2
2	Ring-tailed Lemur	<i>Lemur catta</i>	V			
3	White Fronted Lemur	<i>Lemur fulvus albifrons</i>	R		X	1
4	Black and White Ruffed Lemur	<i>Varecia variegata variegata</i>	E			1 X
5	Cotton Top Tamarin	<i>Saguinus oedipus</i>	E			1 X
6	Colombian Black Spider Monkey	<i>Ateles fusciceps robustus</i>	V			2
7	Lion-tailed Macaque	<i>Macaca silenus</i>	E			1
8	Sulawesi Crested Macaque	<i>Macaca nigra</i>	I			2
9	Bornean Orang utan	<i>Pongo pygmaeus pygmaeus</i>	E			1 X
10	Eastern Lowland Gorilla	<i>Gorilla gorilla graueri</i>	E			1
11	White-handed Gibbon	<i>Hyllobates lar</i>				1
12	Bush Dog	<i>Speothos venaticus</i>	V			1
13	Margay	<i>Felis wiedii</i>	K			1
14	Geoffroy's Cat	<i>Felis geoffroyi</i>				2
15	Asiatic Lion	<i>Panthera leo persica</i>	E			1
16	Asiatic Elephant	<i>Elephas maximus</i>	E			1
17	Persian Onager	<i>Equus hemionus onager</i>	E			2 X
18	South American Tapir	<i>Tapirus terrestris</i>				2
19	Black Rhinoceros	<i>Diceros bicornis</i>	E			1
20	Southern White Rhinoceros	<i>Ceratotherium simum simum</i>	V			1
21	Guanaco	<i>Lama guanicoe</i>				2
22	Père David's Deer	<i>Elaphurus davidianus</i>	E			
23	Bongo	<i>Tragelaphus eurycerus</i>	V			3
24	Katse Flats Red Lechwe	<i>Kobus lechwe katensis</i>	V			2
25	Scimitar-horned Oryx	<i>Oryx dammah</i>	E			1 X
26	Blackbuck	<i>Antelope cervicapra</i>	V			3
27	Arabian Gazelle	<i>Gazella gazella arabica</i>	V			

\*\*\*This species will be joining the collection in 1997.

## BIRDS

		IUCN	BRED	BRED	CITES	BIRDLIFE	CAMP	RE-INTRO
		Red List	%	< %	LISTING	LISTING	STATUS	PROG
1+	Ostrich	<i>Struthio camelus</i>			X	1		
2	Common Rhea	<i>Rhea americana</i>		X	X	2	NT	
3	Humboldt's Penguin	<i>Spheniscus humboldti</i>	K*	X	X	1	NT	
4	White Stork	<i>Ciconia ciconia</i>			X		(V)	
5+	Black Stork	<i>Ciconia nigra</i>				2(C1)	(R)	
6+	White Pelican	<i>Pelecanus onocrotalus</i>	R	N/A	N/A			
7+	Dalmatian Pelican	<i>Pelecanus crispus</i>	V	N/A	N/A	1	V	
8	Scarlet Ibis	<i>Eudocimus ruber</i>		X	N/A	2		
9+	Eurasian Spoonbill	<i>Platalea leucorhoa</i>		N/A	N/A	2(C1)	(E)	
10	Chilean Flamingo	<i>Phoenicopterus chilensis</i>		X	X	2(C1)		
11	Caribbean Flamingo	<i>Phoenicopterus c. ruber</i>		X	X	2(C1)		
12	Waldraap Ibis	<i>Geronticus eremita</i>	E	X	X	1	C	X
13	Little Egret	<i>Egretta garzetta</i>		X		3	CI	
14	Black-necked Swan	<i>Cygnus melanocoryphus</i>		X	X	2		
15	Black-billed Whistling Duck	<i>Dendrocygna arborea</i>	V	X	X	2	V	
16	Lesser White-fronted Goose	<i>Anser erythropus</i>	R				(VV)	
17	Red-breasted Goose	<i>Branta ruficollis</i>	K	X	X	CI	(VII)	
18	Hawaiian Goose	<i>Branta sandvicensis</i>	V	X	X	1	V	E X
19	Ruddy Shelduck	<i>Tadorna ferruginea</i>		X	N/A		(V)	
20	Baikal Teal	<i>Anas formosa</i>	V		X	2	V	V
21+	South Georgia Pintail	<i>Anas georgica georgica</i>		N/A				V
22	Laysan Teal	<i>Anas laysanensis</i>	R		X	1	V	E
23	Ringed Teal	<i>Anas leucopygia</i>			X			V
24+	Femargous Duck	<i>Anas platyrhynchos</i>			N/A	3	V	
25	Mottled Teal	<i>Mareca angustirostris</i>	V		X		(VI)	V
26+	Meller's Duck	<i>Anas melleri</i>		N/A	N/A		NT	V
27	Garganey	<i>Anas querquedula</i>				3	(V)	
28	Red-crested Pochard	<i>Nettion rufina</i>			X		(ID)	
29	Mandarin Duck	<i>Aix galericulata</i>	K	X	X		NT	
30	Smew	<i>Mergus albellus</i>			X		(V)	
31	White-winged Wood Duck	<i>Cairina scutulata</i>	V		X	1	E	C
32	White-headed Duck	<i>Oxyura leucocephala</i>	V	X	X	2	(VI)	V
33	Andean Condor	<i>Vultur gryphus</i>			X	1		X
34	European Black Vulture	<i>Aegypius monachus</i>	V			2	(NTV)	X
35	Secretary Bird	<i>Sagittarius serpentarius</i>				2		
36	Mauritius Kestrel	<i>Falco punctatus</i>	E		X	1	E	X
37	Red-legged Partridge	<i>Alectoris rubra</i>		X	N/A		V	
38*	Roulet Partridge	<i>Risululus roulei</i>			X	3		V
39+	Blyth's Tragopan	<i>Tragopan blythii</i>	R		N/A	1	V	E
40	Sayr Tragopan	<i>Tragopan sayri</i>		X	X	3	NT	V
41	Temminck's Tragopan	<i>Tragopan temminckii</i>			X		NT	
42	Himalayan Monal	<i>Lophophanes impeyanus</i>			X	1		
43	Brown Eared Pheasant	<i>Crossoptilon manchuricum</i>	E		X	1	V	E
44	White Eared Pheasant	<i>Crossoptilon crossoptilon</i>	V		X	1	V	V
45	Golden Pheasant	<i>Chrysolophus pictus</i>			X		NT	
46*	Lady Amherst's Pheasant	<i>Chrysolophus amherstiae</i>		N/A			NT	
47*	Grey Peacock Pheasant	<i>Polyplectron bicalcaratum</i>		N/A	X	CI		
48	Palawan Peacock Pheasant	<i>Polyplectron empusanum</i>	V		X	1	E	E
49+	Mountain Peacock Pheasant	<i>Polyplectron inopinatum</i>			N/A	3	V	V
50	Edwards' Pheasant	<i>Lophura edwardsi</i>	V	X	X	1	C	C
51+	Malayan Crestless Fireback	<i>Lophura e. erythropteralis</i>				3	V	E
52*	Green Peafowl	<i>Pavo muticus</i>				2	V	E
53	Congo Peafowl	<i>Atrypa congensis</i>	K	X	X		V	?
54*	Ocellated Turkey	<i>Agriocharis ocellata</i>			N/A	3	NT	
55	Red-crowned Crane	<i>Grus japonensis</i>	V	X	X	1	V	E
56	Wattled Crane	<i>Bucconas carunculatus</i>	K			2	V	V
57	Demoiselle Crane	<i>Anthropoides virgo</i>				2		
58+	Stanley (Blue) Crane	<i>Anthropoides paradisea</i>				2	V	C
59	West African Crowned Crane	<i>Balea pavo pavo</i>	X	X	X	2	E	X
60	Gough Island Moorhen	<i>Gallinula nesiotis</i>	R		X		V	
61*	Little Black Bustard	<i>Eupodis ana</i>			X	2		
62*	Avocet	<i>Recurvirostra avosetta</i>				2	(I)	
63+	Stone Curlew	<i>Burhinus oedipus</i>					(V)	
64	Pink Pigeon	<i>Columba nayeri</i>	E	X	X	1	C	C X
65	Nicar Pigeon	<i>Columba nicaragua</i>	R	X	X	1	NT	
66	Mountain Witch Dove	<i>Geopelia striata</i>			X		NT	
67	Luzon Bleeding-heart Pigeon	<i>Gallinula luzonica</i>		X	X	2	NT	V
68	Blue Crowned Pigeon	<i>Goura cristata</i>	R	X	X	CI	V	E
69*	Mount Apo Lorikeet	<i>Troglodytes johnstoniae</i>		N/A	N/A	2	V	
70	Black-winged Lory	<i>Eos cyanogenia</i>	R			2	V	E
71	Blue-streaked Lory	<i>Eos reticulata</i>	R			2	NT	(VI)
72	Dayembo's Lory	<i>Chalcopsitta dayembodii</i>				2		
73*	Yellow-backed Chattering Lory	<i>Lorius gamulus flavipallatus</i>			X	2	V	E
74	Stella's Lorikeet	<i>Chamosina papua</i>		X	X	2		
75	Muscibrook's Lorikeet	<i>Neopsittacus muscibrooki</i>			X	2		
76	Palm Cockatoo	<i>Probosciger aterrimus</i>				1	NT	(SV)
77	White-tailed Black Cockatoo	<i>Calyptrorhynchus latirostris</i>		N/A	N/A	2	V	
78	Blue-eyed Cockatoo	<i>Cacatua ophthalmica</i>		X	X	2		(S)

# 1996 CONSERVATIONALLY SENSITIVE SPECIES

North of England Zoological Society

		IUCN	BRED	BRED	CITES	BIRDLIFE	CAMP	RE-INTRO
		Red List	%	< 96	LISTING	LISTING	STATUS	PROG
79+	Red-vented Cockatoo	<i>Cacatua haematurus</i>	E	N/A	N/A	1	C	C
80	Kea	<i>Nestor notabilis</i>			X	2	NT	V
81	Vosmaer's Eclectus Parrot	<i>Eclectus roosei vosmaeri</i>		X	X	2		VS
82	Greater Vasa Parrot	<i>Coracopsis vasa</i>		X	X	2		VS
83	Splendid Parakeet	<i>Neophema splendida</i>	R		X	2	V	S*
84	Derbyan Parakeet	<i>Ptilinopus derbyana</i>		X	X	2	NT	V
85+	Hyacinth Macaw	<i>Anodorhynchus hyacinthinus</i>	VR			1	V	E
86	Blue & Yellow Macaw	<i>Ara aratus</i>		X	X	2		
87+	Blue-throated Macaw	<i>Ara glaucogularis</i>	E	N/A	N/A	1	E	V
88	Scarlet Macaw	<i>Ara macaw</i>				1		
89	Red-fronted Macaw	<i>Ara rubrogenys</i>	V	X	X	1	E	V
90	Yellow-rumped Macaw	<i>Ara auricollis</i>		X	X	2		
91	Blue-winged Macaw	<i>Ara macana</i>		X		1	V	V
92	Red-masked Conure	<i>Arainga erythrogastra</i>			X	2		VS
93	Golden-capped Conure	<i>Arainga auricapilla</i>	V			2	NT	V
94	Golden Conure	<i>Guaruba guarouba</i>	V		X	1	E	V
95	Thick-billed Parrot	<i>Rhynchopsitta pachyrhynchos</i>	V	X	X	1	E	VE
96	Princess of Wales Parakeet	<i>Ptilinopus alexandrae</i>				2	V	VS
97	Blue-throated Conure	<i>Pyrrhura cruentata</i>	R	X	X	1	V	V
98	Slender-billed Parakeet	<i>Encicognathus leptorhynchus</i>		X	X	2	NT	VS
99	Yellow-faced Parrotlet	<i>Fringilla xanthops</i>	V		X	2	V	V
100	Lilacine Amazon	<i>Amazona autumnalis lilacina</i>		X	X	2		E
101	Cuban Amazon	<i>Amazona leucoccephala</i>		X	X	1	NT	VS
102	Green-cheeked Amazon	<i>Amazona viridigenalis</i>	V	X	X	2	E	E
103+	Red-tailed Amazon	<i>Amazona brasiliensis</i>	E	N/A	N/A	1	E	
104	Schalow's Turaco	<i>Turaco schalowi</i>		X	X	2		
105	Barn Owl	<i>Tyto alba</i>		X	X	2	(D)	X*
106	White-faced Scops Owl	<i>Otus leucotis</i>		X	X	2		
107	Milky Eagle Owl	<i>Bubo lacteus</i>				2		
108*	Vermiculated Fishing Owl	<i>Scotopelia bouvieri</i>		N/A	N/A	2		
109	Femineous Pygmy Owl	<i>Glucidium brasilianum</i>				2		
110*	Great Grey Owl	<i>Syrinx nebulosa</i>		N/A	N/A	2		
111	Spectacled Owl	<i>Pulsatrix perspicillata</i>		X	X	2		
112	Snowy Owl	<i>Nyctea scandiaca</i>		X	X	2	(V)	
113	Great Indian Hornbill	<i>Buceros bicornis</i>	E		X	CI		E
114+	Rhinoceros Hornbill	<i>Buceros rhinoceros</i>	V			2		CS
115	Wrinkled Hornbill	<i>Aceros cornutus</i>	R	X	X	2	V	V
116	Gouldian Finch	<i>Chloebia gouldiae</i>	K	X	X		E	
117	Java Sparrow	<i>Padda oryzivora</i>		X	X		V	
118	Yellow-throated Laughing Thrush	<i>Garrulus galbanus</i>		X	X		NT	
119	Red-tailed Laughing Thrush	<i>Garrulus milnei</i>			X		NT	
120	Red-winged Laughing Thrush	<i>Garrulus bimaculatus</i>			N/A		NT	
121	Omei Shan Loricula***	<i>Loricula omeiensis</i>					V	
122	Bali Starling	<i>Leucopsar rothschildi</i>	E	X	X	1	C	X
123	Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>			X		(V)	X

## REPTILES

		IUCN	BRED	BRED	CITES	OTHER RE-INTRO
		Red List	%	< 96	LISTING	LISTINGS PROG
1	Hermann's Tortoise	<i>Testudo hermanni</i>	V			2
2	Greek Tortoise	<i>Testudo graeca</i>	V			2
3*	Aldabra Giant Tortoise	<i>Geochelone gigantea</i>	R			2
4+	Hornfield's Tortoise	<i>Testudo horsfieldi</i>				2
5	Red-footed Tortoise	<i>Geochelone carbonaria</i>				2
6	Mississippi Alligator	<i>Alligator mississippiensis</i>				2
7+	West African Dwarf Crocodile	<i>Osteolepis t. tetragis</i>				1
8+	Tuatara	<i>Sphenodon punctatus</i>	R			1
9	Ornate Day Gecko	<i>Phelsuma ornata</i>				2
10	Sand Lizard	<i>Lacerta agilis</i>		N/A	N/A	
11	Common Iguana	<i>Iguana iguana</i>			X	2
12	Rhinoceros Iguana	<i>Cyclura cornuta</i>	I		X	1
13	Philippine Sail-fin Lizard	<i>Hydrosaurus pustulatus</i>	V	X	X	
14	Prehensile-tailed Skink	<i>Coracia zebra</i>		X	X	2
15	Black & White Tegu	<i>Tupambatis teguion</i>				2
16	Salvator Monitor	<i>Varanus salvator</i>				2
17	Royal Python	<i>Python regius</i>		X		2
18	Green Tree Python	<i>Chondropython viridis</i>				2
19	Cuban Boa	<i>Epicrates angulifer</i>	I		X	2
20	Brazilian Rainbow Boa	<i>Epicrates cenchria cenchria</i>		X		2
21	Jamaican Boa	<i>Epicrates subflavus</i>	V	X		1
22*	Rubber Boa	<i>Charina bottae</i>	R			
23	Madagascan Tree Boa	<i>Sanzinia madagascariensis</i>	K		X	2
24	Boa Constrictor	<i>Constrictor constrictor</i>				2
25	Green Anaconda	<i>Eunectes murinus</i>				2
26	Indian Cobra	<i>Naja kaouthia</i>		X	X	1
27	Pacific Boa	<i>Candoia carinata</i>				2
28+	Aruba Island Rattlesnake	<i>Crotalus unicolor</i>	R			

## AMPHIBIANS

		IUCN	BRED	BRED	CITES	OTHER RE-INTRO
		Red List	%	< 96	LISTING	LISTINGS PROG
1	Axolotl	<i>Ambystoma mexicanum</i>	R	X	X	2
2	Black & Gold Poison Arrow Frog	<i>Epididymates truncatus</i>		X	X	2
3+	Black & Green Poison Arrow Frog	<i>Dendrobates auratus</i>				2
4+	Yellow Striped Poison Arrow Frog	<i>Dendrobates leucomelas</i>				2
5+	Golddacean Poison Arrow Frog	<i>Phyllobates vittatus</i>				2

## FISHES

		IUCN	BRED	BRED	CITES	OTHER RE-INTRO
		Red List	%	< 96	LISTING	LISTINGS PROG
1	Cumming's Barb	<i>Puntius cumingi</i>	V		X	
2	Black Ruby Barb	<i>Puntius nigrofasciatus</i>	V	X	X	
3	Cherry Barb	<i>Capoeta tityra</i>	V		X	
4	Silver Shark	<i>Balantiocheilus melanopterus</i>	I			
5	Omani Blind Cave Fish	<i>Gambusia holbrooki</i>	R		X	
6	Pla Eesok	<i>Probarbus jullieni</i>	K			1
7	Red Rainbowfish	<i>Glossogobius aureus</i>	R	X	X	
8	Boeseman's Rainbow Fish	<i>Melanotaenia boesemani</i>	V	X	X	
9	Lake Tebera Rainbow Fish	<i>Melanotaenia herbetszeldradi</i>	R	X	X	
10	Lake Kutubu Rainbow Fish	<i>Melanotaenia lacustris</i>	V	X	X	
11	Dwarf Rainbow Fish	<i>Melanotaenia praecox</i>	R	X		
12	Lake Victoria Cichlid	<i>Haplochromis argus</i>	Ex	X	X	
13	Lake Victoria Cichlid	<i>Astatotilapia alaudalis</i>	E	X	X	
14	Lake Victoria Cichlid	<i>Haplochromis nyererei</i>	E		X	
15	Lake Victoria Cichlid	<i>Haplochromis pygmaeops</i>	Ex	X	X	
16	Lake Victoria Cichlid	<i>Haplochromis rufocaudatus</i>	E	X	X	
17	Lake Victoria Cichlid	<i>Haplochromis sauriei</i>	E	X	X	
18	Lake Victoria Cichlid	<i>Haplochromis 'velvet Black'</i>	E	X	X	
19	Lake Victoria Cichlid	<i>Haplochromis xenognathus</i>	E	X	X	
20	Obikoto Tilapia	<i>Tilapia guineana</i>	E	X	X	
21	Asian Arowana	<i>Scleropages formosus</i>	K			1
22	Killie Fish	<i>Nothobranchius kribiaensis</i>	X			X
23	Novy Be Killie Fish	<i>Pachypanchax homalonotus</i>	K	X	N/A	
24	Killie Fish	<i>Pachypanchax sakarami</i>	K	X	N/A	
25	Butterfly Goodeid	<i>Ameiops splendens</i>	E	X	N/A	
26	Bold Characodon	<i>Characodon austin</i>	V	X	N/A	
27	Mexicopique	<i>Grandinichthys viviparus</i>	E	X	N/A	
28	Solo Goodie	<i>Xenopomus captivus</i>	E	X	N/A	
29	Crescent Zoe	<i>Zoogoneticus sp.</i>		X	N/A	
30	Sword Tail	<i>Xiphophorus clemenciae</i>	R	X	N/A	
31	Monterey Fluty	<i>Xiphophorus couchianus</i>		X	N/A	

## INVERTEBRATES

		IUCN	BRED	BRED	CITES	OTHER RE-INTRO
		Red List	%	< 96	LISTING	LISTINGS PROG
1	Portula Snail	<i>Portula terrastrata</i>	Ex	X	X	X
2	Portula Snail	<i>Portula tobiasi</i>	Ex	X	X	X
3	Portula Snail	<i>Portula varia</i>	Ex	X	X	X
4	Mexican Red-knee Tarantula	<i>Euzoosoma smithi</i>	K	X	X	2
5	Macleay's Spectre	<i>Estatosoma naratum</i>		X	X	(Z)b
6+	Star Coral	<i>Favia sp.</i>				2
7+	Star Coral	<i>Favites sp.</i>				2
8	Southern Giant Clam	<i>Tridacna derasa</i>	V			
9+	Bouquet Coral	<i>Euphyllia glaberrima</i>				2
10+	Frog Spawn Coral	<i>Euphyllia divisa</i>				2
11+	Coral	<i>Euphyllia picteti</i>				2
12	Tadpole Shrimp	<i>Triops cancriformis</i>	X	N/A		X*

## SUMMARY

### NUMBERS OF CONSERVATIONALLY SENSITIVE SPECIES IN EACH MAIN CATEGORY

	IUCN Red List	Other Categories	Total	Ex	E	V	R	I	K	K*	CITES I	CITES II	Birdlife
MAMMALS	37	10	47	6	36						63	98	
BIRDS	47	76	123		46								86
REPTILES	11	17	28		22								
AMPHIBIANS	1	4	5		6								
FISHES	29	2	31		13								
INVERTEBRATES	5	7	12		1								
<b>TOTALS</b>	<b>130</b>	<b>116</b>	<b>246</b>										

\*\*\*This species will be joining the collection in 1997.

NORTH OF ENGLAND ZOOLOGICAL SOCIETY  
ANIMAL STOCKLIST 1996

## TEXT LISTINGS

The animals are listed in seven columns, which is the world wide standard for major zoological collections.

**Column 1.**

This is the stock at the beginning of the year - and normally agrees with the closing stock of the 1995 report. However, re-sexing, and the detection of hitherto undetected errors have resulted in some minor adjustments.

**Column 2.**

This is the stock that has come to the collection from outside sources.

**Column 3.**

This is the addition to our stocks through breeding.

**Column 4.**

This is the stock bred in the Zoo which failed to survive more than 30 days. Although columns 3 and 4 are the appropriate places for recording the breeding performance of many species, they are inappropriate for those which produce large numbers of very small or microscopic young, most of which are unlikely to survive, until they are of countable size. For these species, column 4 is ignored, and only surviving countable young are shown in column 3.

**Column 5.**

These are animals which died or were humanely destroyed for reasons of ill health whilst in the collection.

**Column 6.**

This is for animals which were removed from the collection other than for reasons of ill health.

**Column 7.**

This is the closing stock as at 31st December 1996.

Within each column, known male animals are listed under the heading 'M', female animals under 'F' and as yet un-sexed animals or young stock are shown under the heading 'Y?'

SUMMARY  
LIVESTOCK TOTALS AS AT 31 DECEMBER 1996

	Number of Species	(End 95)	Number of Specimens	(End 95)	Species Bred & Reared	(End 95)	Specimens Bred & Reared	(End 95)
Mammals	73	(76)	618	(670)	32	(30)	144	(122)
Birds	210	(206)	952	(954)	76	(73)	293	(261)
Reptiles	50	(44)	362	(270)	6	(8)	146	(155)
Amphibians	18	(17)	114	(129)	4	(2)	135	(31)
Fishes	136	(134)	2833	(3158)	44	(38)	*	*
Invertebrates	40	(39)	622	(460)	18	(18)	*	*
<b>Totals</b>	<b>527</b>	<b>(516)</b>	<b>5501</b>	<b>(5639)</b>	<b>180</b>	<b>(169)</b>	<b>718</b>	<b>(569)</b>

\* Not included

MAMMALS STOCKLIST

	STOCK			RECEIVED			BORN/HCH			D.N.S.			DEATHS			DISPOSALS			STOCK		
	M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T	M	F	Y/T
<b>MONOTREMATA</b>																					
Short-nosed Echidna	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
<b>MAKSIPIALIA</b>																					
Tamar Wallaby	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Red-necked Wallaby	6	9	0	0	0	0	3	2	0	0	0	0	0	0	0	1	0	0	8	11	0
Western Grey Kangaroo	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0
<b>CHIROPTERA</b>																					
Rodrigues Fruit Bat	30	19	3	0	0	0	6	4	3	0	0	0	4	3	6	15	10	0	17	10	0
Sebas Short-tailed Bat	4	5	21	0	0	0	0	0	13	0	0	0	1	0	3	0	0	0	3	5	31
<b>PRIMATES</b>																					
Slow Loris	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
Ring-tailed Lemur	10	11	0	0	0	0	4	2	0	0	0	0	0	0	0	3	1	0	11	12	0
Black and White Ruffed Lemur	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3	0
Red Ruffed Lemur	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	2	0
Pygmy Marmoset	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0
Silvery Marmoset	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
Cotton Top Tamarin	3	1	0	1	1	0	0	2	0	0	1	0	1	0	0	0	0	0	3	3	0
White-lipped Tamarin	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0
Buffy-headed Capuchin	0	0	0	2	2	0	0	1	1	0	1	0	0	0	0	0	0	0	2	2	1
Columbian Black Spider Monkey	3	6	0	0	0	0	1	0	0	0	0	0	0	0	0	2	1	0	2	5	0
Lion-tailed Macaque	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Sulawesi Crested Macaque	4	9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	10	0
De Brazza Monkey	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
Talapoan Monkey	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0
Chimpanzee	5	21	0	0	0	0	0	3	0	0	1	0	0	1	0	0	0	0	5	22	0
Bornean Orang utan	3	7	0	0	0	0	1	1	0	0	0	0	0	0	0	1	3	0	3	5	0
Sumatran Orang utan	1	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2	0
<b>RODENTIA</b>																					
Praine Marmot	0	0	70	←	0	0	35	ESTIMATE	0	0	35	→	0	0	70	0	0	0	0	0	70
African Crested Porcupine	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Capybara	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0
Coyu	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0
Mountain Vicacha	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
<b>CARNIVORA</b>																					
Zonla	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Bush Dog	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0
Coati	1	16	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	1	8	0
Kinkajou	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Oriental Small-clawed Otter	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Dwarf Mongoose	6	1	0	0	0	0	0	0	3	0	0	3	1	0	0	0	0	0	5	1	0
Meerkat	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Margay	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
Jungle Cat	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Scottish Wild Cat	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Black Footed Cat	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Ocelot	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
Carcal	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
European Lynx	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	1	0
Serval	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Serval	2	1	0	0	0	0	1	0	3	1	0	3	0	0	0	0	0	0	2	1	0
Geoffroy's Cat	1	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0
Asiatic Lion	3	2	0	1	0	0	3	0	0	0	0	0	0	0	0	3	1	0	4	1	0
Amur Tiger	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
Persian Leopard	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Cheetah	1	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	0
Common Genet	3	2	0	0	0	0	2	1	0	0	0	0	0	1	0	2	0	0	3	2	0
<b>PINNIPEDIA</b>																					
Californian Sealion	2	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	3	0
<b>PROBOSCIDEA</b>																					
Asiatic Elephant	2	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	2	8	0
<b>PERISSODACTYLA</b>																					
Przewalski's Horse	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
Common Zebra	1	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5	0
Persian Onager	1	6	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	2	7	0
South American Tapir	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	1	0
Black Rhinoceros	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	0
Indian Rhinoceros	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
<b>ARTIODACTYLA</b>																					
Collared Peccary	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Guanaco	2	8	0	0	0	0	3	1	0	0	0	0	0	1	0	0	0	0	5	8	0
Bactrian Camel	1	2	0	0	0	0	2	0	0	1	0	0	0	0	0	1	0	0	1	2	0
Chilean Pudu	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	0
Axis Deer	8	13	0	0	0	0	0	5	0	0	0	0	2	1	0	2	6	0	4	11	0
Burmese Brow Antlered Deer	2	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	2	3	0
Père David's Deer	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	0
Reindeer	6	13	0	0	0	0	6	3	1	3	1	1	0	3	0	4	1	0	5	11	0
Goraffe	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	4	0
Nilgai	5	13	0	0	0	0	3	3	0	1	1	0	4	2	0	1	2	0	2	11	0
Lowland Anoa	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Congo Buffalo	2	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	5	0
American Bison	4	9	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	8	0
Bongo	1	3	0	0</																	

## BIRDS STOCKLIST

		STOCK 31/12/1995 MFY/?	RECEIVED MFY/?	BORN/HCH MFY/?	DNS 30 DAYS MFY/?	DEATHS OTHERS MFY/?	DISPOSALS MFY/?	STOCK 31/12/96 MFY/?
<b>STRUTHIONIFORMES</b>								
Ostrich	<i>Struthio camelus masaiicus</i>	1 2 0	1 1 0	0 0 0	0 0 0	1 1 0	0 0 0	1 2 0
<b>RHEIFORMES</b>								
Common Rhea	<i>Rhea americana</i>	1 3 2	0 0 0	0 0 3	0 0 1	0 0 2	0 0 0	1 3 2
<b>CASUARIFORMES</b>								
Emu	<i>Dromaius novaehollandiae</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
<b>SPHENISCIFORMES</b>								
Humboldt's Penguin	<i>Spheniscus humboldti</i>	8 13 33	0 0 0	7 2 30	0 0 12	0 1 0	0 0 32	15 14 19
<b>PELECANIFORMES</b>								
White Pelican	<i>Pelecanus onocrotalus</i>	5 1 0	0 2 0	0 0 0	0 0 0	0 1 0	2 0 0	3 2 0
Dalmatian Pelican	<i>Pelecanus crispus</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
<b>CICONIFORMES</b>								
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 0	0 0 0	0 0 0	0 0 0	2 2 0
Black Stork	<i>Ciconia nigra</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Waldraap Ibis	<i>Geronticus eremita</i>	9 8 16	0 0 0	0 0 20	0 0 5	0 1 0	0 0 20	9 7 11
Scarlet Ibis	<i>Eudocimus ruber</i>	2 2 0	0 0 0	0 0 1	0 0 1	1 0 0	0 0 0	1 2 0
Eurasian Spoonbill	<i>Platalea leucoroda</i>	5 3 0	0 0 0	0 0 0	0 0 0	2 0 0	0 0 0	3 3 0
Chilean Flamingo	<i>Phoenicopterus chilensis</i>	12 11 16	0 0 0	0 0 5	0 0 1	0 0 0	0 0 0	12 11 20
Caribbean Flamingo	<i>Phoenicopterus ruber ruber</i>	16 12 25	0 0 0	0 0 7	0 0 0	1 0 4	0 0 0	15 12 28
Caribbean x Chilean Flamingo	<i>P. ruber x P. chilensis</i>	0 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 1 0
<b>ANSERIFORMES</b>								
Fulvous Tree Duck	<i>Dendrocygna bicolor</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 1 0	0 0 0	1 0 0
Black-billed Whistling Duck	<i>Dendrocygna arborea</i>	3 3 6	0 0 0	0 0 9	0 0 1	0 0 2	0 0 6	3 3 6
White-faced Whistling Duck	<i>Dendrocygna viduata</i>	1 2 0	1 0 0	0 0 0	0 0 0	1 1 0	0 0 0	1 1 0
Black-necked Swan	<i>Cygnus melanocephalus</i>	2 2 0	0 0 0	0 1 7	0 0 1	1 0 6	0 0 0	1 3 0
Emperor Goose	<i>Anser canagicus</i>	1 2 0	0 0 0	0 0 4	0 0 2	0 0 1	0 0 0	1 2 1
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>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Red-breasted Goose	<i>Branta ruficollis</i>	6 6 0	0 0 0	0 0 7	0 0 4	0 0 0	0 0 0	6 6 3
Hawaiian Goose	<i>Branta sandvicensis</i>	2 2 0	0 0 0	1 4 0	0 0 0	0 1 0	2 4 0	1 1 0
Common Shelduck	<i>Tadorna tadoma</i>	2 4 0	0 0 0	0 0 2	0 0 2	0 0 0	0 0 0	2 4 0
Ruddy Shelduck	<i>Tadorna ferruginea</i>	1 1 0	0 0 0	0 2 0	0 0 0	0 0 0	0 0 0	1 3 0
Baikal Teal	<i>Anas formosa</i>	1 2 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	0 2 0
Falcated Teal	<i>Anas falcata</i>	5 4 0	0 0 0	0 0 0	0 0 0	1 2 0	0 0 0	4 2 0
Northern Shoveler	<i>Anas cypeata</i>	1 2 0	0 0 0	0 0 0	0 0 0	1 0 0	0 0 0	0 2 0
Chilean Pintail	<i>Anas georgica spinicauda</i>	0 0 0	0 0 3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 3
South Georgia Pintail	<i>Anas georgica georgica</i>	0 0 0	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Red Shoveler	<i>Anas platylea</i>	0 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 1 0
Laysan Teal	<i>Anas laysanensis</i>	3 2 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	3 2 0
Garganey	<i>Anas querquedula</i>	2 2 0	0 0 0	0 0 0	0 0 0	1 1 0	0 0 0	1 1 0
Chiloe Wigeon	<i>Anas sibilatrix</i>	2 2 0	0 0 0	0 2 6	0 0 0	0 1 1	0 0 5	2 3 0
Ringed Teal	<i>Callonetta leucophrys</i>	2 2 0	1 0 0	1 3 3	0 0 2	1 1 1	1 3 0	2 1 0
Marbled Teal	<i>Marmaronetta angustirostris</i>	3 4 0	0 0 0	0 0 2	0 0 2	1 2 0	0 0 0	2 2 0
Mellors Duck	<i>Anas Melleri</i>	0 0 0	2 3 0	0 0 0	0 0 0	0 0 0	1 2 0	1 1 0
Common Eider	<i>Somateria mollissima</i>	2 2 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	2 2 0
Ferruginous Duck	<i>Aythya nyroca</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Tufted Duck	<i>Aythya fuligula</i>	5 3 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	5 3 0
Rosy-billed Pochard	<i>Netta peposaca</i>	1 2 0	1 1 0	1 0 1	0 0 0	0 1 1	0 0 0	3 2 0
Red-crested Pochard	<i>Netta rufina</i>	3 3 0	0 0 0	0 0 0	0 0 0	1 0 0	0 0 0	2 3 0
Mandarin Duck	<i>Aix galericulata</i>	3 3 0	0 0 0	10 10 17	0 0 5	0 1 0	0 0 12	13 12 0
Carolina Duck	<i>Aix sponsa</i>	4 2 0	0 0 0	0 1 2	0 0 2	0 2 0	0 0 0	4 1 0
White-winged Wood Duck	<i>Cairina scutulata</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Smew	<i>Mergus albellus</i>	3 3 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	3 3 0
Hooded Merganser	<i>Mergus cucullatus</i>	3 2 0	0 1 0	0 0 0	0 0 0	0 3 0	0 0 0	3 0 0
Ruddy Duck	<i>Oxyura jamaicensis</i>	2 2 0	0 0 0	0 0 15	0 0 11	0 0 1	0 0 0	2 2 3
White-headed Duck	<i>Oxyura leucocephala</i>	4 3 0	0 0 0	0 0 2	0 0 2	0 1 0	0 0 0	4 2 0
Bufflehead	<i>Bucephalus albeola</i>	2 2 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	2 2 0
<b>FALCONIFORMES</b>								
Mauritius Kestrel	<i>Falco punctatus</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
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
European Black Vulture	<i>Aegypius monachus</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Secretary Bird	<i>Sagittarius serpentarius</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
<b>GALLIFORMES</b>								
Grey-headed Chachalaca	<i>Ortalis cinereiceps</i>	1 3 1	0 0 0	0 0 1	0 0 1	0 0 1	0 0 0	1 3 0
Variable Chachalaca	<i>Ortalis motmot</i>	1 0 1	0 0 0	0 0 0	0 0 0	0 0 0	1 0 1	0 0 0
Bare-faced Curassow	<i>Crax fasciolata</i>	1 2 0	0 0 0	1 0 0	0 0 0	0 0 0	0 1 0	2 1 0
Chinese Painted Quail	<i>Excalfactoria chinensis</i>	1 1 0	1 0 0	0 0 0	0 0 0	1 0 0	0 0 0	1 1 0
Californian Quail	<i>Lophortyx californica</i>	1 3 0	0 0 0	0 0 0	0 0 0	1 3 0	0 0 0	0 0 0
Red-legged Partridge	<i>Alectoris rufa</i>	0 0 6	3 3 0	0 0 1	0 0 0	2 2 6	0 0 0	1 1 1
Rourol Partridge	<i>Rollulus rourol</i>	0 1 0	1 1 0	0 0 2	0 0 2	0 0 0	0 0 0	1 2 0
Blyth's Tragopan	<i>Tragopan blythii</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Satyre Tragopan	<i>Tragopan satyra</i>	4 3 0	1 0 0	3 2 3	0 0 0	0 0 3	3 1 0	5 4 0
Temminck's Tragopan	<i>Tragopan temminckii</i>	2 2 0	0 0 0	0 0 0	0 0 0	1 1 0	0 0 0	1 1 0
Himalayan Monal	<i>Lophophorus impeyanus</i>	2 3 0	0 0 0	0 0 0	0 0 0	0 0 0	1 2 0	1 1 0
Brown Eared Pheasant	<i>Crossoptilon manchuricum</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
White Eared Pheasant	<i>Crossoptilon crossoptilon</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0	0 0 0
Golden Pheasant	<i>Chrysolophus pictus</i>	1 3 0	1 0 0	2 5 2	0 0 2	1 3 0	2 2 0	1 3 0
Lady Amherst's Pheasant	<i>Chrysolophus amherstiae</i>	0 0 0	1 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0
Grey Peacock-Pheasant	<i>Polyplectron bicalcaratum</i>	0 1 0	1 1 0	0 0 0	0 0 0	0 0 0	0 1 0	1 1 0
Palawan Peacock Pheasant	<i>Polyplectron emphanum</i>	3 2 0	1 1 0	0 0 2	0 0 2	0 1 0	1 0 0	3 2 0
Mountain Peacock Pheasant	<i>Polyplectron inopinatum</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Edwards' Pheasant	<i>Lophura edwardsi</i>	3 5 0	0 0 0	0 1 0	0 0 0	0 1 0	1 2 0	2 3 0
Malayan Crestless Fireback	<i>Lophura e. erythrophthalma</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Common Peafowl	<i>Pavo cristatus</i>	4 3 0	0 0 0	2 1 1	0 0 0	0 1 1	0 0 0	6 3 0
Green Peafowl	<i>Pavo muticus</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Congo Peafowl	<i>Atropavo congensis</i>	4 3 0	0 0 0	1 0 8	0 0 6	1 0 0	0 0 0	4 3 2
Ocellated Turkey	<i>Agrochans ocellata</i>	0 2 0	1 0 0	0 0 0	0 0 0	0 2 0	0 0 0	1 0 0
<b>GRUIFORMES</b>								
Red-crowned Crane	<i>Grus japonensis</i>	2 3 0	0 0 0	0 2 0	0 0 0	0 0 0	0 1 0	2 4 0
White-naped Crane	<i>Grus vipio</i>	0 0 0	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Wattled Crane	<i>Bucconis carunculatus</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Demoiselle Crane	<i>Anthropoides virgo</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Blue Crane	<i>Anthropoides paradisea</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
West African Crowned Crane	<i>Balearia pavonina pavonina</i>	1 2 0	0 0 0	0 0 3	0 0 1	0 2 0	0 0 0	1 0 2
Gough Island Moorhen	<i>Gallinula comeri</i>	1 1 0	0 1 0	0 0 0	0 0 0	0 1 0	0 0 0	1 1 0
Sun Bittern	<i>Eurypyga helias</i>	1 1 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	1 1 0
Little Black Bustard	<i>Eupodotis afra</i>	1 2 0	0 0 0	0 0 0	0 0 0	1 0 0	0 0 0	0 2 0





	STOCK 31/12/1995			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/96		
	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
<b>SERPENTES</b>																					
Sunbeam Snake																					
Royal Python																					
Green Tree Python																					
Pacific Boa																					
Cuban Boa																					
Brazilian Rainbow Boa																					
Jamaican Boa																					
Rubber Boa																					
Madagascar Tree Boa																					
Emerald Tree Boa																					
Boa Constrictor																					
Green Anaconda																					
Jewel Racer																					
Honduran Milk Snake																					
Mangrove Snake																					
Indian Cobra																					
Green Mamba																					
Puff Adder																					
Tropical Rattlesnake																					
Urutu																					
Aruba Island Rattlesnake																					
	83	140	54	6	11	11	1	11	136	0	0	2	6	14	18	1	0	108	139	150	73
	277			28			148			2			38			109			362		

Number of Specimens 362  
Number of Species 50

**AMPHIBIANS STOCKLIST**

	STOCK 31/12/1995			RECEIVED			BORN/H'CH			D.N.S. 30 DAYS			DEATHS OTHERS			DISPOSALS			STOCK 31/12/96		
	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?	M	F	Y/?
Smoky Jungle Frog																					
Axolotl (Black Form)																					
" (White Form)																					
Japanese Fire-bellied Newt																					
Red Eyed Tree Frog																					
White's Tree Frog																					
New Guinea Tree Frog																					
Mexican Leaf Frog																					
Black & Gold Poison Arrow Frog																					
Black & Green Poison Arrow Frog																					
Yellow Striped Poison Arrow Frog																					
Goldduicean Poison Arrow Frog																					
Argentine Ornate Horned Frog																					
African Bullfrog																					
Albino South African Clawed Frog																					
Nigerian Clawed Frog																					
Climbing Toad																					
Surinam Toad																					
	15	20	94	8	0	0	0	0	185	0	0	50	5	8	37	1	0	107	17	12	85
	129			8			185			50			50			108			114		

Number of Specimens 114  
Number of Species 18

**FISHES STOCKLIST**

		STOCK 31/12/96					STOCK 31/12/96				
<b>OSTEOGLOSSIDAE</b>											
South American Arowana	<i>Osteoglossum bicirrhosum</i>			2	Mirror Carp				<i>Cyprinus carpio</i>	8	
Black Arowana	<i>Osteoglossum ferreirai</i>			2	Koi Carp				<i>Cyprinus carpio</i>	35	
Asiatic Arowana	<i>Sceloporus formosus</i>			4	Omani Blind Cave Fish				<i>Garra barreimiae</i>	120	
<b>MORMYRIDAE</b>					Golden Orfe				<i>Idus idus</i>	12	
Blunt Jaw Elephant Trunkfish	<i>Gnathonemus elephas</i>			4	Cumming's Barb				<i>Puntius cummingi</i>	4	
Elephant Trunkfish	<i>Gnathonemus ibis</i>			4	Pla Eesok				<i>Probarbus jullieni</i>	7	
Long-nosed Elephant Trunkfish	<i>Gnathonemus petersi</i>			6	Black Ruby Barb				<i>Puntius nigrofasciatus</i>	* 50	
Angolan Elephant Trunkfish	<i>Campylomormyrus cassaicus</i>			5	Golden Rudd				<i>Scardinius erythrophthalmus</i>	* 50	
Down Poker	<i>Campylomormyrus rynchophorus</i>			4	<b>CYPRINODONTIDAE</b>						
Short-nosed Elephant Trunkfish	<i>Mormyrus angolensis</i>			4	Killie Fish				<i>Nothobranchius korthausae</i>	**Resting, eggs only	
Short-faced Elephant Trunkfish	<i>Mormyrus longirostris</i>			2	Nosy Be Killie Fish				<i>Pachypanchax homalonafus</i>	* 19	
Round-nosed Elephant Trunkfish	<i>Pollimyrus castelnaui</i>			4	Killie Fish				<i>Pachypanchax sakarami</i>	11	
<b>CHARACIDAE</b>					Pike Livebearer				<i>Belonesox belizanus</i>	6	
Red-eyed Characin	<i>Arnoldichthys spilopterus</i>			4	Butterfly Goodeid				<i>Ameiops splendens</i>	* 150	
Long-finned Characin	<i>Brycinus longipinnis</i>			2	Bold Characodon				<i>Characodon audax</i>	* 60	
Cardinal Tetra	<i>Paracheirodon axelrodi</i>			15	Mexclapique				<i>Girardinichthys viviparus</i>	* 60	
Congo Tetra	<i>Phenacogrammus interruptus</i>			10	Solo Goodeid				<i>Xenopohorus captivus</i>	* 80	
Black Phantom Tetra	<i>Megalampodus megalopterus</i>			6	Crescent Zoe				<i>Zoogoneticus sp.</i>	* 40	
Gold Tetra	<i>Hemigrammus rodwayi</i>			10	Swordtail				<i>Xiphophorus clemenciae</i>	60	
Black Neon Tetra	<i>Hyphessobrycon herbertaxelrodi</i>			2	Monterey Platy				<i>Xiphophorus couchinanus</i>		
Rummy-nosed Tetra	<i>Hemigrammus bleheri</i>			40					'Apodaca'	* 60	
<b>GYRINOCHEILIDAE</b>					Red Swordtail				<i>Xiphophorus helleri</i>	* 10	
Sucking Loach	<i>Gyrinocheilus aymanieri</i>			6	Guppy				<i>Poecilia picta</i>	24	
<b>GASTERAPELECIDAE</b>					Guppy				<i>Poecilia reticulata</i>	* 300	
Marbled Hatchetfish	<i>Carnegialla strigata</i>			2	<b>HEMIRAMPHIDAE</b>						
<b>CYPRINIDAE</b>					Halfbeaks				<i>Nomorampus ebrardi</i>	* 40	
Silver Shark	<i>Balantiocheilus melanopterus</i>			8	<b>COBITIDAE</b>						
Cherry Barb	<i>Capoeta titteya</i>			10	Clown Loach				<i>Botia macracantha</i>	10	
Goldfish (various)	<i>Carassius auratus</i>			35	Dwarf Loach				<i>Botia sidhimunki</i>	10	
Grass Carp	<i>Ctenopharyngodon idella</i>			6	<b>ELECTROPHORIDAE</b>						
					Electric Eel				<i>Electrophorus electricus</i>	1	

		STOCK			STOCK	
		31/12/96			31/12/96	
<b>CICHLIDAE</b>						
Lake Victoria Cichlid	<i>Haplochromis obliquoides</i>	*	8	<i>Potamotrygon motoro</i>	4	
Lake Victoria Cichlid	<i>Astatoreochromis alluaudi</i>	*	140	<i>Protopterus annectens</i>	1	
Lake Victoria Cichlid	<i>Haplochromis argens</i>	*	35	<i>Myripristis axillaris</i>	2	
Lake Victoria Cichlid	<i>Haplochromis nyererei</i>	*	13	<i>Aeoliscus strigata</i>	2	
Lake Victoria Cichlid	<i>Haplochromis pyrrocephalus</i>	*	120	<i>Hippocampus</i> sp.	300	
Lake Victoria Cichlid	<i>Haplochromis riponius</i>	*	30	<i>Dorythamphus excisus</i>	1	
Lake Victoria Cichlid	<i>Haplochromis sauvagei</i>	*	40	<i>Dorythamphus janssi</i>	1	
Lake Victoria Cichlid	<i>Haplochromis velvet black</i>	*	90	<i>Parambassis gulliveri</i>	5	
Lake Victoria Cichlid	<i>Haplochromis xenognathus</i>	*	25	<i>Cephalopholis argus</i>	1	
Otjikoto tilapia	<i>Tilapia guinasana</i>	*	24	<i>Monodactylus argenteus</i>	1	
Heckel Discus	<i>Symphysodon discus discus</i>	*	6	<i>Dendrochirus zebra</i>	1	
Lake Malawi Cichlid	<i>Rhamphochromis macrophthalmus</i>	*	1	<i>Pterois radiata</i>	3	
Lake Malawi Cichlid	<i>Nimbochromis venustus</i>	*	3	<i>Dendrochirus biocellatus</i>	1	
Lake Malawi Cichlid	<i>Melanchromis auratus</i>	*	6	<i>Selenotoca multifasciata</i>	1	
Lake Malawi Cichlid	<i>Pseudotropheus elongatus charlosi</i>	*	20	<i>Scatophagus argus</i>	2	
Lake Malawi Cichlid	<i>Cyrtocara moorii</i>	*	7	<i>Amphiprion akallopisos</i>	1	
Lake Malawi Cichlid	<i>Pseudotropheus socolofi</i>	*	70	<i>Amphiprion ephippium</i>	2	
Lake Malawi Cichlid	<i>Pseudotropheus lombardoi</i>	*	10	<i>Amphiprion frenatus</i>	2	
Lake Malawi Cichlid	<i>Pseudotropheus elongatus ornatus</i>	*	15	<i>Amphiprion ocellaris</i>	3	
Lake Malawi Cichlid	<i>Labidochromis caeruleus</i>	*	20	<i>Pomacentrus alleni</i>	5	
Lake Malawi Cichlid	<i>Labidochromis chisumulae</i>	*	6	<i>Paracanthurus hepatus</i>	4	
Lake Malawi Cichlid	<i>Labeotropheus fuelleborni</i>	*	50	<i>Zebrasoma flavescens</i>	5	
Altum Angelfish	<i>Pterophyllum scalare altum</i>	*	8	<i>Zebrasoma veliferum</i>	1	
<b>ANABANTIDAE</b>						
Pearl Gourami	<i>Trichogaster leeri</i>	*	12	<i>Balistoides conspicillum</i>	1	
Sparkling Gourami	<i>Trichopsis pumilus</i>	*	2	<i>Odonus Niger</i>	2	
Moonlight Gourami	<i>Trichogaster microlepis</i>	*	4	<i>Diodon holacanthus</i>	1	
<b>ATHERINIDAE</b>						
Red Rainbow Fish	<i>Glossolepis incisus</i>	*	12	<i>Pterapogon kauderni</i>	3	
Boeseman's Rainbow Fish	<i>Melanotaenia boesemani</i>	*	12	<i>Sphaeramia nematoptera</i>	2	
Lake Tebera Rainbow Fish	<i>Melanotaenia herbataxelrodi</i>	*	14	<i>Apogon</i> sp.	1	
Lake Kutubu Rainbow Fish	<i>Melanotaenia lacustris</i>	*	12	<b>LABRIDAE</b>		
Dwarf Rainbow Fish	<i>Melanotaenia praecox</i>	*	16	Dragon Wrasse	<i>Novaculichthys taeniourus</i>	1
Fork-tailed Rainbow Fish	<i>Popondetta furcata</i>	*	7	<b>SCARIDAE</b>		
<b>ICTALURIDAE</b>						
Channel Catfish	<i>Ictalurus punctatus</i>	*	4	Biocolour Clown Parrotfish	<i>Cetoscarus bicolor</i>	1
<b>MOCHOKIDAE</b>						
Polka-dot Upside-down Catfish	<i>Synodontis angelicus</i>	*	8	<b>GOBIIDAE</b>		
Upside-down Catfish	<i>Synodontis nigriventis</i>	*	7	Peacock Goby	<i>Tateumidina ocellicauda</i>	18
Lake Malawi Upside-down Catfish	<i>Synodontis nyassae</i>	*	5	Yellow Coral Goby	<i>Gobiodon okinawae</i>	1
<b>CALLICHTHYIDAE</b>						
Arched Corydoras	<i>Corydoras arcuatus</i>	*	4	<b>ANTHIINAE</b>		
Burgess's Catfish	<i>Corydoras burgessi</i>	*	10	Lyre-tail Corallfish	<i>Anthias squamipinnis</i>	4
Blue Catfish	<i>Corydoras nattereri</i>	*	6	<b>TOTAL</b>	<b>2833</b>	
Panda Catfish	<i>Corydoras panda</i>	*	24	<b>Number of Specimens 2833</b>		
Flag Tail Catfish	<i>Corydoras robiniae</i>	*	6	<b>Number of Species 136</b>		
Peppered Catfish	<i>Corydoras paleatus</i>	*	12	*denotes species bred in 1996		
<b>LORICARIIDAE</b>						
Bristlenose Plecostomus	<i>Ancistrus dolichopterus</i>	*	60			
Twig Catfish	<i>Farkowella acus</i>	*	3			
Plecostomus Catfish	<i>Hypostomus plecostomus</i>	*	5			
Clown Plecostomus	<i>Peckoltia</i> sp.	*	12			
Whiptailed Catfish	<i>Sturisoma aureum</i>	*	2			
Dwarf Sucking Catfish	<i>Otocinclus affinis</i>	*	12			
Angelica Peckoltia	<i>Peckoltia</i> sp.	*	2			
Emperor Peckoltia	<i>Hypancistrus zebra</i>	*	1			
<b>TOXOTIDAE</b>						
Archer Fish	<i>Toxotes jaculator</i>	*	4			

## INVERTEBRATES STOCKLIST

		STOCK			STOCK		
		31/12/96			31/12/96		
<b>ARACHNIDS</b>							
Pink-toe Tarantula	<i>Avicularia avicularia</i>	*	1	Brain Coral	<i>Trachyphyllia geoffroyi</i>	aq	2
Mexican Red-knee Tarantula	<i>Eualatus smithii</i>	*	15	Mushroom Polyps	<i>Actinodiscus</i> sp.	aq	24
<b>INSECTS</b>							
Jungle Nymph	<i>Heteropryxdlilitata</i>	*	6	Mouse Ear Coral	<i>Lobophytom crassum</i>	aq	1
Stick Insect	<i>Baculum extrudentum</i>	*	100	Encrusting Anemone	<i>Palythoa</i> sp.	aq	2
Spiny Stick Insect	<i>Eurycantha calcarata</i>	*	70	Bowl Coral	<i>Turbinaria pelata</i>	aq	1
Macleays' Spectre	<i>Extastoma tiaratum</i>	*	10	Star Coral	<i>Favites</i> sp.	aq	1
Fruit Beetle	<i>Pachnada</i> sp.	*	50	Star Coral	<i>Favia</i> sp.	aq	2
<b>MILLIPEDES</b>							
Seychelles Millipede	<i>Scathostreptus seychellarum</i>	*	2	Bouquet Coral	<i>Euphilia glabricens</i>	aq	1
<b>MOLLUSCS</b>							
Turbo Snail	<i>Turbo castaneus</i>	aq*	10	Frogspawn Coral	<i>Euphilia divisa</i>	aq	4
Drill	<i>Thais</i> sp.	aq	1	Coral	<i>Euphilia picteti</i>	aq	2
African Land Snail	<i>Achatina fulica</i>	*	2	<b>CRUSTACEANS</b>			
Partula Snail	<i>Partula varia</i>	*	113	Banded Coral Shrimp	<i>Stenopus hispidus</i>	aq	1
Partula Snail	<i>Partula taeniata</i>	*	135	Cleaner Shrimp	<i>Lysmata debelius</i>	aq	4
Partula Snail	<i>Partula tohiviana</i>	*	10	Hermit Crab	<i>Dardanus</i> sp.	aq	1
Conch	<i>Fusinus polygonoides</i>	aq	1	Tadpole Shrimp	<i>Triops cancriformis</i>	aq	Resting, eggs only
Southern Giant Clam	<i>Tridacna derasa</i>	aq	2	<b>ECHINODERMS</b>			
<b>COELENTERATES</b>							
Sea Anemone	<i>Heteractis</i> sp.	aq*	6	Red Pencil Urchin	<i>Heterocentrotus mammillatus</i>	aq	3
Sand Anemone	<i>Phymanthus crucifer</i>	aq	1	Slate Pencil Urchin	<i>Eucidaris tribuloides</i>	aq	1
Leather Coral	<i>Sarcophyton trocheliophorum</i>	aq*	6	Serpent Starfish	<i>Ophiolepis superba</i>	aq	1
Soft Coral	<i>Xenia</i> sp.	aq*	1	Green Brittle Starfish	<i>Ophiarachna incrassata</i>	aq	10
Zoanthid Colony	<i>Zoanthid</i> sp.	aq	2	<b>TOTAL</b>	<b>622</b>		
Soft Coral	<i>Sinularia</i> sp.	aq	1	<b>Number of Specimens 622</b>			
Soft Coral	<i>Cladiella</i> sp.	aq*	16	<b>Number of Species 40</b>			

\*indicates species bred in the Society's collection in 1996

aq indicates species kept in the Aquarium



The edge pattern graphic throughout this report is derived from a photograph of Karha's skin with computer manipulation by Masons Design and Print.

## North of England Zoological Society

The Society would like to thank everyone who has helped in 1996 - Council, Members, Benefactors, and individual and corporate Adopters, permanent and seasonal Staff, members of the Employment Training Teams, Work Experience Students, Chester City Council, Cheshire County Council, Volunteers and Friends. We are also grateful to Suppliers and Contractors for often achieving that 'extra' for us that makes all the difference.



**CHESTER**

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